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Stormwater Pollution Prevention Plan

for:

TA54 Maintenance Facility West

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Environmental Protection Division (ENV)
ENV-Compliance Programs (CP)
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SECTION 1: FACILITY DESCRIPTION AND CONTACT INFORMATION

1.1 Facility Information

Facility Information

Name of Facility: Los Alamos National Laboratory

Street: Mesita Del Buey Rd

City: Los Alamos State: NM ZIP Code: 87545

County or Similar Subdivision: TA-54 Maintenance Facility West

NPDES ID (i.e., permit tracking number): NMR 053195 (if covered under a previous perm

Primary Industrial Activity SIC code, and Sector and Subsector (2015 MSGP, Appendix D and Part 8):
SIC 4231, Sector P, Subsector P1

Co-located Industrial Activity(s) SIC code(s), Sector(s) and Subsector(s) (2015 MSGP, Appendix D):
not applicable

Latitude/Longitude

Latitude: Longitude:

35.837249 º N (decimal degrees) -106. 255215 º W (decimal degrees)

Method for determining latitude/longitude (check one):

☐USGS topographic map (specify scale:_____) ☐GPS

☒Other (please specify): Google Earth

Horizontal Reference Datum (check one):

☐NAD 27 ☐NAD 83 ☒WGS 84

Is the facility located in Indian country? ☐Yes ☒No

If yes, name of Reservation, or if not part of a Reservation, indicate "not applicable." not applicable

Are you considered a "federal operator" of the facility?

Federal Operator – an entity that meets the definition of "operator" in this permit and is either any department, agency or instrumentality of the executive, legislative and judicial branches of the Federal government of the United States, or another entity, such as a private contractor, operating for any such department, agency, or instrumentality.

☒Yes ☐No

Estimated area of industrial activity at site exposed to stormwater: <1 (acres)

Discharge Information

Does this facility discharge stormwater into a municipal separate storm sewer system

(MS4)? ☐Yes ☒No

If yes, name of MS4 operator: not applicable

Name(s) of surface water(s) that receive stormwater from your facility: Direction of stormwater flow on the site is primarily to the south into Pajarito Canyon.

Does this facility discharge industrial stormwater directly into any segment of an "impaired water" (see definition in 2015 MSGP, Appendix A)? ☒Yes No

If Yes, identify name of the impaired water(s) (and segment(s), if applicable): Pajarito Canyon

Identify the pollutant(s) causing the impairment(s): Polychlorinated Biphenyls (PCBs), and Total Aluminum.

Which of the identified pollutants may be present in industrial stormwater discharges from this facility?

none

Has a Total Maximum Daily Load (TMDL) been completed for any of the identified pollutants? If yes, please list the TMDL pollutants: not applicable

Does this facility discharge industrial stormwater into a receiving water designated as a Tier 2, Tier 2.5 or Tier 3 water (see definitions in 2015 MSGP, Appendix A)? ☐Yes ☒No

Are any of your stormwater discharges subject to effluent limitation guidelines (ELGs) (2015 MSGP Table 1-1)? ☐Yes ☒No

If Yes, which guidelines apply? not applicable

1.2 Contact Information/Responsible Parties

Facility Operator(s):

Name: Los Alamos National Security, LLC

Also known as Los Alamos National Laboratory
Environmental Protection Division (ENV)
ENV Compliance Programs (CP)
Address: P.O. Box 1663 K490
City, State, Zip Code: Los Alamos, NM 87545
Telephone Number: 505-664-5265

SWPPP Contact:

Holly Wheeler, MSGP Compliance Project Lead
ENV-CP, Water Quality Team
Telephone number: (505) 667-1312
Email address: hbenson@lanl.gov

Facility Owner(s): Environmental & Waste Management Operations (EWMO)

TA54 Operations Center: (505-665-2735)
Barry Walker, EWMO Maintenance Manager
Address: PO Box 1663 MS J593
City, State, Zip Code: Los Alamos, NM 87545
Telephone Number: (505) 667-3122

Email address: mbwalker@lanl.gov@lanl.gov

Louis Smith, Work Execution Manager (WEM)
Telephone number: (505) 667-4282
Email address:l_smith@lanl.gov

Facility SWPPP Contacts:
SWPPP Contact Name (Primary): David Schrock, DESHS -EWMO Deployed Environmental Professional
Telephone number: (505) 665-6547
Email address: dschrock@lanl.gov

SWPPP Contact Name (Backup): Bob Stokes, DESHS -EWMO ESH Manager
Telephone number: (505) 606-0947
Email address: rstokes@lanl.gov

1.3 Stormwater Pollution Prevention Team

The Facility has established a Stormwater Pollution Prevention Team (PPT). The Pollution Prevention Team (PPT) is responsible for development, implementation, maintenance and revision of this SWPPP as well as maintaining control measures and taking corrective actions where required. The members are selected because of their familiarity with heavy equipment maintenance activities and the potential impact of these activities on stormwater runoff. All Stormwater PPT members will have access to either a hard copy or an electronic version of this SWPPP. The PPT includes representatives of ENV-CP, who serve in an advisory capacity, collect samples and perform visual examination of stormwater compliance under the National Pollutant Discharge Elimination System (NPDES) permit regulations. Each member of the Team will receive SWPPP training, a contact sheet for PPT members and duties as listed in Table 1.3, Stormwater Pollution Prevention Team of this SWPPP. A list of the current PPT members and duties is provided in the table below. This list will be revised when there are changes in team members or their duties.

Table 1.3. Stormwater Pollution Prevention Team

Staff Names	Individual Responsibilities
Bob Stokes DESHS-EWMO Manager: Pollution Prevention Team Leader	The PPT Leader is responsible for managing the environmental compliance program within the facility. The PPT Leader is responsible for the implementation of the SWPPP and its associated Best Management Practices (BMP)s and for overseeing the assigned duties of other team members. The PPT Leader is responsible for ensuring that problems noted in inspections are corrected. The PPT Leader is also responsible for ensuring that the SWPPP is up to date and revised, as required. The PPT Leader or designee will also assist or designate a representative to assist ENV-CP in performing a routine facility inspection described in Section 4.6, Facility Routine Inspections and Quarterly Visual Inspections of the SWPPP. In addition, the PPT Leader or designated representative will ensure that appropriate facility and other LANS personnel receive the

	training specified in Section 4.5, Employee Training of the SWPPP and any other training required by the 2015 MSGP.
Holly Wheeler ENV-CP Water Quality Subject Matter Expert (SME**)**	ENV-CP Water Quality SME personnel will provide technical guidance to the PPT concerning SWPPP contents, BMP selection and installation, and implementation of the SWPPP. They may also aid in performing and documenting the Inspections and Assessments and are responsible for performing the Annual Site Compliance Evaluation.
Barry Walker **DESHS** Maintenance Manager	The Environmental Waste Management Operations (EWMO) Facility Maintenance Manager is responsible for ensuring good housekeeping, BMP maintenance, and corrective actions are scheduled and implemented in a timely manner as required by the permit. The EMWO Maintenance Manager ensures operators and mechanics receive required training specified in the SWPPP and in the 2015 MSGP for stormwater pollution prevention. In addition, the EWMO Maintenance Manager notifies the Deployed Environmental Professional (DEP) whenever there is a development or change in facility operations that may require a revision to the SWPPP or change to control measures.
Robyn Petersen Waste Management Coordinator (WMC)	The Waste Management Coordinator is responsible for assisting with cleanup of spilled of released pollutants and for directing the appropriate waste management of all resultant clean up materials.
David Schrock DESHS-EWMO Deployed Environmental Professional (DEP)	The DESHS -EWMO Deployed Environmental Professional (DEP) is responsible for training, recordkeeping, and SWPPP revision. The DEP will ensure that all team members, operational site workers, and applicable supervisors receive SWPPP training. The DEP is also responsible for revising and updating the SWPPP as required. The DEP will ensure that inspection documents and other records relating to the SWPPP and stormwater pollution control measures are managed in accordance with the Permit and established document control procedures and that the SWPPP is kept current.

1.4 Site Description

Los Alamos National Laboratory (LANL) operates under the National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activities (MSGP). This permit governs stormwater discharges from industrial activities. Under the Permit, the Environmental Protection Agency (EPA) requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). SWPPPs must be developed in accordance with the provisions of the Clean Water Act (33 U.S.C. 1251 et seq.) and the regulations established by the U.S. EPA for the NPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity [Federal Register (FR) 73, 56572], hereinafter referred to as the 2015 MSGP.

The purpose of this SWPPP is to ensure that all potential sources of stormwater pollution at the TA54 Maintenance Facility West are documented. It also describes specific stormwater control measures, also known as Best Management Practices (BMPs) that are used to reduce or eliminate pollutants in stormwater discharges and identifies implementable processes and procedures in place to comply with the terms and

conditions of the 2015 MSGP. Through potential pollutant reduction, environmental problems that result in lost resources and costly restoration activities may be averted. BMPs include maintenance activities, formalized work practice reviews, training, activity scheduling, stabilization, structural controls, and additional documentation to support eligibility considerations and to include Endangered Species and Historic properties. This SWPPP is intended to be a "living document." Updates may be necessary as the result of a corrective action or when industrial activities or stormwater controls change. The 2015 MSGP requires prompt revision of the SWPPP to reflect these changes.

This SWPPP applies to stormwater discharges associated with industrial activities from vehicle and heavy equipment maintenance operations conducted at TA54 Maintenance Facility West by Logistics Division, Heavy Equipment Maintenance Site Services (MSS) personnel at Los Alamos National Laboratory, Los Alamos County, New Mexico. This facility is under the control of the Environmental & Waste Management Facility Operations Director (EWMO-FOD). Operations conducted at this facility fall within the Multi-Sector General Permit requirements for Sector P, Land Transportation and Warehousing.

TA54 Maintenance Facility West is located on Mesita del Buey approximately two miles east from the Pajarito and Rex Road intersection between Pajarito Canyon to the south and Cañada del Buey to the north. It is situated just south of Mesita del Buey Road between buildings 54-0533 to the west and 54-0247 to the east.

The industrial activities at the site are described as vehicle and heavy equipment maintenance and repair. Activities that are or may be conducted outdoors include fueling, vehicle and equipment maintenance and repair, vehicle and equipment storage and parking, loading/unloading, material storage, and waste storage. Materials stored on-site include vehicles and equipment awaiting maintenance, lubricating fluids, anti-freeze, cleaners, equipment parts, miscellaneous equipment designated for salvage or disposal, universal waste, used oil, recyclables, and trash. Operations at these facilities fall within the NPDES MSGP requirements for Sector P, Land Transportation and Warehousing. Vehicle and heavy equipment maintenance and repair activities at the TA54 Maintenance Facility West are conducted by MSS personnel under the direction of the EWMO-FOD.

The average annual rainfall for Los Alamos is 18.51 inches. Intense thunderstorms are common in the Los Alamos area during August and September. The New Mexico Water Quality Control Commission (WQCC) standard for Limited Aquatic Life applies to the receiving water for this facility. Pajarito Canyon (within LANL below Arroyo de la Delfe) is listed as impaired for polychlorinated biphenyls (PCBs) and total aluminum.

1.5 General Location Map

A general location map identifying the location of the TA54 Maintenance Facility West and all receiving waters for stormwater discharges is included as Attachment A, General Location Map.

1.6 Site Map

The industrial site is 0.93 acres. The location and extent of significant structures and percent imperviousness; directions of stormwater flow; locations of all existing structural control measures; the location of the receiving water in the immediate vicinity of the facility; and the locations of the vegetative swale and culverts, which are the only stormwater conveyances at the site, are identified on the site map in Attachment B. In addition, locations of potential pollutant sources (e.g., fueling truck and recycle bins); the location of the stormwater monitoring station; inlet and outfall; and locations where industrial activities are exposed to precipitation (vehicle/equipment maintenance area for non-liquid repairs) are also identified on

this map. There are no locations or sources of run-on to the site from adjacent property that contain significant quantities of pollutants.

SECTION 2: POTENTIAL POLLUTANT SOURCES

This section describes areas at the TA54 Maintenance Facility West where industrial materials or activities are exposed to stormwater and from where allowable non-stormwater discharges are released.

2.1 Potential Pollutants Associated with Industrial Activity

Table 2.1, Potential Pollutants Associated With Industrial Activity, identifies specific industrial activities and associated pollutants at the TA54 Maintenance Facility West that are potentially exposed to stormwater. The list of potential pollutants associated with the industrial activities includes all significant materials that have been handled, managed, or stored at the site.

Table 2.1. Potential Pollutants Associated with Industrial Activity

Industrial Activity	Associated Pollutants
Equipment and vehicle fueling	Fuel, oil, heavy metals
Equipment and vehicle maintenance	Chlorinated solvents, oil, hydraulic and transmission fluid, grease, heavy metals acid/alkaline wastes, ethylene glycol, fuel
Outdoor vehicle and equipment storage and parking	Oil, hydraulic fluid, heavy metals, fuel
Painting areas	Paint, spent chlorinated solvents
Liquid and chemical storage	Oil, grease hydraulic and transmission fluid, heavy metals, fuel, paint, materials being stored, salt
Loading and Unloading	Oil, grease hydraulic and transmission fluid, heavy metals, fuel, materials being stored
Waste Storage	Oil, hydraulic and transmission fluid, heavy metals, fuel, scrap metal, trash, aerosol cans
Recycle bins	Oil and grease residues on metal for recycling

2.2 Spills and Leaks

Table 2.2, Areas of Site where Potential Spills /Leaks Could Occur is a description of areas where potential spills and leaks could occur at the TA54 Maintenance Facility West that could contribute pollutants to stormwater discharges, and the outfall or location likely to be affected by such spills and leaks.

Table 2.2. Areas of Site Where Potential Spills/Leaks Could Occur

Location	Discharge Points
Receiving/Loading area on north side of the facility	Sheet flow northward from site into swale on north side of facility, eastward into a culvert leading to Pajarito Canyon.
Used Oil Storage area on southeast corner of the facility	Sheet flow south and eastward on site into an earthen berm on north and east sides of facility, retains stormwater on site.
Vehicle/equipment maintenance and repair area on concrete pad in the NW corner of the facility	Sheet flow north and eastward into the swale on the north side of the facility, eastward into a culvert leading to Pajarito Canyon.

Description of Past Spills/Leaks

There have been no significant spills or leaks (releases of oil or hazardous substances in excess of quantities) that are reportable under CWA Section 311 (see 40 CFR 110.6 and 40 CFR 117.21) or Section 102 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 USC §9602) in an exposed area or a stormwater conveyance at the TA54 Maintenance Facility West. Minor spills or leaks (if they occur) are entered into the ENV-CP MSGP CAR database and identified in the MSGP Annual Report.

2.3 Unauthorized Non-Stormwater Discharges Documentation

Table 2.3. Unauthorized Non-Stormwater Discharges

Facility	Date of evaluation	Description of the evaluation criteria used:	List of the outfalls or onsite drainage points that were directly observed during the evaluation	Different types of non-stormwater discharge(s) and source locations:	Control measures used to eliminate unauthorized discharge(s), if any were identified.
TA54 Maintenance Facility West	12/4/14	Visual	Discharge point 049 and swale to the north	N/A	N/A

2.4 Salt Storage

Deicing salt is stored in small covered containers at various locations around the facility to deice walkways and small areas. It is not stored in piles for large scale road deicing.

2.5 Sampling Data Summary

Sampling of stormwater discharges associated with this industrial activity was not required by the 2008 NPDES MSGP as the facility was not in existence at that time. In late May 2014, stormwater inspectors identified maintenance activities as needing coverage under the MSGP and requiring a SWPPP. Because this is a newly identified facility, stormwater monitoring will begin in 2015. Data required by the 2015 MSGP will included in Attachment H. MSGP stormwater monitoring data is also maintained in the Environmental Information Management (EIM) System.

Located at the northeast corner of the TA54 Maintenance Facility West, Discharge Point 049, sampling at TA54 Maintenance Facility West is performed at automated sampling station 54-MFW-1 for impaired waters and quarterly visual assessments.

SECTION 3: STORMWATER CONTROL MEASURES

3.1 Non-Numeric Technology-Based Effluent Limits (BPT/BAT/BCT)

TA54 Maintenance Facility West personnel implement stormwater control measures designed to ensure operator safety, environmental protection, and proper use and maintenance of loading/unloading and waste management equipment. MSS-EWMO performs routine preventive and corrective maintenance work to ensure industrial equipment is in good working order. The operational procedures incorporate provisions for corrective, predictive and preventative maintenance. They also address appropriate adjustment and/or replacement of devices, equipment, and systems. This program allows for identification and corrections of conditions that have the potential to cause breakdowns or failures that could result in the release of pollutants to the environment.

The following sections describe the stormwater control measures installed at the TA54 Maintenance Facility West to meet each of the permit's "non-numeric effluent limits" in Part 2.1.2 of the MSGP. Follow the Spill Prevention Control and Countermeasure (SPCC) Plan for the MSS-EWMO Refueling Truck (LA-UR-15-22845) to inspect the TA54 tanker truck and recessed earthen catchment monthly.

3.1.1 Minimize Exposure

Structural controls and practices used to minimize the exposure of material storage areas and industrial activities to rain, snow, snowmelt, and runoff at the TA54 Maintenance Facility West include:

- Maintenance activities are conducted indoors or under cover, when possible, or within a bermed area
- Fueling operations are conducted on an impervious surface or over a catch pan
- Fuel tanks are not "topped off"
- Spill cleanup/response materials are readily available
- Drip pans and/or secondary containment systems are placed under leaking or leak prone equipment
- Wet clean up practices that would result in the discharge of pollutants to stormwater drainage systems are prohibited.
- Prompt cleanup of releases with absorbent pads, biodegradable/bioremediation dry absorbents (Oil Sponge™ or equal), or dispersant/bioremediation liquid product (e.g., MicroBlaze® for stains)
- Procedures for material storage and handling (spill control) are current and in place
- Containers that could be susceptible to spillage or leakage are properly labeled to encourage proper handling and facilitate rapid spill response
- Equipment and vehicles that are decommissioned or that will remain unused for an extended period properly stored and fluids will be drained to prevent leaks
- Sweep or vacuum at regular intervals
- Cover all dumpsters or close with lid when not in use
- Proper control of lubricating fluids and cleaners
- Storage of all liquid products within a designated area either under cover and within secondary containment. Storage of used oil filters in designated covered bins under cover and within secondary containment

- Procedures that specify appropriate methods for handling wastes (in accordance with IWD DESHS-EWMO-WMC-IWD) so that they are not exposed to stormwater.
- Routine Facility Inspections (RFI) and Quarterly Visual Assessments (QVA) to ensure that this SWPPP is properly followed and that no potential contaminants are present in exposed areas as addressed in Section 4.6.1, Routine Facility Inspections and 4.6.2 Quarterly Visual Assessment of Stormwater discharges.
- Leaking vehicles and equipment for repair will be parked on impervious surfaces under cover.

3.1.2 Good Housekeeping

All areas will be maintained in a clean and orderly state. Attachment I lists Standard Operating and Maintenance Procedures at EWMO division sites that are designed to minimize the potential for spills, releases, exposure of materials, or any other events that could adversely affect the quality of stormwater water that may be transported out of the area by runoff. Good housekeeping practices implemented to keep exposed areas of TA54 Maintenance Facility West clean include:

- Daily cleanup of outside area following completion of daily operations.
- Daily sweeping of shop, when the facility is active.
- Maintenance of operational areas in a clean and orderly state.
- Trash dumpsters are emptied on a monthly basis and lids are kept closed when not in use. For dumpsters and roll off boxes that do not have lids and could leak, ensure that discharges have control (e.g., secondary containment).
- Wastes within regulated waste storage areas are picked on an as needed basis, prior to the container reaching its capacity. Containers are in good condition.
- Routine Facility Inspections to ensure that no potential contaminants are present in exposed areas.
- Inspection of heavy equipment for leaks and potential problems prior to beginning daily operations.
- Minimize stormwater run on/runoff to maintenance areas.
- Placement of drip pans and/or secondary containment systems under leaking or leak prone equipment.
- Immediate cleanup of releases with absorbent pads or biodegradable dry absorbents (Oil Sponge™ or equal), or dispersant/bioremediation liquid product (e.g., MicroBlaze® for stains) on concrete or asphalt. Stained base course must be picked up, containerized and managed as New Mexico Special Waste (NMSW).
- Maintenance activities are conducted indoors or under cover, when possible.
- Storage of all liquid products within labeled containers in a designated area either under cover and on secondary containment.
- Prohibition of wet clean up practices that would result in the discharge of pollutants to stormwater drainage systems.
- Wastes are managed and disposed in accordance with LANL P409, Waste Management Requirements.

3.1.3 Maintenance

Industrial equipment (such as forklifts, loaders, ATVs, excavators, grader) must be regularly inspected, tested, maintained, and repaired to avoid situations that may result in leaks, spills, and other releases of pollutants in stormwater discharge to receiving waters. All control measures used to achieve effluent limits required by the MSGP must be maintained in effective operating condition. Nonstructural control measures must also be diligently maintained (e.g., spill response supplies available, personnel, appropriately trained). If control measures need to be replaced or repaired, necessary repairs or modifications must be made as expeditiously as practicable. All corrective actions are identified and documented in accordance with ENV-RCRA-QP-022, MSGP Stormwater Corrective Actions. Every identified corrective action is entered into the ENV-CP Corrective Action Reporting database. This database is used to generate the MSGP Annual Report that is included in Attachment G, Annual Reports.

Operations at the TA54 Maintenance Facility West are conducted in accordance with routine corrective and preventive work packages. MSS maintains a listing of all EWMO owned equipment. This listing identifies when a piece of equipment is due for preventative maintenance (PM) or inspection. The Computerized Maintenance Management System (CMMS) maintains a listing of the preventative maintenance required for vehicles and equipment and generates a Work Order to have the equipment serviced and inspected in accordance with the manufacturer's required specifications for that specific equipment. Heavy equipment and vehicle PM and inspections are tracked by CMMS.

3.1.4 Spill Prevention and Response

The application of good housekeeping procedures and regular visual inspections performed by operations personnel minimize the probability of a spill or release. Also, LANL's institutional procedures P409, Waste Management, and P101-14, Chemical Management, require labeling of wastes, used oils, and chemicals stored on-site to facilitate the proper handling and response if spills or leaks occur.

Operational controls are implemented to minimize the possibility of any accidents resulting in spills or releases off site. Regulatory environmental reporting requirements are described in LANL's Environmental Protection Division Procedure ENV-DO-QP-101, Environmental Reporting Requirements for Releases or Events. In general, the approach to spill clean up of a known substance is to first contain the spill by securing the spill source and deploying spill containment materials. If secondary containment is being provided (e.g., secondary containment pallets for liquids) it will contain the spill. Small spills are responded to by the operator involved in the spill or by the operator located in the vicinity. For incidental releases, absorbents are used to pick up free liquids and the contaminated absorbents are properly disposed. Spill containment and clean up include the use of spill control kits, sorbent pillows, socks, sheets, and granules. Clean-up residues are managed as appropriate and as determined by the facility waste management coordinator and ENV-CP personnel depending on the material spilled. Larger spills or spills in watercourses require that ENV-CP personnel be notified, and that the Shift Operations Manager (SOM) notifies LANL's Emergency Operations - Emergency Response (EO-ER) Team.

The LANL EO-ER Office has been appointed by the Laboratory Director as the organization responsible for emergency management at the Laboratory. The LANL EO-ER Office will be notified if a spill cannot be easily controlled with the materials on hand, threatens to escape the facility or enter the environment, additional resources are needed, an unidentified hazard exists, injuries have occurred, fire protection is needed, or if operational or facility personnel are not adequately trained in the use of spill control equipment or are not confident in their ability to carry out spill response activities. Emergency Operations Support Center can be reached at 667-6211 or, after hours at 667-7080. If a fire or explosion is present, or if the potential for such

exists, the situation must be reported by dialing 911 from a non-cellular phone or by activating a fire pull box. 911 should also be dialed in the event of an employee injury. In the event of a spill, the EO-ER Office will notify the individuals or organizations responsible for the completion of spill reports or the fulfillment of regulatory reporting requirements.

At LANL, the completion of a spill report may be required in the event of a spill. This determination will be *made by the EO-ER Office or ENV-CP in accordance with Environmental Protection Division Procedure ENV-DO-QP-101, Environmental Reporting Requirements for Releases or Events, Laboratory* and DOE policies, and federal and state regulatory reporting requirements. In addition to fulfilling reporting requirements, spill reports will assist user groups and Laboratory management in assessing the cause of a spill and in executing corrective action.

Two types of spill reporting are required at the Laboratory: internal spill record keeping and external agency notification. Copies of internal spill reports will be kept by the Stormwater PPT member, ENV-CP and the responsible organization. External agency notification (as determined by EO-ER or ENV-CP personnel) may consist of verbal or written notification to the National Response Center, EPA Region VI, the New Mexico Environment Department, or Pueblos.

3.1.5 Erosion and Sediment Controls

Type of Erosion Control	Location of Control(s)
• Vegetative swales	See Site Maps (Attachment B)
• Culverts	See Site Maps (Attachment B)
• Earthen berms	See Site Maps (Attachment B)

3.1.6 Management of Runoff

The areas bordering the impervious surfaces at the TA54 Maintenance Facility West are stabilized with established native vegetation. This vegetative buffer holds soil in place, increases infiltration, retards and filters runoff. An earthen berm is present on the south and east sides. A vegetated swale on the north side of TA54 Maintenance Facility West directs stormwater runoff away from the facility.

3.1.7 Salt Storage Piles or Piles Containing Salt

Deicing salt is stored in covered containers at nearby structures and various locations around this facility. The deicing salt is applied conservatively to concrete, asphalt, and icy walk ways around the facility.

3.1.8 Dust Generation and Vehicle Tracking of Industrial Materials

The controls implemented at the TA54 Maintenance Facility West to minimize the generation of dust and off-site tracking of raw, final, or waste materials debris includes:

- Parking vehicles and equipment on impervious surfaces
- Minimizing off road travel
- The areas surrounding the TA54 Maintenance Facility West are covered with base course, the areas bordering the base course is stabilized with established native vegetation.

3.2 Sector-Specific Non-Numeric Effluent Limits

MSGP Sector P technology-based effluent limits include controls on industrial activities from hazardous waste treatment, storage or disposal facility areas. Potential pollutant sources include contaminated stormwater:

- The recycling bins and dumpsters lids closed when not in use. For dumpster and rolloff boxes that do not have lids and could leak, ensure that discharges have control (e.g., secondary containment).

The location of the stormwater monitoring station, inlet and outfall; and locations where industrial activities are exposed to precipitation are also identified on the Site map (Attachment B).

3.3 Numeric Effluent Limitations Based on Effluent Limitations Guidelines

The TA54 Maintenance Facility West is not an industrial sector subject to any of the effluent limitations Guidelines identified in MSGP Part 6.2.2.1

3.4 Water Quality-based Effluent Limitations and Water Quality Standards

Sampling of stormwater discharges associated with this industrial sector was not required by the 2008 NPDES MSGP as the facility was not in existence at that time. In late May, 2014, stormwater inspectors identified maintenance activities as needing coverage under the MSGP and requiring a SWPPP. Since this is a newly identified facility, stormwater monitoring will begin in 2015. Data required by the 2015 MSGP will be included in Attachment H. MSGP stormwater monitoring data is also maintained in EIM.

SECTION 4: SCHEDULES AND PROCEDURES

The schedule of work is formalized using The Lock-in system which is used to schedule work in advance and confirmed in the plan of the day before work begins. Waste pick up and disposal of waste is scheduled and tracked using the Waste Compliance and Tracking System (WCATS) system with the exception of the trash dumpster which are emptied monthly. Waste inspections are scheduled and conducted based on the type of waste accumulation area that the waste is being managed. These inspections check for leaks and condition of containers, tanks, and packaging. Back up practices for corrective actions requiring immediate attention is communicated directly to the TA54 Operations Center. Procedures supporting the implementation of this SWPPP are summarized in Attachment I.

4.1 Good Housekeeping

All areas will be maintained in a clean and orderly state. Attachment I, EWMO division sites are designed to minimize the potential for spills, releases, exposure of materials, or any other events that could adversely affect the quality of stormwater that may be transported out of the area by runoff. Good housekeeping practices implemented to keep exposed areas of TA54 Maintenance Facility West clean include:

- Daily cleanup of outside area following completion of daily operations.
- Daily sweeping of shop, when the facility is active.
- Maintenance of operational areas in a clean and orderly state.
- Trash dumpsters are emptied on a monthly basis and lids are kept closed when not in use. For dumpsters and roll off boxes that do not have lids and could leak, ensure that discharges have control. (e.g., secondary containment)
- Wastes within regulated waste storage areas are picked on an as need basis, prior to the container reaching its capacity. Containers are in good condition.
- Routine Facility Inspections to ensure that no potential contaminants are present in exposed areas.
- Inspection of heavy equipment for leaks and potential problems prior to beginning daily operations.
- Minimize stormwater run on/runoff to maintenance areas.
- Placement of drip pans and/or secondary containment systems under leaking or leak prone equipment.
- Immediate cleanup of releases with absorbent pads or biodegradable dry absorbents (Oil Sponge™ or equal), or dispersant/bioremediation liquid product (e.g., MicroBlaze® for stains) on concrete. Stained base course must be picked up, containerized and managed as New Mexico Special Waste (NMSW).
- Maintenance activities are conducted indoors or under cover, when possible.
- Storage of all liquid products within labeled containers in a designated area either under cover and on secondary containment.
- Prohibition of wet clean up practices that would result in the discharge of pollutants to stormwater drainage systems.
- Wastes are managed and disposed in accordance with LANL P409, Waste Management, requirements.

4.2 Maintenance

All industrial equipment must be regularly (preventative maintenance, and before use)inspected, tested, maintained, and repaired to avoid situations that may result in leaks, spills, and other releases of pollutants in stormwater discharge to receiving waters. All control measures used to achieve effluent limits required by the MSGP must be maintained in effective operating condition. Nonstructural control measures must also be diligently maintained (e.g., spill response supplies available, personnel, appropriately trained). If control measures need to be replaced or repaired, necessary repairs or modifications must be made as expeditiously as practicable. All corrective actions are identified and documented in accordance with ENV-RCRA-QP-022, MSGP Stormwater Corrective Actions. Every identified corrective action is entered into the ENV-CP Corrective Action Reporting database. This database is used to generate the MSGP Annual Report that is included in Attachment G.

The Integrated Work Document (IWD) used to conduct operations at the TA54 Maintenance Facility West describes the work activities, identifies the hazards, and links them to specific controls. MSS-EWMO maintains a listing of all EWMO owned equipment. This listing identifies when a piece of equipment is due for preventative maintenance (PM) or inspection. The CMMS maintains a listing of the preventative maintenance required for vehicles and equipment and generates a Work Order to have the equipment serviced and inspected per the manufacturer's required specifications for that specific equipment. Heavy equipment and vehicle PM and inspections are tracked by CMMS.

The maintenance schedule or frequency for maintaining control measures is documented in the Facility Service Request (FSR) system. Additionally, the Engineering Service Request (ESR) system tracks controls requiring engineering evaluation and or verification.

4.3 Spill Prevention and Response Procedures

Spills or releases are minimized by the application of exposure minimization and good housekeeping procedures, best management practices, and engineering and administrative controls. Examples of spill prevention measures include:

- Storage of all liquid products within labeled containers in a designated area under cover and within secondary containment for preventing spills that can contaminate stormwater.
- Placement of drip pans and/or secondary containment systems under leaking or leak prone equipment.
- Prompt cleanup of releases with absorbent pads or biodegradable/bioremediation dry absorbents (Oil Sponge™ or equal), or dispersant/bioremediation liquid product (e.g., MicroBlaze® for stains on concrete and asphalt). Stained basecourse must be picked up and managed as NMSW.
- Spill cleanup/response materials are readily available.

Procedures for preventing and responding to spills, including notification, is covered in Section 3.1.4

4.4 Erosion and Sediment Control

The areas surrounding the TA54 Maintenance Facility West, including material and waste storage locations, are covered with structures, concrete, and base course, the areas bordering this area are stabilized with established native vegetation. A vegetated swale on the north side of TA54 Maintenance Facility West directs stormwater runoff away from the facility.

4.5 Employee Training

Employee training is essential for effective implementation and maintenance of the TA-54 SWPPP. The objective of the training program is to cover all required training topics identified in the most current version of the MSGP, review the most current SWPPP with employees and managers and understanding all sections in SWPPP, help employees recognize situations that could lead to stormwater contamination, assist employees in recognizing issues that may require corrective action and identifying appropriate corrective actions, and train personnel in proper spill response and control procedures.

All employees who work in areas where industrial materials or activities are exposed to stormwater or who are responsible for implementing activities necessary to meet the conditions of the 2015 MSGP, receive training annually. This includes all operational site workers, managers, and supervisors at TA-54, and all Stormwater PPT members: Annual employee training ensures that personnel are aware of the regulatory requirements in the 2015 MSGP, monitoring results, control measures, and some components of the SWPPP. After training, the employees are able to recognize and avoid situations that could lead to stormwater contamination, prevent spills and releases, and respond safely and effectively to a spill or release. Another resource for BMP installation and maintenance information is the LANL BMP Guidance Document located at: http://permalink.lanl.gov/object/tr?what=info:lanl-repo/lareport/LA-UR-11-10371.

The TA54 MSGP training includes Annual MSGP slide presentation and reviewing all sections of this SWPPP to address the following topics, at a minimum:

- Review all sections of the SWPPP
- Specific control measures used to achieve the effluent limits in Part 2 of the MSGP
- Stormwater monitoring results
- Inspections
- Planning
- Reporting
- Spill prevention, response and cleanup
- Good housekeeping and material management practices to prevent stormwater pollution
- Site-specific structures, equipment and procedures designed to minimize stormwater pollution and soil erosion
- Documentation requirements
- Recognition of pollutant sources
- Be aware of endangered species and historical buildings

Training activities are documented in accordance with P781-1 *Conduct of Training Manual* and records are maintained in LANL's official training database, UTRAIN. SWPPP training records are also maintained in this SWPPP.

4.6 Facility Routine Inspections and Quarterly Visual Assessments

This section describes procedures for performing the two types of inspections required by the 2015 MSGP permit including 1) Routine facility inspections, and 2) Quarterly visual assessments of stormwater discharges at the TA54 Maintenance Facility West and the method for addressing required corrective action identified during the inspections.

4.6.1 Routine Facility Inspections

Routine Facility Inspections will be conducted (by a qualified person, typically the EWMO Deployed Environmental Professional or ENV-CP Water Quality SME) of all areas of the facility where industrial materials or activities are exposed to stormwater, and of all stormwater control measures. The SWPP Team member performing the inspection will document the inspection on the form provided in Appendix F of this SWPPP and obtain an authorized signature. The completed inspection report will become a quality record in Appendix F of this plan.

One routine facility inspection must be conducted during a period when a stormwater discharge is occurring. Routine facility inspections will record and evaluate the following, at a minimum:

- The inspection date and time
- The name(s) and signature(s) of the inspector(s)
- Weather information and a description of any discharges occurring at the time of the inspection
- Any previously unidentified discharges of pollutants from the site
- Any control measures needing maintenance or repairs
- Any failed control measures that need replacement
- Must describe any discharges occurring at the time of the inspection
- Any unidentified discharges and/or pollutants from the site
- Any evidence of, or potential for, pollutants entering the drainage system
- Observations regarding the condition of the outfalls
- Any incidents of noncompliance observed
- Any additional control measures needed to comply with the MSGP

Specific areas of the facility to be inspected include:

- Storage areas for vehicles/equipment awaiting maintenance
- Fueling areas
- Indoor and outdoor vehicle/equipment maintenance areas
- Material storage areas
- Vehicle/equipment cleaning areas
- Loading/unloading areas
- Used oil storage area
- Waste storage area (e.g., solid waste dumpster)

Note: All documentation shall be included in this SWPPP.

Routine facility inspections occur on the following schedule for each calendar year:

- January 1 – March 31
- April 1 – June 30
- July 1 – September 30
- October 1 – December 31.

Any required corrective actions identified during the inspection will be addressed in accordance with Section 6, Corrective Actions and Deadlines of this plan, Parts 3.1, and 3.2 of the 2015 MSGP, and ENV-RCRA-QP-022, MSGP Stormwater Corrective Actions.

4.6.2 Quarterly Visual Assessment of Stormwater Discharges

The quarterly visual assessments are conducted at the single outfall for TA54 Maintenance Facility West by qualified stormwater sampling personnel procedures. Visual assessments will:

- Be conducted on a representative sample of a measurable discharge
- Use a clean clear glass sample container in a well-lit area
- Be collected in the first 30 minutes of a discharge from a storm event or document why it could not be collected during the specified time frame (adverse conditions, snowmelt, etc.)
- Be conducted at least 72 hours since the last storm event or document why it was collected sooner
- Include documentation of rationale if a visual assessment is unable to be collected in a quarter (no precipitation event or adverse conditions)
- Perform an additional assessment during the next qualifying storm event if unable to perform it in a particular quarter

Note: All documentation shall be included in this SWPPP.

Collection of quarterly visual assessments occurs on the following schedule for each calendar year in accordance with ENV-RCRA QP-064, MSGP Storm Water Visual Inspections:

- April 1 – May 31
- June 1 – July 31
- August 1 – September 30
- October 1 – November 30

The visual assessment will evaluate stormwater for the following water quality characteristics: color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of stormwater pollution.

The person performing the visual assessment will document potential stormwater pollution problems that were observed during the assessment on the Quarterly Visual Assessment form in accordance with Multi-Sector General Permit Storm Water Visual Inspections, ENV-RCRA-QP-064. Any required corrective actions identified during the assessment will be addressed in accordance with Section 6, Corrective Actions and Deadlines of this plan, Part 3 of the 2015 MSGP and MSGP Stormwater Corrective Actions, and ENV-RCRA-QP-0022. The results of the Quarterly Visual Assessments are included in Attachment E of this plan.

4.7 Monitoring

Monitoring activities applicable to your facility:

- Impaired waters monitoring and Quarterly Visual Assessment

There are no quarterly benchmarks for Sector P.

Located at the northeast corner of the TA54 Maintenance Facility West, Discharge Point 049, sampling at TA54 Maintenance Facility West is performed at automated sampling station number 54-MFW-1 for impaired waters and quarterly visual assessments.

Other ENV-CP procedures followed during the sampling, analysis, and reporting process are:

- ENV-RCRA-QP-045: Installing, Setting up, and Operating ISCO Samplers for the MSGP
- ENV-RCRA-QP-047: Inspecting Storm Water Runoff Samplers and Retrieving Samples for the MSGP
- ENV-RCRA-QP-048: Processing MSGP Storm Water Samples
- ENV-RCRA-QP-064: Multi-Sector General Permit Storm Water Visual Inspections

Sampling of stormwater discharges associated with this industrial activity was not required by the 2008 NPDES MSGP as the facility was not in existence at that time. In late May 2014, stormwater inspectors identified maintenance activities as needing coverage under the MSGP and requiring a SWPPP. Because this is a newly identified facility, quarterly and impaired water stormwater monitoring will begin in 2015. Impaired water constituents associated with the Pajarito Canyon are Polychlorinated biphenyls (PCBs) and total aluminum. Data required by the 2015 MSGP will be included in Attachment H. MSGP stormwater monitoring data is also maintained in EIM. There are no Substantially Identical Outfalls (SIOs) associated with the TA54 Maintenance Facility West.

Control Values:

Outfall: 049 (54-MFW-1)

Monitoring Requirement	Industrial Sector	Assessment Unit	Analyte	Filtered/ Unfiltered	Regulatory Standard	Units	Regulatory Standard Type	Regulatory Standard Reference
Impaired Waters	-	NM-128.A_08	1336-36-3 (Total PCBs)	UF	0.00064	ug/L	NM 2010 HH Persistent	20.6.4.900 NMAC Subpart J
Impaired Waters	-	NM-128.A_08	Al	F10u[1]	1699	ug/L	NM 2010 Aquatic Acute 60 mg	20.6.4.900 NMAC Subpart I
Quarterly Benchmark	P	No Benchmark Monitoring Required						

[1]F10u – 10 µm filter
[2]F - 0.45 µm filter

SECTION 5: DOCUMENTATION TO SUPPORT ELIGIBILITY CONSIDERATIONS UNDER OTHER FEDERAL LAWS

5.1 Documentation Regarding Endangered Species

The Los Alamos National Laboratory (LANL) Threatened and Endangered Species Habitat Management Plan (HMP) was prepared to provide for the protection of federally listed threatened and endangered species and their habitats at LANL. The HMP was designed to be a comprehensive landscape-scale management plan that balances the current operations and future development needs of LANL with the habitat requirements of threatened and endangered species. It also facilitates DOE compliance with the Endangered Species Act and related federal regulations. The HMP received concurrence from the U.S. Fish and Wildlife Service (USFWS) and was first implemented in 1999. All changes to the HMP, such as adding new species or changing requirements, are assessed in a new consultation with the USFWS before being implemented. The HMP provides guidance by species for different types of activities allowed without further review by the USFWS.

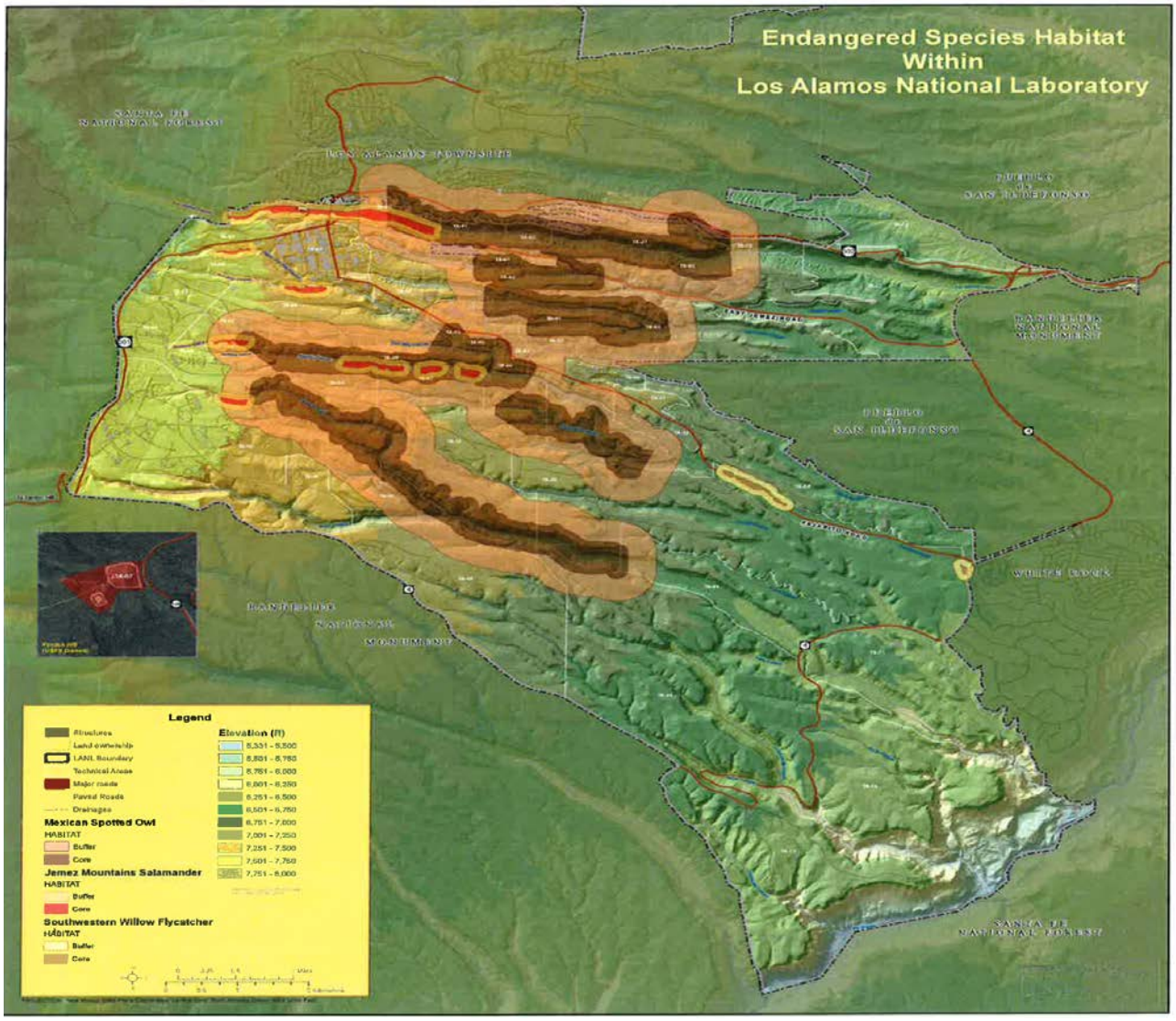
Currently, the only federally-listed species that have habitat or occur at LANL are the Southwestern Willow Flycatcher (Empidonax trailii extimus), Jemez Mountains Salamander (Plethodon neomexicanus), and Mexican Spotted Owl (Strix occidentalis lucida). Suitable habitats for these species, along with a protective buffer area surrounding the habitats, have been designated as Areas of Environmental Interests (AEIs). An AEI consists of a core area that contains important breeding or wintering habitat for a specific species and a buffer area around the core area. The buffer protects the core area from disturbances that would degrade the value of the core area to the species.

The HMP includes ecorisk analyses which account for any industrial facility's stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities. In addition, the Site-wide Environmental Impact Statement (SWEIS) biological assessment (BA) covered the continuation of Laboratory operations and included outfalls.

As determined by earlier evaluations, stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities from LANL MSGP locations are not likely to adversely affect any species that is federally-listed as endangered or threatened under Criterion D Section iii, the ESA, and will not result in the adverse modification or destruction of habitat that is federally-designated as "critical habitat" under the ESA. New activities are evaluated to determine if they will have an impact to any species. If an activity can be completed within the guidelines of the HMP it can go forward as scheduled; however, if the activity cannot comply with the guidelines, the HMP requires that a project-specific BA be prepared for the action and go through the consultation process with the USFWS.

New Mexico waters of the state and watersheds harbor endangered and threatened species and their critical habitat. The LANL SWEIS excerpt Map 5-1 shows the locations of endangered species and their associated waters of the state and watersheds. Although there is no areas of designated critical habitat and or threatened species on the Maintenance Facility West map (Attachment B), the storm water run-off may effect endangered species downstream from TA54 (Map 5-1 below).

Map 5-1. Endangered Species Habitat within Los Alamos National Laboratory



5.2 Documentation Regarding Historic Properties

TA54 Maintenance Facility West facility is not building or installing control measures that cause less than one (1) acre of subsurface disturbance, therefore, discharge-related activities do not have the potential to have an effect on historic properties.

In August 2015 and December 2008, the Cultural Resources Team (using GPS spatial data as well as conducting visual inspections), reviewed the Laboratory industrial sites (see list below) and their associated outfalls and monitoring stations subject to the 2015 Multi-Sector General Permit (Permit #NMR050000) for effects on historic properties. All of these sites were found to be undertakings of no effect and in compliance with Section 106 of the National Historic Preservation Act (i.e., Criterion B).

- TA-3-22 Power and Steam Plant
- TA-3-38 Metals Fabrication Shop
- TA-3-38 Wood Shop

- TA-3-39 and 102 Metal Shop
- TA-3-66 Sigma Complex
- TA-60 Asphalt Batch Plant
- TA-60-1 Heavy Equipment Yard
- TA-60 Material Recycle Facility
- TA-60 Roads and Grounds
- TA-60-2 Warehouse
- TA-54 Area L
- TA-54 Area G
- TA-54 Maintenance Facility West
- TA-54 RANT

SECTION 6: CORRECTIVE ACTIONS AND DEADLINES

6.1 Immediate Actions

Upon discovery of any of the following conditions, the condition must be documented within 24 hours of the discovery in the ENV-RCRA MSGP CAR database maintained by ENV-CP Water Quality team, in accordance with the ENV-CP-QP-022, MSGP Stormwater Corrective Actions, and provided to the TA54 Operations Center for initiation of Corrective Actions, if necessary:

- An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this or other NPDES permit) occurs at the facility
- A discharge violates a numeric effluent limit (currently there is no numeric effluent limits for TA54)
- Control measures are not stringent enough for the discharge to meet applicable water quality standards
- An inspection or evaluation of the facility determines that modifications to the to the control measures are necessary to meet the non-numeric effluent limits in this permit
- Routine facility inspection or quarterly visual inspection identifies that control measures are not being properly operated and maintained

6.2 Subsequent Actions

If additional actions are necessary beyond those implemented pursuant to Part 4.3.1, one must complete the corrective actions (e.g., install a new or modified control and make it operational, complete the repair) before the next storm event if possible, and within 14 calendar days from the time of discovery of the corrective action condition. If it is infeasible to complete the corrective action within 14 calendar days, one must document why it is infeasible to complete the corrective action within the 14-day timeframe. One must also identify your schedule for completing the work, which must be done as soon as practicable after the 14-day timeframe but no longer than 45 days after discovery. If the completion of corrective action will exceed the 45 day timeframe, one may take the minimum additional time necessary to complete the corrective action, provided that you notify the EPA Regional Office of your intention to exceed 45 days, your rationale for an extension, and a completion date, which you must also include in your corrective action documentation (MSGP Part 4.4). Where your corrective actions result in changes to any of the controls or procedures documented in your SWPPP, the SWPPP must be modified accordingly within 14 calendar days of completing corrective action work.

These time intervals are not grace periods, but are schedules considered reasonable for documenting your findings and for making repairs and improvements. They are included in this permit to ensure that the conditions prompting the need for these repairs and improvements do not persist indefinitely.

6.3 Corrective Action Documentation

Within 14 days of discovery of the identified condition, corrective action(s) to eliminate or further investigate the condition or documentation that no corrective actions is needed will be documented by the Deployed Environmental Professional or Stormwater PPT member in the ENV-RCRA MSGP CAR database. This is required to track the status of all issues and in a report (the MSGP Annual Report) will be generated and submitted to EPA as part of the Annual Site Compliance Evaluation Reporting from ENV-CP. Copies of the Annual Comprehensive Site inspection reports are kept in separate binders with the SWPPP.

For spills or leaks, additional notifications will be made to ENV-CP and an unplanned Release report (e.g., Spill Report). Spill Report(s) will summarize response actions, the date/time clean-up completed, notifications made, and staff involved will be documented on a Spill Report which includes measures taken to prevent the reoccurrence of such releases. The certifying official should be restricted to ENV-CP On-Call staff, DESHS Deployed Manager and Environmental Professionals, Project managers and for subcontractors, managers with environmental compliance responsibilities.

If EPA was notified regarding an extension of the 45 day timeframe in Section 6.2, a rationale for an extension must be documented.

SECTION 7: SWPPP CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name:	Robert Cleveland Stokes (Bob)	Title:	DESHS-EWMO: ESH Manager
Signature:	/S/ Robert C. Stokes	Date:	2-3-2016

SECTION 8: SWPPP MODIFICATIONS

The SWPPP will be modified by the PPT and reviewed by the ENV-CP Project Lead, whenever necessary, to address any of the triggering conditions for corrective actions listed in Section 6 of this SWPPP to ensure that they do not reoccur; or to reflect changes implemented when a review following the triggering conditions listed in Section 6 of this SWPPP indicates that changes to control measures are necessary to meet the effluent limits described in this SWPPP. Changes to this SWPPP document must be made in accordance with the corrective action deadlines defined in Section 6 and must be signed and dated in accordance with the signatory requirements listed in Appendix B Subsection 11 (Signatory Requirements) of the 2015 MSGP. A record of amendments to the SWPPP will be tracked in the amendment log located in Appendix D of this SWPPP.

SWPPP ATTACHMENTS

Attachment A — General Location Map

Attachment B — Site Maps

Attachment C — 2015 MSGP

Attachment D — SWPPP Amendments

Attachment E — Quarterly Visual Assessments

Attachment F — Routine Facility Inspections

Attachment G — Annual Reports and Corrective Action Documentation

Attachment H — Sampling Data

Attachment I — Standard Operating and Maintenance Procedures

Attachment J — Threatened and Endangered Species Habitat Management Plan for Los Alamos National Laboratory

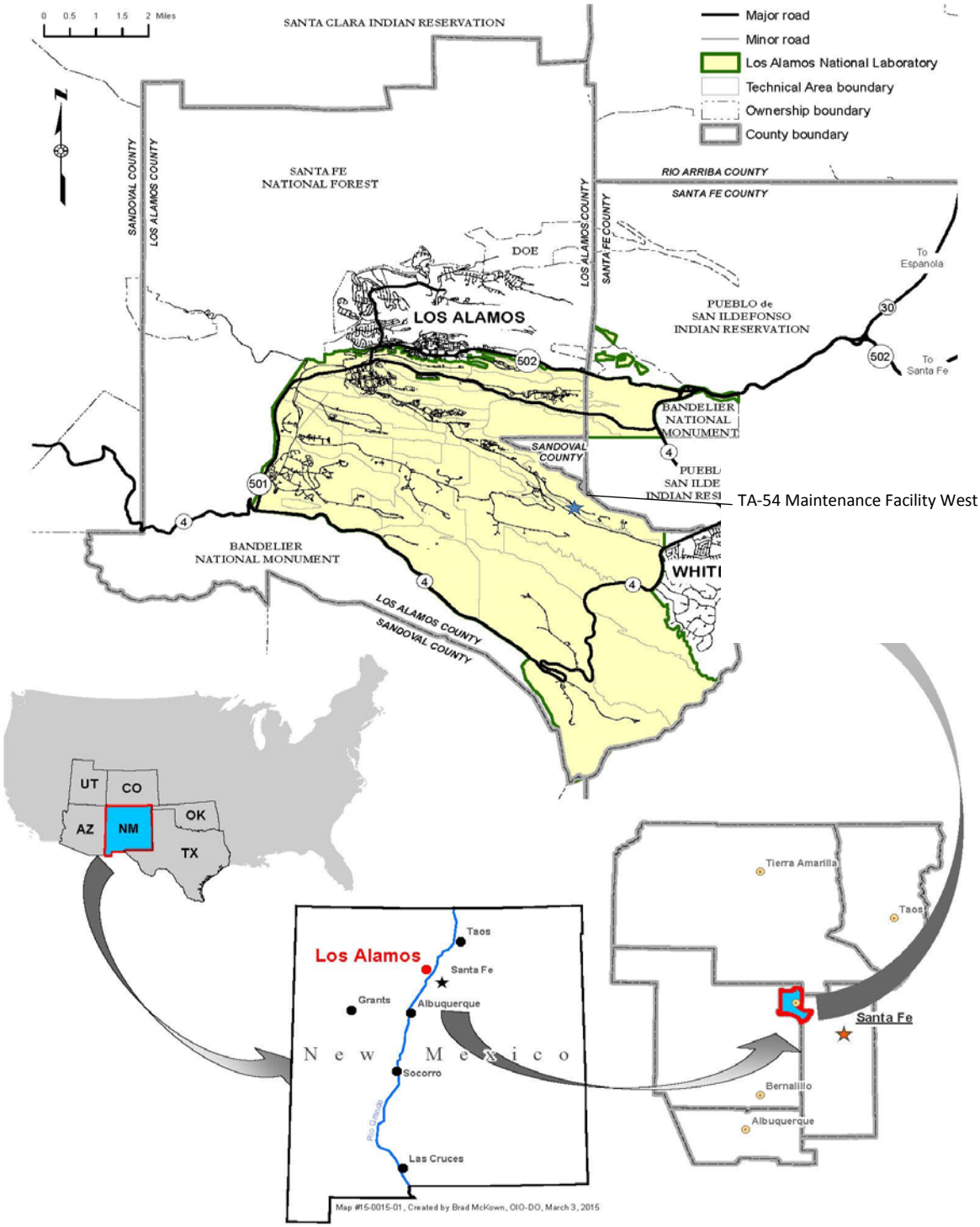
Attachment K — Concurrence_8DEC2013_Biological Assessment of Jemez Mtn Salamander Site Plan

Attachment L — Authorized Representatives for NPDES Stormwater General Permits

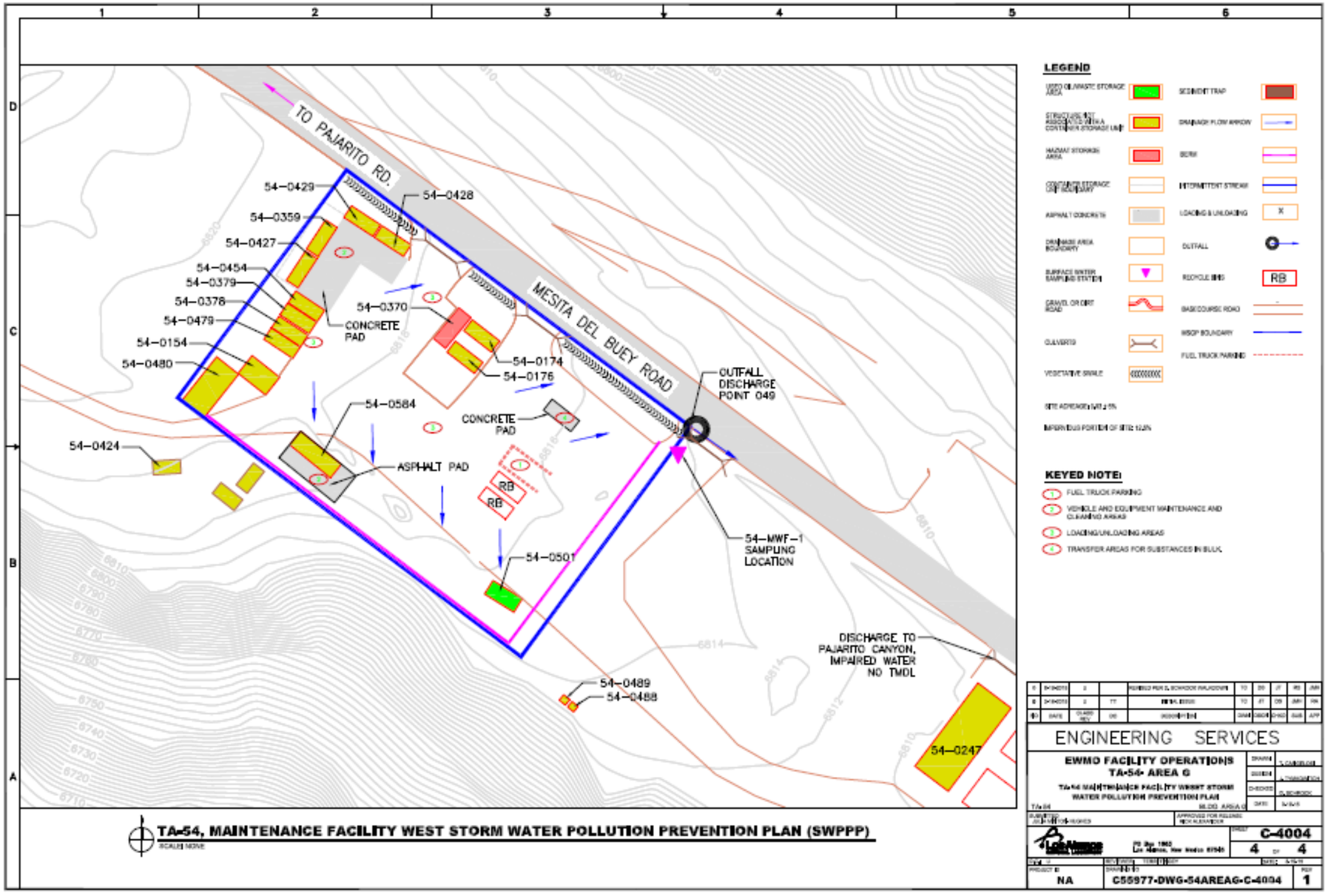
Attachment M — Environmental References/Documents

Attachment N — Training

Attachment A
General Location Map



Attachment B
Site Map



Attachment C
2015 MSGP

TA-54 Maintenance Facility West SWPPP http://eprr.lanl.gov

Parts 1-7 (general requirements)

http://water.epa.gov/polwaste/npdes/stormwater/upload/msgp2015_parts1-7.pdf

Part 8 (sector-specific requirements)

http://water.epa.gov/polwaste/npdes/stormwater/upload/msgp2015_part8.pdf

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA)
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
MULTI-SECTOR GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY (MSGP)

In compliance with the provisions of the Clean Water Act (CWA), as amended (33 U.S.C. 1251 *et seq.*), operators of stormwater discharges associated with industrial activity located in an area identified in Appendix C where EPA is the permitting authority are authorized to discharge to waters of the United States in accordance with the eligibility and Notice of Intent (NOI) requirements, effluent limitations, inspection requirements, and other conditions set forth in this permit. This permit is structured as follows:

- General requirements that apply to all facilities are found in Parts 1 through 7;
- Industry sector-specific requirements are found in Part 8; and
- Specific requirements that apply in individual states and Indian country are found in Part 9.

The Appendices (A through P) contain additional permit conditions that apply to all operators covered under this permit.

This permit becomes effective on June 4, 2015. For areas in the State of Washington (except for Indian country) subject to industrial activity by a Federal Operator, this permit becomes effective on July 21, 2015. For the State of Idaho (except for Indian country), and for industrial activities on Spokane Tribe of Indians lands, this permit becomes effective August 12, 2015.

This permit and the authorization to discharge shall expire at midnight, June 4, 2020.

Signed and issued this 4th day of June, 2015

Deborah Szaro
Acting Regional Administrator, EPA Region 1

Signed and issued this 4th day of June, 2015

José C. Font
Director, Caribbean Environmental Protection Division, EPA Region 2

Signed and issued this 4th day of June, 2015

Jon. M Capacasa
Water Protection Division, EPA Region 3

Signed and issued this 4th day of June, 2015

Tinka G. Hyde
Director, Water Division, EPA Region 5

Signed and issued this 4th day of June, 2015

William K. Honker
Director, Water Quality Protection Division, EPA Region 6

Signed and issued this 4th day of June, 2015

Karen Flournoy
Director, Water, Wetlands, and Pesticides Division, EPA Region 7

Signed and issued this 4th day of June, 2015

Darcy O'Connor
Acting Assistant Regional Administrator, EPA Region 8

Signed and issued this 4th day of June, 2015

Nancy Woo
Acting Director, Water Division, EPA Region 9

Signed and issued this 4th day of June, 21st day of July, and 12th day of August, 2015

Daniel D. Opalski
Director, Office of Water and Watersheds, EPA Region 10

NPDES MULTI-SECTOR GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY

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1. Coverage Under this Permit.

1.1 Eligibility.

1.1.1 Facilities Covered.

To be eligible to discharge under this permit, you must (1) have an allowable stormwater discharge or an allowable non-stormwater discharge associated with industrial activity from your primary industrial activity, as defined in Appendix A, provided your primary industrial activity is included in Appendix D, or (2) be notified by EPA that you are eligible for coverage under Sector AD of this permit. Your facility must also be located in an area where EPA is the permitting authority (see Appendix C).

1.1.2 Allowable Stormwater Discharges.

Unless otherwise made ineligible under Part 1.1.4, the following discharges are eligible for coverage under this permit:

1.1.2.1 Stormwater discharges associated with industrial activity for any primary industrial activities and co-located industrial activities, as defined in Appendix A, except for any stormwater discharges specifically prohibited in Part 8;

1.1.2.2 Discharges designated by EPA as needing a stormwater permit as provided in Sector AD;

1.1.2.3 Discharges that are not otherwise required to obtain NPDES permit authorization but are mixed with discharges that are authorized under this permit; and

1.1.2.4 Stormwater discharges from facilities subject to any of the national stormwater-specific effluent limitations guidelines listed in Table 1-1.

Table 1-1. Stormwater-Specific Effluent Limitations Guidelines

Regulated Discharge	40 CFR Section	MSGP Sector	New Source Performance Standard (NSPS)	New Source Date
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	Part 429, Subpart I	A	Yes	1/26/81
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	Part 418, Subpart A	C	Yes	4/8/74
Runoff from asphalt emulsion facilities	Part 443, Subpart A	D	Yes	7/28/75
Runoff from material storage piles at cement manufacturing facilities	Part 411, Subpart C	E	Yes	2/20/74
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	Part 436, Subparts B, C, and D	J	No	N/A
Runoff from hazardous waste and non-hazardous waste landfills	Part 445, Subparts A and B	K, L	Yes	2/2/00
Runoff from coal storage piles at steam electric generating facilities	Part 423	O	Yes	11/19/82 (10/8/74)[1]

1 NSPS promulgated in 1974 were not removed via the 1982 regulation; therefore wastewaters generated by Part 423-applicable sources that were New Sources under the 1974 regulations are subject to the 1974 NSPS.

Regulated Discharge	40 CFR Section	MSGP Sector	New Source Performance Standard (NSPS)	New Source Date
Runoff containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures	Part 449	S	Yes	6/15/12

1.1.3 Allowable Non-Stormwater Discharges.

Below in Part 1.1.3.1 are the only non-stormwater discharges authorized under this permit for all sectors provided that all discharges comply with the effluent limits set forth in Parts 2 and 8. In addition to the authorized non-stormwater discharges in Part 1.1.3.1 applicable to all sectors, for Sector A, there is an additional non-stormwater discharge in Part 1.1.3.2 below, and for the mining sectors (Sectors G, H, and J), there are additional authorized non-stormwater discharges in Part 1.1.3.3 below. The additional allowable non-stormwater discharges for Sectors G, H, and J apply only to discharges from earth-disturbing activities conducted prior to active mining activities as defined in Part 8.G.3.2, 8.H.3.2, and 8.J.3.2 provided that, with the exception of water used to control dust and to irrigate areas to be vegetatively stabilized, these discharges are not routed to areas of exposed soil and all discharges comply with the permit's effluent limits.

Also allowed for all sectors are discharges of stormwater listed above in Parts 1.1.2 or authorized non-stormwater discharges in Part 1.1.3, mixed with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES permit authorization. All other non-stormwater discharges requiring NPDES permit coverage except those specifically listed in Part 1.1.3 are not authorized by this permit. If non-stormwater discharges requiring NPDES permit coverage other than those specifically authorized in Part 1.1.3, including sector-specific non-stormwater discharges that are listed in Part 8 as prohibited (a non-exclusive list provided to raise awareness of contaminants or sources of contaminants characteristic of certain sectors), will be discharged, such non-stormwater discharges are not authorized by this permit and must either be eliminated or covered under another NPDES permit.

1.1.3.1 Allowable Non-Stormwater Discharges for all Sectors of Industrial Activity:

- Discharges from emergency/unplanned fire-fighting activities;
- Fire hydrant flushings;
- Potable water, including water line flushings;
- Uncontaminated condensate from air conditioners, coolers/chillers, and other compressors and from the outside storage of refrigerated gases or liquids;
- Irrigation drainage;
- Landscape watering provided all pesticides, herbicides, and fertilizers have been applied in accordance with the approved labeling;
- Pavement wash waters where no detergents or hazardous cleaning products are used (e.g., bleach, hydrofluoric acid, muriatic acid, sodium hydroxide, nonylphenols), and the wash waters do not come into contact with oil and grease deposits, sources of pollutants associated with industrial activities (see Part 5.2.3), or any other toxic or hazardous materials, unless residues are first cleaned up using dry clean-up methods (e.g., applying absorbent materials and sweeping, using hydrophobic mops/rags) and you have implemented

appropriate control measures to minimize discharges of mobilized solids and other pollutants (e.g., filtration, detention; settlement);

- Routine external building washdown / power wash water that does not use detergents or hazardous cleaning products (e.g., those containing bleach, hydrofluoric acid, muriatic acid, sodium hydroxide, nonylphenols);
- Uncontaminated ground water or spring water;
- Foundation or footing drains where flows are not contaminated with process materials; and
- Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of your facility, but not intentional discharges from the cooling tower (e.g., "piped" cooling tower blowdown; drains).

1.1.3.2 ***Additional Allowable Non-Stormwater Discharge for Sector A:*** Discharges from the spray down of lumber and wood product storage yards where no chemical additives are used in the spray-down waters and no chemicals are applied to the wood during storage (applicable only to Sector A facilities provided the non-stormwater component of the discharge is in compliance with the non-numeric effluent limits requirements in Part 2.1.2).

1.1.3.3 ***Additional Allowable Non-Stormwater Discharges for Earth-Disturbing Activities Conducted Prior to Active Mining Activities for Sectors G, H and J:***

- Water used to wash vehicles and equipment, provided that there is no discharge of soaps, solvents, or detergents used for such purposes;
- Water used to control dust; and
- Dewatering water that has been treated by an appropriate control under Parts 8.G.4.2.9, 8.H.4.2.9, or 8.J.4.2.9.

Note: These non-stormwater discharges are only authorized for earth-disturbing activities conducted prior to active mining activities, as defined in Part 8.G.3.2, 8.H.3.2, and 8.J.3.2. Once the earth-disturbing activities conducted prior to active mining activities have ceased, the only allowable non-stormwater discharges for Sectors G, H, and J are those listed in Part 1.1.3.1.

1.1.4 Limitations on Coverage.

Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under Clean Water Act (CWA) section 402(k) by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the Stormwater Pollution Prevention Plan (SWPPP), or during an inspection.

1.1.4.1 ***For Discharges Mixed with Non-Stormwater.*** Stormwater discharges that are mixed with non-stormwater discharges, other than those mixed with allowable non-stormwater discharges listed in Part 1.1.3 and/or those mixed with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES authorization, are not eligible for coverage under this permit.

1.1.4.2 ***For Stormwater Discharges Associated with Construction Activity.*** Stormwater discharges associated with construction activity disturbing one acre or more, or that are part of a larger common plan of development or sale if the larger common plan will ultimately disturb one acre or more, are not eligible for coverage

under this permit, unless in conjunction with mining activities or certain oil and gas extraction activities as specified in Sectors G, H, I, and J of this permit.

1.1.4.3 ***For Discharges Currently or Previously Covered by Another Permit.*** Unless you have received written notification from EPA specifically allowing these discharges to be covered under this permit, you are not eligible for coverage under this permit for any of the following:

- Stormwater discharges associated with industrial activity that are currently covered under an individual NPDES permit or an alternative NPDES general permit;
- Discharges covered within five years prior to the effective date of this permit by an individual permit or alternative general permit where that permit established site-specific numeric water quality-based limitations developed for the stormwater component of the discharge; or
- Discharges from facilities where any NPDES permit has been or is in the process of being denied, terminated, or revoked by EPA (this does not apply to the routine reissuance of permits every five years).

1.1.4.4 ***For Stormwater Discharges Subject to Effluent Limitations Guidelines.*** For discharges from facilities subject to stormwater effluent limitation guidelines under 40 CFR, Subchapter N, only those stormwater discharges identified in Table 1-1 are eligible for coverage under this permit.

1.1.4.5 ***Endangered and Threatened Species and Critical Habitat Protection.*** Coverage under this permit is available only if your stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities were the subject of an Endangered Species Act (ESA) consultation or an ESA section 10 permit, or if your stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities are not likely to adversely affect any species that are federally listed as endangered or threatened ("listed") and are not likely to adversely affect habitat that is designated as "critical habitat" under the ESA. You must meet one of the criteria below, following the procedures in Appendix E:

Criterion A. No federally listed threatened or endangered species or their designated critical habitat(s) are likely to occur in the "action area" as defined in Appendix A. To certify your eligibility under this criterion, you must use the *Criterion Selection Worksheet* in Part E.4 of Appendix E. You must also provide a description of the basis for the criterion you selected on your NOI form and provide documentation supporting your eligibility determination in your SWPPP.

Criterion B. Your industrial activity's discharges and discharge-related activities were already addressed in another operator's valid certification of eligibility for your action area under this permit, and there is no reason to believe that federally listed species or designated critical habitat not considered in the prior certification may be present or located in the "action area" (e.g., due to a new species listing or critical habitat designation). To certify your eligibility under this criterion, you must use the *Criterion Selection Worksheet* in Part E.4 of Appendix E. There must be no lapse of NPDES permit coverage in the other operator's certification. You must also comply with any additional measures that formed the basis of the other operator's valid certification of eligibility to ensure that your discharges and discharge-related

activities are protective of listed species and/or critical habitat. You must include in your NOI the NPDES ID (i.e., permit tracking number) assigned to the other operator's authorization under this permit, and a description of the basis for the criterion selected on your NOI form, including the eligibility criterion selected by the other operator's certification. You must also provide any documentation in your SWPPP that supports the other operator's eligibility determination, including any additional measures that formed the basis of the other operator's eligibility determination.

Criterion C. Federally listed threatened or endangered species or their designated critical habitat(s) are likely to occur in or near your facility's "action area," and your industrial activity's discharges and discharge-related activities are not likely to adversely affect listed threatened or endangered species or critical habitat. To certify your eligibility under this criterion, you must use the *Criterion Selection Worksheet* in Part E.4 of Appendix E, including completion of the *Criterion C Eligibility Form*, which you must submit to EPA at least 30 days prior to filing your NOI for permit coverage. After evaluation of your *Criterion C Eligibility Form*, EPA may require additional measures that you must implement to avoid or eliminate likely adverse effects on listed species and critical habitat from discharges and discharge-related activities. You may submit your NOI for permit coverage 30 days after submitting to EPA your completed *Criterion C worksheet*. You must also provide a description of the basis for the criterion you selected on your NOI form and provide documentation supporting your eligibility determination in your SWPPP.

Criterion D. Consultation between a Federal Agency and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded. Consultations can be either formal or informal, and would have occurred only as a result of a separate federal action (e.g., during application for an individual wastewater discharge permit or the issuance of a wetlands dredge and fill permit), and consultation must have addressed the effects of the industrial activity's discharges and discharge-related activities on federally listed threatened or endangered species and designated critical habitat. The result of this consultation must be one of the following:

i. A biological opinion that concludes that the action in question (taking into account the effects of your facility's discharges and discharge-related activities) is not likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of critical habitat;

ii. A biological opinion that concludes that the action is likely to jeopardize listed species or to result in the destruction or adverse modification of critical habitat, and any recommended reasonable and prudent alternatives or reasonable and prudent measures are being implemented; or

iii. Written concurrence from the applicable Service(s) with a finding that the facility's discharges and discharge-related activities are not likely to adversely affect listed species or critical habitat.

To certify your eligibility under this criterion, you must use the *Criterion Selection Worksheet* in Part E.4 of Appendix E. You must verify that the consultation does not warrant reinitiation under 50 CFR §402.16. If reinitiation of consultation is required, in order to be eligible under this Criterion you must ensure consultation is reinitiated and the result of the consultation must be consistent with (i), (ii), or (iii) above.

If eligible, you must also provide supporting documentation for your determination in your NOI and SWPPP, including the Biological Opinion (or PCTS tracking number) or concurrence letter.

Criterion E. Your industrial activities are the subject of a permit under section 10 of the ESA, and this authorization addresses the effects of your facility's discharges and discharge-related activities on federally listed species and designated critical habitat. To certify your eligibility under this criterion, you must use the *Criterion Selection Worksheet*. You must also provide supporting documentation for your determination in your NOI and SWPPP, including a copy of the permit from the Services.

You must comply with any measures that formed the basis of your eligibility determination in Part 1.1.4.5 to be in compliance with the permit. These measures become permit requirements per Part 2.3. Documentation of these measures must be kept as part of your SWPPP (see Part 5.2.6.1).

1.1.4.6 ***Historic Properties Preservation.*** Coverage under this permit is available only if your stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities meet one of the eligibility criteria below, following the procedures in Appendix F:

Criterion A. Your stormwater discharges and allowable non-stormwater discharges do not have the potential to have an effect on historic properties and you are not constructing or installing new stormwater control measures on your site that cause subsurface disturbance; or

Criterion B. Your discharge-related activities (i.e., construction and/or installation of stormwater control measures that involve subsurface disturbance) will not affect historic properties; or

Criterion C. Your stormwater discharges, allowable non-stormwater discharges, and discharge-related activities have the potential to have an effect on historic properties, and you have consulted with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), or other tribal representative regarding measures to mitigate or prevent any adverse effects on historic properties, and you have either (1) obtained and are in compliance with a written agreement that outlines all such measures, or (2) been unable to reach agreement on such measures; or

Criterion D. You have contacted the SHPO, THPO, or other tribal representative and EPA in writing informing them that you have the potential to have an effect on historic properties and you did not receive a response from the SHPO, THPO, or tribal representative within 30 days of receiving your letter.

If you have been unable to reach agreement with a SHPO, THPO, or other tribal representative regarding appropriate measures to mitigate or prevent adverse effects, EPA may notify you of additional measures you must implement to be eligible for coverage under this permit.

1.1.4.7 ***Eligibility for New Dischargers and New Sources: Based on Water Quality Standards.*** If you are a new discharger or a new source (as defined in Appendix A), you are ineligible for coverage under this permit if EPA determines prior to your authorization to discharge that your discharges will not meet an applicable water

quality standard (i.e., your discharges will cause or contribute to an exceedance of a water quality standard). In such case, EPA may notify you that an individual permit application is necessary per Part 1.2.3, or, alternatively, EPA may authorize your coverage under this permit after you implement additional control measures so that your discharges will meet water quality standards.

1.1.4.8 ***Eligibility for New Dischargers and New Sources to Water-Quality Impaired Waters.*** If you are a new discharger or a new source (as defined in Appendix A), you are ineligible for coverage under this permit to discharge to an "impaired water" (as defined in Appendix A) unless you do one of the following:

a. Prevent all exposure to stormwater of the pollutant(s) for which the waterbody is impaired, and retain documentation of procedures taken to prevent exposure onsite with your SWPPP;

b. Prior to submitting your NOI, provide to the appropriate EPA Regional Office technical information or other documentation to support your claim that the pollutant(s) for which the waterbody is impaired is not present at your site, and retain such documentation with your SWPPP; or

c. Prior to submitting your NOI, provide information to the appropriate EPA Regional Office, either data or other technical documentation, to support a conclusion that the discharge is expected to meet applicable water quality standards (i.e., that pollutants of concern will not be discharged at levels that will cause or contribute to an exceedance of a water quality standard), and retain such information with your SWPPP. The information to be submitted must be sufficient to demonstrate:

   i. For discharges to waters without an EPA-approved or established total maximum daily load (TMDL), that the discharge of the pollutant for which the water is impaired will meet water quality standards at the point of discharge to the waterbody; or

   ii. For discharges to waters with an applicable EPA-approved or established TMD), that there are, in accordance with 40 CFR 122.4(i), sufficient remaining wasteload allocations in the TMDL to allow your discharge and that existing dischargers to the waterbody are subject to compliance schedules designed to bring the waterbody into attainment with water quality standards (e.g., a reserve allocation for future growth).

   You are eligible under Part 1.1.4.8.c if you receive a determination from the EPA Regional Office that your discharge will meet applicable water quality standards (i.e., will not cause or contribute to an exceedance of a water quality standard), and you document the Region's determination in your SWPPP. If the EPA Regional Office fails to respond to you within 30 days after submission of data, you are considered to be eligible for coverage.

Note: For the purposes of this permit, your project is considered to discharge to an impaired water if the first water of the U.S. to which you discharge is identified by a state, tribe, or EPA as not meeting an applicable water quality standard, and:

- *Requires development of a TMDL (pursuant to section 303(d) of the CWA);*
- *Is addressed by an EPA-approved or established TMDL; or*

- *Is not in either of the above categories but the waterbody is covered by pollution control requirements that meet the requirements of 40 CFR 130.7(b)(1).*

For discharges that enter a separate storm sewer system[2] prior to discharge, the first water of the U.S. to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system.

1.1.4.9 ***Eligibility for New Dischargers and New Sources to Waters with High Water Quality.***

For new dischargers and new sources to Tier 2 or Tier 2.5 waters:

If you are a new discharger or a new source (as defined in Appendix A), you are eligible to discharge to a Tier 2 or Tier 2.5 water only if your discharge will not lower the water quality of the applicable water. See a list of Tier 2 and Tier 2.5 waters in Appendix L.

For new dischargers and new sources to Tier 3 waters:

If you are a new discharger or a new source (as defined in Appendix A), you are not eligible for coverage under this permit for discharges to waters designated by a state or tribe as Tier 3 (outstanding national resource waters) for antidegradation purposes under 40 CFR 131.13(a)(3). Instead, you must submit an application for an individual permit. See a list of Tier 3 waters in Appendix L.

Note: For the purposes of this permit, your project is considered to discharge to a Tier 2, Tier 2.5, or Tier 3 water if the first water of the U.S. to which you discharge is identified by a state, tribe, or EPA as a Tier 2, Tier 2.5, or Tier 3 water. For discharges that enter a separate storm sewer system[2] prior to discharge, the first water of the U.S. to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system.

1.1.4.10 ***For Discharges to a Federal CERCLA Site.*** If you discharge to a federal CERCLA Site listed in Appendix P, you are ineligible for coverage under this permit, unless you notify the EPA Regional Office in advance and the EPA Regional Office determines that you are eligible for permit coverage. In determining eligibility for coverage under this Part, the EPA Regional Office may evaluate whether you are implementing or plan to implement adequate controls and/or procedures to ensure that your discharge will not lead to recontamination of aquatic media at the CERCLA Site such that your discharge will cause or contribute to an exceedance of a water quality standard. If it is determined that your facility discharges to a CERCLA Site listed in Appendix P after you have obtained coverage under this permit, you must contact the EPA Regional Office and ensure that you either have implemented or will implement adequate controls and/or procedures to ensure that your discharges will not lead to recontamination of aquatic media at the CERCLA Site such that it will to cause or contribute to an exceedance of a water quality standard.

For the purposes of this permit, a permittee discharges to a federal CERCLA Site if the discharge flows directly into the site through its own conveyance, or a through

2 Separate storm systems do not include combined sewer systems or sanitary sewer systems. Separate storm systems include both municipal storm sewer systems (MS4s) and non-municipal separate storm sewers.

a conveyance owned by others, such as a municipal separate storm sewer system (MS4).

1.2 Authorization Under this Permit.

1.2.1 How to Obtain Authorization.

To obtain authorization under this permit, you must:

- Be an operator of a primary industrial activity in a sector covered by this permit (see Appendix D);
- Be located in a state, territory, or Indian country, or be a federal operator identified in Appendix C where EPA is the permitting authority;
- Meet the Part 1.1 eligibility requirements;
- Select, design, install, and implement control measures in accordance with Part 2.1 and Part 8 to meet numeric and non-numeric effluent limits;
- Develop a SWPPP per Part 5 of this permit or update your existing SWPPP consistent with Part 5 prior to submitting your NOI for coverage under this permit; and
- Submit a complete and accurate NOI in accordance with this Part.

1.2.1.1 ***Submitting Your NOI.*** To be covered under this permit, you must submit to EPA a complete and accurate NOI by the deadline applicable to your facility presented in Table 1-2. The NOI certifies to EPA that you are eligible for coverage according to Part 1.1, and provides information on your industrial activities and related discharges.

You must complete the development of a SWPPP or update your existing SWPPP consistent with Part 5 prior to submitting your NOI for coverage under this permit. If you choose to post your SWPPP on the Internet per Part 5.4.1, you must include the URL on your NOI form and this URL must directly link to the SWPPP (not just the corporate or facility homepage). If you do not post your SWPPP online, you must enter additional facility information from your SWPPP, per Part 5.4.2.

1.2.1.2 ***How to Submit Your NOI.*** You must submit your NOI electronically per Part 7.1, unless you have received a waiver from electronic reporting per Part 7.1, in which case you may use the paper NOI form in Appendix G.

1.2.1.3 ***Deadlines for Submitting Your NOI and Your Official Date of Permit Coverage.*** Table 1-2 provides the deadlines for submitting your NOI and your official start date of permit coverage.

Table 1-2. NOI Submittal Deadlines and Discharge Authorization Dates

Category	NOI Submission Deadline	Discharge Authorization Date[1, 2]
Operators of industrial activities that were authorized for coverage under the 2008 MSGP.	No later than September 2, 2015 unless EPA notifies you that your deadline is extended.[3]	30 days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization has been denied or delayed. *Note: You must review and update your SWPPP to ensure that this permit's requirements are addressed prior to submitting your NOI.* Provided you submit your NOI in accordance with the deadline, your authorization under the 2008 MSGP is automatically continued until you have been granted coverage under this permit or an alternative permit, or coverage is otherwise terminated.
Operators of industrial activities that commenced discharging between September 30, 2013 and September 2, 2015 and have been operating consistent with EPA's no action assurance for the NPDES Stormwater Multi-Sector General Permit for Industrial Activities.	As soon as possible, but no later than September 2, 2015, unless EPA notifies you that your deadline is extended.[4]	30 days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization has been denied or delayed.
Operators of industrial activities that commence discharging after September 2, 2015, or operators seeking coverage for discharges previously covered under an individual permit or an alternative general permit.	A minimum of 30 days prior to commencing discharge in accordance with the terms of the 2015 MSGP.[5]	30 days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization has been denied or delayed.
New operators of existing industrial activities with discharges previously authorized under the 2015 MSGP.	A minimum of 30 days prior to the date of transfer of control to the new operator.	30 days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization has been denied or delayed.
Other eligible operators – Operators of industrial activities that commenced discharging prior to September 2, 2015, but not covered under the 2008 MSGP or another NPDES permit and not operating consistent with EPA's no action assurance for the NPDES Stormwater Multi-Sector General Permit for Industrial Activities.	Immediately, to minimize the time discharges from the facility will continue to be unauthorized.	30 days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization has been denied or delayed.

[1] If you have missed the deadline to submit your NOI, any and all discharges from your industrial activities will continue to be unauthorized under the CWA until they are covered by this or a different NPDES permit. EPA may take enforcement action for any unpermitted discharges that occur between the commencement of discharging and discharge authorization.

[2] Discharges are not authorized if your NOI is incomplete or inaccurate or if you are ineligible for permit coverage.

[3] For federal operators of industrial activities located in the State of Washington (except Indian country) that were authorized for coverage under the 2008 MSGP, you must submit your NOI no later than October 19, 2015, unless EPA notifies you that your deadline is extended. For operators of industrial activities located in the State of Idaho (except Indian country) or on Spokane Tribe of Indians lands that were authorized for coverage under the 2008 MSGP, you must submit your NOI no later than November 10, 2015, unless EPA notifies you that your deadline is extended.

[4] For federal operators of industrial activities located in the State of Washington (except Indian country) that commence discharging between September 30, 2013 and October 19, 2015, you must submit your NOI as soon as possible, but no later than October 19, 2015, unless EPA notifies you that your deadline is extended. For operators of industrial activities located in the State of Idaho (except Indian country) or on Spokane Tribe of Indians lands that commence discharging between September 30, 2013 and November 10, 2015, you must submit your NOI as soon as possible, but no later than November 10, 2015, unless EPA notifies you that your deadline is extended.

[5] For federal operators of industrial activities located in the State of Washington (except Indian country) that commence discharging after October 19, 2015, or operators seeking coverage for discharges previously covered under an individual permit or an alternative general permit, you must submit your NOI a minimum of 30 days prior to commencing discharge in accordance with the terms of the 2015 MSGP. For operators of industrial activities located in the State of Idaho (except Indian country) or on Spokane Tribe of Indians lands that commence discharging after November 10, 2015, or operators seeking coverage for discharges previously covered under an individual permit or an alternative general permit, you must submit your NOI a minimum of 30 days prior to commencing discharge in accordance with the terms of the 2015 MSGP.

1.2.2 Continuation of Coverage for Existing Permittees After the Permit Expires.

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedure Act and 40 CFR 122.6 and remain in force and effect for discharges that were covered prior to expiration. If you obtain authorization to discharge under this permit prior to the expiration date and this permit is administratively continued, any discharges authorized under this permit will automatically remain covered by this permit after its expiration date until the earliest of:

- Your authorization for coverage under a reissued permit or a replacement version of this permit following your timely submittal of a complete and accurate NOI for coverage under the new permit; or

Note: If you fail to submit a timely NOI for coverage under the reissued or replacement permit, your coverage will terminate on the date that the NOI was due.

- Your submittal of a Notice of Termination (NOT); or
- Issuance of an individual permit for the facility's discharges; or
- A formal permit decision by EPA not to reissue this general permit, at which time EPA will identify a reasonable time period for covered dischargers to seek coverage under an alternative general permit or an individual permit. Coverage under this permit will cease at the end of this time period.

EPA reserves the right to modify or revoke and reissue this permit under 40 CFR 122.62 and 63, in which case you will be notified of any relevant changes or procedures to which you may be subject.

1.2.3 Coverage Under Alternative Permits.

EPA may require you to apply for and/or obtain authorization to discharge under an alternative permit, i.e., either an individual NPDES permit or an alternative NPDES general permit, in accordance with 40 CFR 122.64 and 124.5. If EPA requires you to apply for an alternative permit, the Agency will notify you in writing that a permit application or NOI is required. This notification will include a brief statement of the reasons for this decision and will contain alternative permit application or NOI requirements, including deadlines for completing your application or NOI.

1.2.3.1 ***Denial of Coverage for New or Previously Unpermitted Facilities.*** For new or previously unpermitted facilities, following the submittal of your NOI, you may be denied coverage under the 2015 MSGP and must apply for and/or obtain authorization to discharge under an alternative permit, per Part 1.2.3.

1.2.3.2 ***Loss of Authorization Under the 2015 MSGP for Existing Permitted Facilities.*** If your stormwater discharges are covered under this permit, you may receive a written notification that you must either apply for coverage under an individual NPDES permit or submit an NOI for coverage under an alternative general NPDES permit, per Part 1.2.3. In addition to the reasons for the decision and alternative permit application or NOI deadlines, the notice will include a statement that on the effective date of your alternative permit coverage, your coverage under the 2015 MSGP will terminate. EPA may grant additional time to submit the application or NOI if you request it. If you fail to submit an alternative permit application or NOI as required by EPA, then your authorization to discharge under the 2015 MSGP is terminated at the end of the day EPA required you to submit your alternative

permit application or NOI. EPA may take appropriate enforcement action for any unpermitted discharge.

1.2.3.3 ***Operator Requesting Coverage Under an Alternative Permit.*** You may request to be covered under an individual permit. In such a case, you must submit an individual permit application in accordance with the requirements of 40 CFR 122.28(b)(3)(iii), with reasons supporting the request, to the applicable EPA Regional Office listed in Part 7.9.1 of this permit. The request may be granted by issuance of an individual permit if your reasons are adequate to support the request. When you are authorized to discharge under an alternative permit, your authorization to discharge under the 2015 MSGP is terminated on the effective date of the alternative permit.

1.3 Terminating Coverage.

1.3.1 Submitting a Notice of Termination (NOT).

To terminate permit coverage, you must submit a complete and accurate NOT. Your authorization to discharge under this permit terminates at midnight of the day that you are notified that your complete NOT has been processed. If you submit a NOT without meeting one or more of the conditions identified in Part 1.3.3, then your NOT is not valid. You are responsible for meeting the terms of this permit until your authorization is terminated.

1.3.2 How to Submit Your NOT.

You must submit your NOT electronically per Part 7.2, unless you have received a waiver from electronic reporting per Part 7.1, in which case you may use the paper form in Appendix H.

1.3.3 When to Submit Your NOT.

You must submit a NOT within 30 days after one or more of the following conditions have been met:

- A new owner or operator has taken over responsibility for the facility; or
- You have ceased operations at the facility, there are not or no longer will be discharges of stormwater associated with industrial activity from the facility, and you have already implemented necessary sediment and erosion controls per Part 2.1.2.5; or
- You are a Sector G, H, or J facility and you have met the applicable termination requirements; or
- You obtained coverage under an individual or alternative general permit for all discharges required to be covered by an NPDES permit.

1.4 Conditional Exclusion for No Exposure.

If you are covered by this permit, and become eligible for a "no exposure" exclusion from permitting under 40 CFR 122.26(g), you may file a No Exposure Certification. You are no longer required to have a permit upon submission of a complete and accurate No Exposure Certification to EPA. If you are no longer required to have permit coverage because of a no exposure exclusion and have submitted a No Exposure Certification form to EPA, you are not required to submit a NOT. You must submit a No Exposure Certification form to EPA once every five years.

You must submit your No Exposure Certification electronically per Part 7.2, unless you have received a waiver from electronic reporting per Part 7.1, in which case you may use the paper form in Appendix K.

1.5 Permit Compliance.

Any noncompliance with any of the requirements of this permit constitutes a violation of this permit, and thus is a violation of the CWA. As detailed in Part 4 (Corrective Actions) of this permit, failure to take any required corrective actions constitutes an independent, additional violation of this permit, in addition to any original violation that triggered the need for corrective action. As such, any actions and time periods specified for remedying noncompliance do not absolve parties of the initial underlying noncompliance.

Where corrective action is triggered by an event that does not itself constitute permit noncompliance, such as an exceedance of an applicable benchmark, there is no permit violation provided you take the required corrective action within the relevant deadlines established in Part 4.3.

1.6 Severability.

Invalidation of a portion of this permit does not necessarily render the whole permit invalid. EPA's intent is that the permit is to remain in effect to the extent possible; in the event that any part of this permit is invalidated, EPA will advise the regulated community as to the effect of such invalidation.

2. Control Measures and Effluent Limits.

In the technology-based limits included in Parts 2.1 and 8, the term "minimize" means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practice. The term "infeasible" means not technologically possible or not economically practicable and achievable in light of best industry practices. EPA notes that it does not intend for any permit requirement to conflict with state water rights law.

2.1 Control Measures.

You must select, design, install, and implement control measures (including best management practices) to minimize pollutant discharges that address the selection and design considerations in Part 2.1.1, meet the non-numeric effluent limits in Part 2.1.2, meet limits contained in applicable effluent limitations guidelines in Part 2.1.3, and meet the water quality-based effluent limitations in Part 2.2. The selection, design, installation, and implementation of these control measures must be in accordance with good engineering practices and manufacturer's specifications. Note that you may deviate from such manufacturer's specifications where you provide justification for such deviation and include documentation of your rationale in the part of your SWPPP that describes your control measures, consistent with Part 5.2.4. If you find that your control measures are not achieving their intended effect of minimizing pollutant discharges to meet applicable water quality standards or any of the other non-numeric effluent limits in this permit, you must modify these control measures per the corrective action requirements in Part 4. Regulated stormwater discharges from your facility include stormwater run-on that commingles with stormwater discharges associated with industrial activity at your facility.

Effluent limit requirements in Part 2.1.2 that do not involve the site-specific selection of a control measure or are specific activity requirements (e.g., "Cleaning catch basins when the depth of debris reaches two-thirds (2/3) of the sump depth and keeping the debris surface at least six inches below the lowest outlet pipe") are marked with an asterisk (*). When documenting in your SWPPP, per Part 5, how you will comply with the requirements marked with an asterisk, you have the option of including additional information or you may just "cut-and-paste" those effluent limits verbatim into your SWPPP without providing additional documentation (see Part 5.2.4).

2.1.1 Control Measure Selection and Design Considerations.

You must consider the following when selecting and designing control measures:

- Preventing stormwater from coming into contact with polluting materials is generally more effective, and less costly, than trying to remove pollutants from stormwater;
- Using control measures in combination may be more effective than using control measures in isolation for minimizing pollutants in your stormwater discharge;
- Assessing the type and quantity of pollutants, including their potential to impact receiving water quality, is critical to designing effective control measures that will achieve the limits in this permit;
- Minimizing impervious areas at your facility and infiltrating runoff onsite (including bioretention cells, green roofs, and pervious pavement, among other approaches) can reduce runoff and improve ground water recharge and

stream base flows in local streams, although care must be taken to avoid ground water contamination;

- Attenuating flow using open vegetated swales and natural depressions can reduce in-stream impacts of erosive flows;
- Conserving and/or restoring riparian buffers will help protect streams from stormwater runoff and improve water quality; and
- Using treatment interceptors (e.g., swirl separators and sand filters) may be appropriate in some instances to minimize the discharge of pollutants.

2.1.2 Non-Numeric Technology-Based Effluent Limits (BPT/BAT/BCT).

You must comply with the following non-numeric effluent limits (except where otherwise specified in Part 8) as well as any sector-specific non-numeric effluent limits in Part 8:

2.1.2.1 ***Minimize Exposure.*** You must minimize the exposure of manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and runoff in order to minimize pollutant discharges by either locating these industrial materials and activities inside or protecting them with storm resistant coverings. Unless infeasible, you must also:

- Use grading, berming or curbing to prevent runoff of contaminated flows and divert run-on away from these areas;
- Locate materials, equipment, and activities so that potential leaks and spills are contained or able to be contained or diverted before discharge;
- Clean up spills and leaks promptly using dry methods (e.g., absorbents) to prevent the discharge of pollutants;
- Store leaky vehicles and equipment indoors or, if stored outdoors, use drip pans and absorbents;
- Use spill/overflow protection equipment;
- Perform all vehicle and/or equipment cleaning operations indoors, under cover, or in bermed areas that prevent runoff and run-on and also that capture any overspray; and
- Drain fluids from equipment and vehicles that will be decommissioned, and, for any equipment and vehicles that will remain unused for extended periods of time, inspect at least monthly for leaks.

Note: Industrial materials do not need to be enclosed or covered if stormwater runoff from affected areas does not discharge pollutants to receiving waters or if discharges are authorized under another NPDES permit.

2.1.2.2 ***Good Housekeeping.*** You must keep clean all exposed areas that are potential sources of pollutants. You must perform good housekeeping measures in order to minimize pollutant discharges, including but not limited to, the following:

- Sweep or vacuum at regular intervals or, alternatively, wash down the area and collect and/or treat, and properly dispose of the washdown water;
- Store materials in appropriate containers;

- Keep all dumpster lids closed when not in use. For dumpsters and roll off boxes that do not have lids and could leak, ensure that discharges have a control (e.g., secondary containment, treatment). Consistent with Part 1.1.3 above, this permit does not authorize dry weather discharges from dumpsters or roll off boxes;*
- Minimize the potential for waste, garbage and floatable debris to be discharged by keeping exposed areas free of such materials, or by intercepting them before they are discharged.

Plastic Materials Requirements: Facilities that handle pre-production plastic must implement best management practices to eliminate discharges of plastic in stormwater. Examples of plastic material required to be addressed as stormwater pollutants include plastic resin pellets, powders, flakes, additives, regrind, scrap, waste and recycling.

2.1.2.3 ***Maintenance.*** You must maintain all control measures that are used to achieve the effluent limits in this permit in effective operating condition, as well as all industrial equipment and systems, in order to minimize pollutant discharges. This includes:

- Performing inspections and preventive maintenance of stormwater drainage, source controls, treatment systems, and plant equipment and systems that could fail and result in contamination of stormwater.
- Diligently maintaining non-structural control measures (e.g., keep spill response supplies available, personnel appropriately trained).
- Inspecting and maintaining baghouses at least quarterly to prevent the escape of dust from the system and immediately removing any accumulated dust at the base of the exterior baghouse.*
- Cleaning catch basins when the depth of debris reaches two-thirds (2/3) of the sump depth and keeping the debris surface at least six inches below the lowest outlet pipe.*

If you find that your control measures are in need of routine maintenance, you must conduct the necessary maintenance immediately in order to minimize pollutant discharges. If you find that your control measures need to be repaired or replaced, you must immediately take all reasonable steps to prevent or minimize the discharge of pollutants until the final repair or replacement is implemented, including cleaning up any contaminated surfaces so that the material will not be discharged during subsequent storm events. Final repairs/replacement of stormwater controls should be completed as soon as feasible but must be no later than the timeframe established in Part 4.3 for corrective actions, i.e., within 14 days or, if that is infeasible, within 45 days. If the completion of stormwater control repairs/replacement will exceed the 45 day timeframe, you may take the minimum additional time necessary to complete the maintenance, provided that you notify the EPA Regional Office of your intention to exceed 45 days, and document in your SWPPP your rationale for your modified maintenance timeframe. If a control measure was never installed, was installed incorrectly or not in accordance with Parts 2 and/or 8, or is not being properly operated or maintained, you must conduct corrective action as specified in Part 4.

Note: In this context, the term "immediately" requires you to, on the same day you identify that a control measure needs to be maintained, take all reasonable steps

to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational. However, if a problem is identified at a time in the work day when it is too late to take action, the initiation of action must begin no later than the following work day. "All reasonable steps" means that the permittee has undertaken initial actions to assess and address the condition causing the corrective action, including, for example, cleaning up any exposed materials that may be discharged in a storm event (e.g., through sweeping, vacuuming) or making arrangements (i.e., scheduling) for a new best management practice (BMP) to be installed at a later date. "All reasonable steps" for purposes of complying with Part 4.2 Conditions Requiring SWPPP Review to Determine if Modifications Are Necessary, when you conclude a corrective action is, in fact, not necessary, could include documenting why a corrective action is unnecessary.

2.1.2.4 ***Spill Prevention and Response.*** You must minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur in order to minimize pollutant discharges. You must conduct spill prevention and response measures, including but not limited to, the following:

- Plainly label containers (e.g., "Used Oil," "Spent Solvents," "Fertilizers and Pesticides") that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;*
- Implement procedures for material storage and handling, including the use of secondary containment and barriers between material storage and traffic areas, or a similarly effective means designed to prevent the discharge of pollutants from these areas;
- Develop training on the procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. As appropriate, execute such procedures as soon as possible;
- Keep spill kits on-site, located near areas where spills may occur or where a rapid response can be made; and
- Notify appropriate facility personnel when a leak, spill, or other release occurs.

Where a leak, spill or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302, occurs during a 24-hour period, you must notify the National Response Center (NRC) at (800) 424-8802 or, in the Washington, DC, metropolitan area, call (202) 267-2675 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 as soon as you have knowledge of the discharge. State or local requirements may necessitate reporting spills or discharges to local emergency response, public health, or drinking water supply agencies. Contact information must be in locations that are readily accessible and available.

2.1.2.5 ***Erosion and Sediment Controls.*** You must minimize erosion by stabilizing exposed soils at your facility in order to minimize pollutant discharges and placing flow velocity dissipation devices at discharge locations to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points. You must also use structural and non-structural control measures to minimize the discharge of sediment. If you use polymers and/or other chemical treatments as part of your controls, you must identify the polymers and/or chemicals used and

the purpose in your SWPPP. There are many resources available to help you select appropriate BMPs for erosion and sediment control, including EPA's Stormwater Discharges from Construction Activities website at: http://water.epa.gov/polwaste/npdes/stormwater/EPA-Construction-General-Permit.cfm.

2.1.2.6 ***Management of Runoff.*** You must divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff to minimize pollutants in your discharges. In selecting, designing, installing, and implementing appropriate control measures, you are encouraged to consult with EPA's Internet-based resources relating to runoff management, including the sector-specific *Industrial Stormwater Fact Sheet Series*, (http://water.epa.gov/polwaste/npdes/stormwater/EPA-Multi-Sector-General-Permit-MSGP.cfm), *National Menu of Stormwater BMPs* (http://water.epa.gov/polwaste/npdes/swbmp/index.cfm), and *National Management Measures to Control Nonpoint Source Pollution from Urban Areas* (http://water.epa.gov/polwaste/nps/urban/), and any similar state or tribal resources.

2.1.2.7 ***Salt Storage Piles or Piles Containing Salt.*** You must enclose or cover storage piles of salt, or piles containing salt, used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces, in order to minimize pollutant discharges. You must implement appropriate measures (e.g., good housekeeping, diversions, containment) to minimize exposure resulting from adding to or removing materials from the pile. Piles do not need to be enclosed or covered pursuant to this permit if stormwater runoff from the piles is not discharged or if discharges from the piles are authorized under another NPDES permit.

2.1.2.8 ***Employee Training.*** You must train all employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel), including all members of your stormwater pollution prevention team. You must ensure the following personnel understand the requirements of this permit and their specific responsibilities with respect to those requirements:

- Personnel who are responsible for the design, installation, maintenance, and/or repair of controls (including pollution prevention measures);
- Personnel responsible for the storage and handling of chemicals and materials that could become contaminants in stormwater discharges;
- Personnel who are responsible for conducting and documenting monitoring and inspections as required in Parts 3 and 6; and
- Personnel who are responsible for taking and documenting corrective actions as required in Part 4.

Personnel must be trained in at least the following if related to the scope of their job duties (e.g., only personnel responsible for conducting inspections need to understand how to conduct inspections):

- An overview of what is in the SWPPP;
- Spill response procedures, good housekeeping, maintenance requirements, and material management practices;

- The location of all controls on the site required by this permit, and how they are to be maintained;
- The proper procedures to follow with respect to the permit's pollution prevention requirements; and
- When and how to conduct inspections, record applicable findings, and take corrective actions.

2.1.2.9 ***Non-Stormwater Discharges.*** You must evaluate for the presence of non-stormwater discharges. Any non-stormwater discharges not explicitly authorized in Part 1.1.3 or covered by another NPDES permit must be eliminated. This includes vehicle and equipment/tank wash water (except for those authorized in Part 1.1.3.3 for Sectors G, H, and J). If not covered under a separate NPDES permit, wastewater, wash water and any other unauthorized non-stormwater must be discharged to a sanitary sewer in accordance with applicable industrial pretreatment requirements, or otherwise disposed of appropriately.

2.1.2.10 ***Dust Generation and Vehicle Tracking of Industrial Materials.*** You must minimize generation of dust and off-site tracking of raw, final, or waste materials in order to minimize pollutant discharges.

2.1.3 Numeric Effluent Limitations Based on Effluent Limitations Guidelines.

If you are in an industrial category subject to one of the effluent limitations guidelines identified in Table 6-1 (see Part 6.2.2.1), you must meet the effluent limits referenced in Table 2-1 below:

Table 2-1. Applicable Effluent Limitations Guidelines

Regulated Activity	40 CFR Part/Subpart	Effluent Limit
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	Part 429, Subpart I	See Part 8.A.7
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	Part 418, Subpart A	See Part 8.C.4
Runoff from asphalt emulsion facilities	Part 443, Subpart A	See Part 8.D.4
Runoff from material storage piles at cement manufacturing facilities	Part 411, Subpart C	See Part 8.E.5
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	Part 436, Subparts B, C, or D	See Part 8.J.9
Runoff from hazardous waste landfills	Part 445, Subpart A	See Part 8.K.6
Runoff from non-hazardous waste landfills	Part 445, Subpart B	See Part 8.L.10
Runoff from coal storage piles at steam electric generating facilities	Part 423	See Part 8.O.8
Runoff containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures	Part 449	See Part 8.S.8

2.2 Water Quality-Based Effluent Limitations.

2.2.1 Water Quality Standards.

Your discharge must be controlled as necessary to meet applicable water quality standards of all affected states (i.e., your discharge must not cause or contribute to an exceedance of applicable water quality standards in any affected state).

EPA expects that compliance with the conditions in this permit will control discharges as necessary to meet applicable water quality standards. If at any time you become aware, or EPA determines, that your discharge does not meet applicable water quality standards, you must take corrective action(s) as required in Part 4.1 and document the corrective actions as required in Part 4.4. You must also comply with any additional requirements that your state or tribe requires in Part 9.

EPA may also require that you undertake additional control measures (to meet the narrative water quality-based effluent limit above) on a site-specific basis, or require you to obtain coverage under an individual permit, if information in your NOI, required reports, or from other sources indicates that your discharges are not controlled as necessary to meet applicable water quality standards. You must implement all measures necessary to be consistent with an available wasteload allocation in an EPA-established or approved TMDL.

2.2.2 Discharges to Water Quality-Impaired Waters.

You are considered to discharge to an impaired water if the first water of the U.S. to which you discharge is identified by a state, tribe or EPA as not meeting an applicable water quality standard, and:

- Requires development of a TMDL (pursuant to section 303(d) of the CWA);
- Is addressed by an EPA-approved or established TMDL; or
- Is not in either of the above categories but the waterbody is covered by a pollution control program that meets the requirements of 40 CFR 130.7(b)(1).

Note: For discharges that enter a separate storm sewer system[3] prior to discharge, the first water of the U.S. to which you discharge is the waterbody that receives the water from the storm sewer system.

2.2.2.1 ***Existing Discharge to an Impaired Water with an EPA-Approved or Established TMDL.*** If you discharge to an impaired water with an EPA-approved or established TMDL, EPA will inform you whether any additional measures are necessary for your discharge to be consistent with the assumptions and requirements of the applicable TMDL and its wasteload allocation, or if coverage under an individual permit is necessary per Part 1.2.3.

2.2.2.2 ***Existing Discharger to an Impaired Water without an EPA-Approved or Established TMDL.*** If you discharge to an impaired water without an EPA-approved or established TMDL, you are still required to comply with Part 2.2.1, and you must comply with the monitoring requirements of Part 6.2.4.1. Note that the impaired waters monitoring requirements of Part 6.2.4.1 also apply where EPA determines that your discharge is not controlled as necessary to meet applicable water quality

3 Separate storm systems do not include combined sewer systems or sanitary sewer systems. Separate storm systems include both municipal storm sewer systems (MS4s) and non-municipal separate storm sewers.

standards in an impaired downstream water segment, even if your discharge is to a receiving water that is not identified as impaired according to Part 2.2.2.

2.2.2.3 ***New Discharger or New Source to an Impaired Water.*** If your authorization to discharge under this permit relied on Part 1.1.4.8 for a new discharger or a new source to an impaired water, you must implement and maintain any measures that enabled you to become eligible under Part 1.1.4.8, and modify such measures as necessary pursuant to any Part 4 corrective actions. You also must comply with Part 2.2.1 and the monitoring requirements of Parts 6.2.4.1.

2.2.3 Tier 2 Antidegradation Requirements for New Dischargers, New Sources, or Increased Discharges.

If you are a new discharger or a new source (as defined in Appendix A), or an existing discharger required to notify EPA of an increased discharge consistent with Part 7.7 (i.e., a "planned changes" report), and you discharge directly to waters designated by a state or tribe as Tier 2 or Tier 2.5 for antidegradation purposes under 40 CFR 131.12(a), EPA may require that you undertake additional control measures as necessary to ensure compliance with the applicable antidegradation requirements, or notify you that an individual permit application is necessary in accordance with Part 1.2.3. See list of Tier 2 and 2.5 waters in Appendix L.

2.3 Requirements Relating to Endangered Species, Historic Properties, and Federal CERCLA Sites.

If your eligibility under either Part 1.1.4.5, Part 1.1.4.6, and/or Part 1.1.4.10 was made possible through your, or another operator's, agreement to undertake additional measures, you must comply with all such measures to maintain eligibility under the MSGP.

Note that if at any time you become aware, or EPA determines, that your discharges and/or discharge-related activities have the potential to adversely affect listed species and/or critical habitat, EPA may inform you of the need to implement additional measures on a site-specific basis to meet the effluent limits in this permit, or require you to obtain coverage under an individual permit.

3. Inspections.

3.1 Routine Facility Inspections.

During normal facility operating hours you must conduct inspections of areas of the facility covered by the requirements in this permit, including, but not limited to, the following:

- Areas where industrial materials or activities are exposed to stormwater;
- Areas identified in the SWPPP and those that are potential pollutant sources (see Part 5.2.3);
- Areas where spills and leaks have occurred in the past three years;
- Discharge points; and
- Control measures used to comply with the effluent limits contained in this permit.

Inspections must be conducted at least quarterly (i.e., once each calendar quarter), or in some instances more frequently (e.g., monthly). Increased frequency may be appropriate for some types of equipment, processes and stormwater control measures, or areas of the facility with significant activities and materials exposed to stormwater. At least once each calendar year, the routine inspection must be conducted during a period when a stormwater discharge is occurring.

Inspections must be performed by qualified personnel (as defined in Appendix A) with at least one member of your stormwater pollution prevention team participating. Inspectors must consider the results of visual and analytical monitoring (if any) for the past year when planning and conducting inspections.

During the inspection you must examine or look out for the following:

- Industrial materials, residue or trash that may have or could come into contact with stormwater;
- Leaks or spills from industrial equipment, drums, tanks and other containers;
- Offsite tracking of industrial or waste materials, or sediment where vehicles enter or exit the site;
- Tracking or blowing of raw, final or waste materials from areas of no exposure to exposed areas;
- Control measures needing replacement, maintenance or repair.

During an inspection occurring during a stormwater event or discharge, control measures implemented to comply with effluent limits must be observed to ensure they are functioning correctly. Discharge points, as defined in Appendix A, must also be observed during this inspection. If such discharge locations are inaccessible, nearby downstream locations must be inspected.

3.1.1 Exceptions to Routine Facility Inspections for Inactive and Unstaffed Sites.

The requirement to conduct facility inspections on a routine basis does not apply at a facility that is inactive and unstaffed, as long as there are no industrial materials or activities exposed to stormwater. Such a facility is only required to conduct an annual site inspection in accordance with Part 3.1. To invoke this exception, you must indicate that your facility is inactive and unstaffed on your NOI. If you are already covered under the permit and your

facility has changed from active to inactive and unstaffed, you must modify and re-certify your NOI. You must also include a statement in your SWPPP per Part 5.2.5.2 indicating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to stormwater, in accordance with the substantive requirements in 40 CFR 122.26(g)(4)(iii). The statement must be signed and certified in accordance with Appendix B, Subsection 11. If circumstances change and industrial materials or activities become exposed to stormwater or your facility becomes active and/or staffed, this exception no longer applies and you must immediately resume routine facility inspections. If you are not qualified for this exception at the time you become authorized under this permit, but during the permit term you become qualified because your facility becomes inactive and unstaffed, and there are no industrial materials or activities that are exposed to stormwater, you must include the same signed and certified statement as above and retain it with your records pursuant to Part 5.5.

Inactive and unstaffed facilities covered under Sectors G (Metal Mining), H (Coal Mines and Coal Mining-Related Facilities), and J (Non-Metallic Mineral Mining and Dressing) are not required to meet the "no industrial materials or activities exposed to stormwater" standard to be eligible for this exception from routine inspections, per Parts 8.G.8.4, 8.H.8.1, and 8.J.8.1.

3.1.2 Routine Facility Inspection Documentation.

You must document the findings of your facility inspections and maintain this report with your SWPPP as required in Part 5.5. Do not submit your routine facility inspection report to EPA, unless specifically requested to do so. However, you must summarize your findings in the annual report per Part 7.5. Document all findings, including but not limited to, the following information:

- The inspection date and time;
- The name(s) and signature(s) of the inspector(s);
- Weather information;
- All observations relating to the implementation of control measures at the facility, including:
  - A description of any discharges occurring at the time of the inspection;
  - Any previously unidentified discharges from and/or pollutants at the site;
  - Any evidence of, or the potential for, pollutants entering the drainage system;
  - Observations regarding the physical condition of and around all outfalls, including any flow dissipation devices, and evidence of pollutants in discharges and/or the receiving water;
  - Any control measures needing maintenance, repairs, or replacement;
- Any additional control measures needed to comply with the permit requirements;
- Any incidents of noncompliance; and
- A statement, signed and certified in accordance with Appendix B, Subsection 11.

Any corrective action required as a result of a routine facility inspection must be performed consistent with Part 4 of this permit.

If you performed a discharge visual assessment required in Part 3.2 during your facility inspection, you may include the results of the assessment with the report required in Part 3.1.2, as long as all components of both types of inspections are included in the report.

3.2 Quarterly Visual Assessment of Stormwater Discharges.

3.2.1 Quarterly Visual Assessment Procedures.

Once each quarter for the entire permit term, you must collect a stormwater sample from each outfall (except as noted in Part 3.2.3) and conduct a visual assessment of each of these samples. These samples are not required to be collected consistent with 40 CFR Part 136 procedures but must be collected in such a manner that the samples are representative of the stormwater discharge. Guidance on monitoring is available at http://water.epa.gov/polwaste/npdes/stormwater/EPA-Multi-Sector-General-Permit-MSGP.cfm.

The visual assessment must be made:

- Of a sample in a clean, colorless glass or plastic container, and examined in a well-lit area;
- On samples collected within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample must be collected as soon as practicable after the first 30 minutes and you must document why it was not possible to take the sample within the first 30 minutes. In the case of snowmelt, samples must be taken during a period with a measurable discharge from your site; and
- For storm events, on discharges that occur at least 72 hours (three days) from the previous discharge. The 72-hour (three-day) storm interval does not apply if you document that less than a 72-hour (three-day) interval is representative for local storm events during the sampling period.

You must visually inspect or observe the sample for the following water quality characteristics:

- Color;
- Odor;
- Clarity (diminished);
- Floating solids;
- Settled solids;
- Suspended solids;
- Foam;
- Oil sheen; and
- Other obvious indicators of stormwater pollution.

Whenever the visual assessment shows evidence of stormwater pollution, you must initiate the corrective action procedures in Part 4.

3.2.2 Quarterly Visual Assessment Documentation.

You must document the results of your visual assessments and maintain this documentation onsite with your SWPPP as required in Part 5.5. You are not required to submit

your visual assessment findings to EPA, unless specifically requested to do so. However, you must summarize your findings in the annual report per Part 7.5. Your documentation of the visual assessment must include, but not be limited to:

- Sample location(s);
- Sample collection date and time, and visual assessment date and time for each sample;
- Personnel collecting the sample and performing visual assessment, and their signatures;
- Nature of the discharge (i.e., runoff or snowmelt);
- Results of observations of the stormwater discharge;
- Probable sources of any observed stormwater contamination;
- If applicable, why it was not possible to take samples within the first 30 minutes; and
- A statement, signed and certified in accordance with Appendix B, Subsection 11.

Any corrective action required as a result of a quarterly visual assessment must be performed consistent with Part 4 of this permit.

3.2.3 Exceptions to Quarterly Visual Assessments.

Adverse Weather Conditions: When adverse weather conditions prevent the collection of samples during the quarter, you must take a substitute sample during the next qualifying storm event. Documentation of the rationale for no visual assessment for the quarter must be included with your SWPPP records as described in Part 5.5. Adverse conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, electrical storms, or situations that otherwise make sampling impractical, such as extended frozen conditions.

Climates with Irregular Stormwater Runoff: If your facility is located in an area where limited rainfall occurs during many parts of the year (e.g., arid or semi-arid climate) or in an area where freezing conditions exist that prevent runoff from occurring for extended periods, then your samples for the quarterly visual assessments may be distributed during seasons when precipitation runoff occurs.

Areas Subject to Snow: In areas subject to snow, at least one quarterly visual assessment must capture snowmelt discharge, as described in Part 6.1.3, taking into account the exception described above for climates with irregular stormwater runoff.

Inactive and Unstaffed Sites: The requirement for a quarterly visual assessment does not apply at a facility that is inactive and unstaffed, as long as there are no industrial materials or activities exposed to stormwater. To invoke this exception, you must maintain a statement in your SWPPP per Part 5.2.5.2 indicating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to precipitation, in accordance with the substantive requirements in 40 CFR 122.26(g)(4)(iii). The statement must be signed and certified in accordance with Appendix B, Subsection 11. If circumstances change and industrial materials or activities become exposed to stormwater or your facility becomes active and/or staffed, this exception no longer applies and you must immediately resume quarterly visual assessments. If you are not qualified for this exception at the time you are authorized under this

permit, but during the permit term you become qualified because your facility becomes inactive and unstaffed, and there are no industrial materials or activities that are exposed to stormwater, then you must include the same signed and certified statement as above and retain it with your records pursuant to Part 5.5.

Inactive and unstaffed facilities covered under Sectors G (Metal Mining), H (Coal Mines and Coal Mining-Related Facilities), and J (Non-Metallic Mineral Mining and Dressing), are not required to meet the "no industrial materials or activities exposed to stormwater" standard to be eligible for this exception from quarterly visual assessments, consistent with the requirements established in Parts 8.G.8.4, 8.H.8.1, and 8.J.8.1.

Substantially Identical Outfalls: If your facility has two or more outfalls that discharge substantially identical effluents, as documented in Part 5.2.5.3, you may conduct quarterly visual assessments of the discharge at just one of the outfalls and report that the results also apply to the substantially identical outfall(s) provided that you perform visual assessments on a rotating basis of each substantially identical outfall throughout the period of your coverage under this permit.

If stormwater contamination is identified through visual assessment performed at a substantially identical outfall, you must assess and modify your control measures as appropriate for each outfall represented by the monitored outfall.

4. Corrective Actions.

4.1 Conditions Requiring SWPPP Review and Revision to Ensure Effluent Limits are Met.

When any of the following conditions occur or are detected during an inspection, monitoring or other means, or EPA or the operator of the MS4 through which you discharge informs you that any of the following conditions have occurred, you must review and revise, as appropriate, your SWPPP (e.g., sources of pollution; spill and leak procedures; non-stormwater discharges; the selection, design, installation and implementation of your control measures) so that this permit's effluent limits are met and pollutant discharges are minimized:

- An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this or another NPDES permit to a water of the U.S.) occurs at your facility.
- A discharge violates a numeric effluent limit listed in Table 2-1 and in your Part 8 sector-specific requirements.
- Your control measures are not stringent enough for the discharge to meet applicable water quality standards or the non-numeric effluent limits in this permit.
- A required control measure was never installed, was installed incorrectly, or not in accordance with Parts 2 and/or 8, or is not being properly operated or maintained.
- Whenever a visual assessment shows evidence of stormwater pollution (e.g., color, odor, floating solids, settled solids, suspended solids, foam).

4.2 Conditions Requiring SWPPP Review to Determine if Modifications Are Necessary.

If any of the following conditions occur, you must review your SWPPP (e.g., sources of pollution, spill and leak procedures, non-stormwater discharges, selection, design, installation and implementation of your control measures) to determine if modifications are necessary to meet the effluent limits in this permit:

- Construction or a change in design, operation, or maintenance at your facility that significantly changes the nature of pollutants discharged in stormwater from your facility, or significantly increases the quantity of pollutants discharged.
- The average of four quarterly sampling results exceeds an applicable benchmark (see Part 6.2.1.2). If less than four benchmark samples have been taken, but the results are such that an exceedance of the four quarter average is mathematically certain (i.e., if the sum of quarterly sample results to date is more than four times the benchmark level) this is considered a benchmark exceedance, triggering this review.

Note: A benchmark exceedance does not trigger a corrective action if you determine that the exceedance is solely attributable to natural background sources, or if you make a finding that no further pollutant reductions are technologically available and economically practicable and achievable in light of best industry practice (see Part 6.2.1.2).

Note: When run-on to your facility causes a benchmark exceedance, in addition to reviewing and revising, as appropriate, your SWPPP, you should notify the other operators contributing run-on to your discharges to abate their pollutant contribution. Where the other operators fail to take action to address the stormwater run-on, you should contact your EPA Regional Office.

4.3 Corrective Actions and Deadlines.

4.3.1 Immediate Actions.

If corrective action is needed, you must immediately take all reasonable steps necessary to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events.

Note: In this context, the term "immediately" requires you to, on the same day a condition requiring corrective action is found, take all reasonable steps to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational. However, if a problem is identified at a time in the work day when it is too late to initiate corrective action, the initiation of corrective action must begin no later than the following work day. "All reasonable steps" means that the permittee has undertaken initial actions to assess and address the condition causing the corrective action, including, for example, cleaning up any exposed materials that may be discharged in a storm event (e.g., through sweeping, vacuuming) or making arrangements (i.e., scheduling) for a new BMP to be installed at a later date. "All reasonable steps" for purposes of complying with Part 4.2 Conditions Requiring SWPPP Review to Determine if Modifications Are Necessary, when you conclude a corrective action is, in fact, not necessary, could include documenting why a corrective action is unnecessary.

4.3.2 Subsequent Actions.

If you determine that additional actions are necessary beyond those implemented pursuant to Part 4.3.1, you must complete the corrective actions (e.g., install a new or modified control and make it operational, complete the repair) before the next storm event if possible, and within 14 calendar days from the time of discovery of the corrective action condition. If it is infeasible to complete the corrective action within 14 calendar days, you must document why it is infeasible to complete the corrective action within the 14-day timeframe. You must also identify your schedule for completing the work, which must be done as soon as practicable after the 14-day timeframe but no longer than 45 days after discovery. If the completion of corrective action will exceed the 45 day timeframe, you may take the minimum additional time necessary to complete the corrective action, provided that you notify the EPA Regional Office of your intention to exceed 45 days, your rationale for an extension, and a completion date, which you must also include in your corrective action documentation (see Part 4.4). Where your corrective actions result in changes to any of the controls or procedures documented in your SWPPP, you must modify your SWPPP accordingly within 14 calendar days of completing corrective action work.

These time intervals are not grace periods, but are schedules considered reasonable for documenting your findings and for making repairs and improvements. They are included in this permit to ensure that the conditions prompting the need for these repairs and improvements do not persist indefinitely.

4.4 Corrective Action Documentation.

You must document the existence of any of the conditions listed in Parts 4.1 or 4.2 within 24 hours of becoming aware of such condition. You are not required to submit your corrective action documentation to EPA, unless specifically requested to do so. However, you must summarize your findings in the annual report per Part 7.5. Include the following information in your documentation:

- Description of the condition triggering the need for corrective action review. For any spills or leaks, include the following information: a description of the

incident including material, date/time, amount, location, and reason for spill, and any leaks, spills or other releases that resulted in discharges of pollutants to waters of U.S., through stormwater or otherwise;

- Date the condition was identified;
- Description of immediate actions taken pursuant to Part 4.3.1 to minimize or prevent the discharge of pollutants. For any spills or leaks, include response actions, the date/time clean-up completed, notifications made, and staff involved. Also include any measures taken to prevent the reoccurrence of such releases (see Part 2.1.2.4); and
- A statement, signed and certified in accordance with Appendix B, Subsection 11.

You must also document the corrective actions taken or to be taken as a result of the conditions listed in Part 4.1 or 4.2 (or, for triggering events in Part 4.2 where you determine that corrective action is not necessary, the basis for this determination) within 14 days from the time of discovery of any of those conditions. Provide the dates when each corrective action was initiated and completed (or is expected to be completed). If applicable, document why it is infeasible to complete the necessary installations or repairs within the 14-day timeframe and document your schedule for installing the controls and making them operational as soon as practicable after the 14-day timeframe. If you notified EPA regarding an extension of the 45 day timeframe, you must document your rationale for an extension.

4.5 Effect of Corrective Action.

If the event triggering the review is a permit violation (e.g., non-compliance with an effluent limit), correcting it does not remove the original violation. Additionally, failing to take corrective action in accordance with this section is an additional permit violation. EPA will consider the appropriateness and promptness of corrective action in determining enforcement responses to permit violations.

4.6 Substantially Identical Outfalls.

If the event triggering corrective action is associated with an outfall that had been identified as a "substantially identical outfall" (see Parts 3.2.3 and 6.1.1), your review must assess the need for corrective action for all related substantially identical outfalls. Any necessary changes to control measures that affect these other outfalls must also be made before the next storm event if possible, or as soon as practicable following that storm event. Any corrective actions must be conducted within the timeframes set forth in Part 4.3.

5. Stormwater Pollution Prevention Plan (SWPPP).

You must prepare a SWPPP for your facility before submitting your NOI for permit coverage. If you prepared a SWPPP for coverage under a previous version of this NPDES permit, you must review and update the SWPPP to implement all provisions of this permit prior to submitting your NOI. The SWPPP does not contain effluent limitations; such limitations are contained in Parts 2, 8, and 9 of the permit. The SWPPP is intended to document the selection, design, and installation of control measures to meet the permit's effluent limits. As distinct from the SWPPP, the additional documentation requirements (see Part 5.5) are intended to document the implementation (including inspection, maintenance, monitoring, and corrective action) of the permit requirements.

Note: Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the SWPPP, during an inspection, etc.

5.1 Person(s) Responsible for SWPPP Preparation.

The SWPPP shall be prepared in accordance with good engineering practices and to industry standards. The SWPPP may be developed by either a person on your staff or a third party you hire, but it must be developed by a "qualified person" and must be certified per the signature requirements in Part 5.2.7. If EPA concludes that the SWPPP is not in compliance with Part 5.2 of this permit, EPA may require the SWPPP to be reviewed, amended as necessary, and certified by a Professional Engineer, or for Sector G, H or J, by a Professional Geologist, with the education and experience necessary to prepare an adequate SWPPP.

Note: A "qualified person" is a person knowledgeable in the principles and practices of industrial stormwater controls and pollution prevention, and possesses the education and ability to assess conditions at the industrial facility that could impact stormwater quality, and the education and ability to assess the effectiveness of stormwater controls selected and installed to meet the requirements of the permit.

5.2 Contents of Your SWPPP.

For coverage under this permit, your SWPPP must contain all of the following elements:

- Stormwater pollution prevention team (see Part 5.2.1);
- Site description (see Part 5.2.2);
- Summary of potential pollutant sources (see Part 5.2.3);
- Description of control measures (see Part 5.2.4);
- Schedules and procedures (see Part 5.2.5);
- Documentation to support eligibility considerations under other federal laws (see Part 5.2.6); and
- Signature requirements (see Part 5.2.7).

Where your SWPPP refers to procedures in other facility documents, such as a Spill Prevention, Control and Countermeasure (SPCC) Plan or an Environmental Management System (EMS), copies of the relevant portions of those documents must be kept with your SWPPP.

5.2.1 Stormwater Pollution Prevention Team.

You must identify the staff members (by name or title) that comprise the facility's stormwater pollution prevention team as well as their individual responsibilities. Your stormwater pollution prevention team is responsible for overseeing development of the SWPPP, any modifications to it, and for implementing and maintaining control measures and taking corrective actions when required. Each member of the stormwater pollution prevention team must have ready access to either an electronic or paper copy of applicable portions of this permit, the most updated copy of your SWPPP, and other relevant documents or information that must be kept with the SWPPP.

5.2.2 Site Description.

Your SWPPP must include the following:

- *Activities at the Facility*. Provide a description of the nature of the industrial activities at your facility.
- *General location map*. Provide a general location map (e.g., U.S. Geological Survey (USGS) quadrangle map) with enough detail to identify the location of your facility and all receiving waters for your stormwater discharges.
- *Site map*. Provide a map showing:
  - Boundaries of the property and the size of the property in acres;
  - Location and extent of significant structures and impervious surfaces;
  - Directions of stormwater flow (use arrows);
  - Locations of all stormwater control measures;
  - Locations of all receiving waters, including wetlands, in the immediate vicinity of your facility. Indicate which waterbodies are listed as impaired and which are identified by your state, tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 waters;
  - Locations of all stormwater conveyances including ditches, pipes, and swales;
  - Locations of potential pollutant sources identified under Part 5.2.3.2;
  - Locations where significant spills or leaks identified under Part 5.2.3.3 have occurred;
  - Locations of all stormwater monitoring points;
  - Locations of stormwater inlets and outfalls, with a unique identification code for each outfall (e.g., Outfall 001, 002), indicating if you are treating one or more outfalls as "substantially identical" under Parts 3.2.3, 5.2.5.3, and 6.1.1, and an approximate outline of the areas draining to each outfall;
  - If applicable, MS4s and where your stormwater discharges to them;
  - Areas of designated critical habitat for endangered or threatened species, if applicable.
  - Locations of the following activities where such activities are exposed to precipitation:
    - fueling stations;
    - vehicle and equipment maintenance and/or cleaning areas;
    - loading/unloading areas;
    - locations used for the treatment, storage, or disposal of wastes;
    - liquid storage tanks;

- processing and storage areas;
- immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility;
- transfer areas for substances in bulk;
- machinery;
- locations and sources of run-on to your site from adjacent property that contains significant quantities of pollutants.

5.2.3 Summary of Potential Pollutant Sources.

You must describe areas at your facility where industrial materials or activities are exposed to stormwater or from which allowable non-stormwater discharges originate. Industrial materials or activities include, but are not limited to: material handling equipment or activities; industrial machinery; raw materials; industrial production and processes; and intermediate products, by-products, final products, and waste products. Material handling activities include, but are not limited to: the storage, loading and unloading, transportation, disposal, or conveyance of any raw material, intermediate product, final product or waste product. For structures located in areas of industrial activity, you must be aware that the structures themselves are potential sources of pollutants. This could occur, for example, when metals such as aluminum or copper are leached from the structures as a result of acid rain.

For each area identified, the description must include:

5.2.3.1 ***Activities in the Area.*** A list of the industrial activities exposed to stormwater (e.g., material storage; equipment fueling, maintenance, and cleaning; cutting steel beams).

5.2.3.2 ***Pollutants.*** A list of the pollutant(s) or pollutant constituents (e.g., crankcase oil, zinc, sulfuric acid, cleaning solvents) associated with each identified activity, which could be exposed to rainfall or snowmelt and could be discharged from your facility. The pollutant list must include all significant materials that have been handled, treated, stored or disposed, and that have been exposed to stormwater in the three years prior to the date you prepare or amend your SWPPP.

5.2.3.3 ***Spills and Leaks.*** You must document where potential spills and leaks could occur that could contribute pollutants to stormwater discharges, and the corresponding outfall(s) that would be affected by such spills and leaks. You must document all significant spills and leaks of oil or toxic or hazardous substances that actually occurred at exposed areas, or that drained to a stormwater conveyance, in the three years prior to the date you prepare or amend your SWPPP.

Note: Significant spills and leaks include, but are not limited to, releases of oil or hazardous substances in excess of quantities that are reportable under CWA section 311 (see 40 CFR 110.6 and 40 CFR 117.21) or section 102 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 USC §9602. This permit does not relieve you of the reporting requirements of 40 CFR 110, 40 CFR 117, and 40 CFR 302 relating to spills or other releases of oils or hazardous substances.

5.2.3.4 ***Unauthorized Non-Stormwater Discharges.*** You must document that you have evaluated for the presence of unauthorized non-stormwater discharges (see Part

1.1.3 for the exclusive list of authorized non-stormwater discharges under this permit).

Documentation of your evaluation must include:

- The date of the evaluation;
- A description of the evaluation criteria used;
- A list of the outfalls or onsite drainage points that were directly observed during the evaluation; and
- The action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), or documentation that a separate NPDES permit was obtained. For example, a floor drain was sealed, a sink drain was re-routed to sanitary, or an NPDES permit application was submitted for an unauthorized cooling water discharge.

5.2.3.5 ***Salt Storage.*** You must document the location of any storage piles containing salt used for deicing or other commercial or industrial purposes.

5.2.3.6 ***Sampling Data.*** Existing dischargers must summarize all stormwater discharge sampling data collected at the facility during the previous permit term. The summary shall include a narrative description (and may include data tables/figures) that adequately summarizes the collected sampling data to support identification of potential pollution sources at your facility. New dischargers and new sources must provide a summary of any available stormwater runoff data they may have.

5.2.4 Description of Control Measures to Meet Technology-Based and Water Quality-Based Effluent Limits.

You must document the location and type of control measures you have specifically chosen and/or designed to comply with:

- Non-numeric technology-based effluent limits in Part 2.1.2;
- Applicable numeric effluent limitations guidelines-based limits in Part 2.1.3 and Part 8;
- Water quality-based effluent limits in Part 2.2;
- Any additional measures that formed the basis of eligibility regarding threatened and endangered species, historic properties, and/or federal CERCLA Site requirements in Part 2.3;
- Applicable effluent limits in Parts 8 and 9.
- Regarding your control measures, you must also document, as appropriate:
  - How you addressed the selection and design considerations in Part 2.1.1;
  - How they address the pollutant sources identified in Part 5.2.3.

Effluent limit requirements in Part 2.1.2 that do not involve the site-specific selection of a control measure or are specific activity requirements (e.g., "cleaning catch basins when the depth of debris reaches two-thirds (2/3) of the sump depth and keeping the debris surface at least six inches below the lowest outlet pipe") are marked with an asterisk (*). For the requirements marked with an asterisk, you may include extra information, or you may just "cut-

and-paste" these effluent limits verbatim into your SWPPP without providing additional documentation.

5.2.5 Schedules and Procedures.

5.2.5.1 ***Pertaining to Control Measures Used to Comply with the Effluent Limits in Part 2.*** The following must be documented in your SWPPP:

- Good Housekeeping (See Part 2.1.2.2) – A schedule or the convention used for determining when pickup and disposal of waste materials occurs. Also provide a schedule for routine inspections for leaks and conditions of drums, tanks and containers.
- Maintenance (See Part 2.1.2.3) – Preventative maintenance procedures, including regular inspections, testing, maintenance and repair of all control measures to avoid situations that may result in leaks, spills, and other releases, and any back-up practices in place should a runoff event occur while a control measure is off-line. The SWPPP shall include the schedule or frequency for maintaining all control measures used to comply with the effluent limits in Part 2;
- Spill Prevention and Response Procedures (See Part 2.1.2.4) – Procedures for preventing and responding to spills and leaks, including notification procedures. For preventing spills, include in your SWPPP the control measures for material handling and storage, and the procedures for preventing spills that can contaminate stormwater. Also specify cleanup equipment, procedures and spill logs, as appropriate, in the event of spills. You may reference the existence of other plans for Spill Prevention Control and Countermeasure (SPCC) developed for the facility under section 311 of the CWA or BMP programs otherwise required by an NPDES permit for the facility, provided that you keep a copy of that other plan onsite and make it available for review consistent with Part 5.4;
- Erosion and Sediment Controls (Part 2.1.2.5) – If you use polymers and/or other chemical treatments as part of your controls, you must identify the polymers and/or chemicals used and the purpose;
- Employee Training (Part 2.1.2.8) – The elements of your employee training plan shall include all, but not be limited to, the requirements set forth in Part 2.1.2.8, and also the following:
  - The content of the training;
  - The frequency/schedule of training for employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit;
  - A log of the dates on which specific employees received training.

5.2.5.2 ***Pertaining to Inspections and Assessments.*** You must document in your SWPPP your procedures for performing, as appropriate, the types of inspections specified by this permit, including:

- Routine facility inspections (see Part 3.1) and;
- Quarterly visual assessment of stormwater discharges (see Part 3.2).

For each type of inspection performed, your SWPPP must identify:

- Person(s) or positions of person(s) responsible for inspection;

- Schedules for conducting inspections, including tentative schedule for facilities in climates with irregular stormwater runoff discharges (see Part 3.2.3);
- Specific items to be covered by the inspection, including schedules for specific outfalls.

If you are invoking the exception for inactive and unstaffed sites relating to routine facility inspections and quarterly visual assessments, you must include in your SWPPP the information to support this claim as required by Parts 3.1.1 and 3.2.3.

5.2.5.3 ***Pertaining to Monitoring.*** You must document in your SWPPP procedures for conducting the five types of analytical monitoring specified by this permit, where applicable to your facility, including:

- Benchmark monitoring (see Part 6.2.1);
- Effluent limitations guidelines monitoring (see Part 6.2.2);
- State- or tribal-specific monitoring (see Part 6.2.3);
- Impaired waters monitoring (see Part 6.2.4);
- Other monitoring as required by EPA (see Part 6.2.5).

For each type of monitoring, your SWPPP must document:

- Locations where samples are collected, including any determination that two or more outfalls are substantially identical;
- Parameters for sampling and the frequency of sampling for each parameter;
- Schedules for monitoring at your facility, including schedule for alternate monitoring periods for climates with irregular stormwater runoff (see Part 6.1.6);
- Any numeric control values (benchmarks, effluent limitations guidelines, TMDL-related requirements, or other requirements) applicable to discharges from each outfall;
- Procedures (e.g., responsible staff, logistics, laboratory to be used) for gathering storm event data, as specified in Part 6.1.

If you are invoking the exception for inactive and unstaffed sites for benchmark monitoring or impaired waters monitoring, you must include in your SWPPP the information to support this claim as required by Part 6.2.1.3 and 6.2.4.2.

You must document the following in your SWPPP if you plan to use the substantially identical outfall exception for your quarterly visual assessment requirements in Part 3.2.3 or your benchmark or impaired waters monitoring requirements in Parts 6.2.1 and 6.2.4.1 (see also Part 6.1.1):

- Location of each of the substantially identical outfalls;
- Description of the general industrial activities conducted in the drainage area of each outfall;
- Description of the control measures implemented in the drainage area of each outfall;

- Description of the exposed materials located in the drainage area of each outfall that are likely to be significant contributors of pollutants to stormwater discharges;
- An estimate of the runoff coefficient of the drainage areas (low = under 40%; medium = 40 to 65%; high = above 65%);
- Why the outfalls are expected to discharge substantially identical effluents.

5.2.6 Documentation to Support Eligibility Considerations Under Other Federal Laws.

5.2.6.1 Documentation Regarding Endangered and Threatened Species and Critical Habitat Protection. You must keep with your SWPPP the documentation supporting your determination with regard to Part 1.1.4.5 (Endangered and Threatened Species and Critical Habitat Protection).

5.2.6.2 Documentation Regarding Historic Properties. You must keep with your SWPPP the documentation supporting your determination with regard to Part 1.1.4.6 (Historic Properties Preservation).

5.2.7 Signature Requirements. You must sign and date your SWPPP in accordance with Appendix B, Subsection 11.

5.3 Required SWPPP Modifications.

You must modify your SWPPP based on the corrective actions and deadlines required under Part 4.3 and that you documented under Part 4.4. SWPPP modifications must be signed and dated in accordance with Appendix B, Subsection 11.

5.4 SWPPP Availability.

You must retain a complete copy of your current SWPPP required by this permit at the facility in any accessible format. A complete SWPPP includes any documents incorporated by reference and all documentation supporting your permit eligibility pursuant to Part 1.1 of this permit, as well as your signed and dated certification page. Regardless of the format, the SWPPP must be immediately available to facility employees, EPA, a state or tribe, the operator of an MS4 into which you discharge, and representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) at the time of an onsite inspection. Your current SWPPP or certain information from your current SWPPP described below must also be made available to the public (except any confidential business information (CBI) or restricted information [as defined in Appendix A]), but you must clearly identify those portions of the SWPPP that are being withheld from public access; to do so, you must comply with one of the following two options:

5.4.1 SWPPP Posting on the Internet.

If you provide a URL in your NOI where your SWPPP can be found, and maintain your current SWPPP at this URL, you will have complied with the public availability requirements for the SWPPP. To remain current, you must post any SWPPP modifications, records and other reporting elements required for the previous year at the same URL as the main body of the SWPPP. The SWPPP update shall be no later than 45 days after conducting the final routine facility inspection for the year required in Part 3.1. If you did not provide a SWPPP URL in your NOI, you may reopen your NOI at any time subsequent to your original NOI submittal to add a URL where your current SWPPP can be found. You are not required to post any CBI or restricted information (as defined in Appendix A) (such information may be redacted), but you must clearly identify those portions of the SWPPP that are being withheld from public access. CBI may not be withheld from those staff cleared for CBI review within EPA, USFWS or NMFS.

5.4.2 SWPPP Information Provided on NOI Form.

If you did not provide a SWPPP URL in your NOI, your NOI must include the information required by Part 7.3. Irrespective of this requirement, EPA may provide access to portions of your SWPPP to a member of the public upon request (except any CBI or restricted information (as defined in Appendix A)). To remain current, you must report any modifications to the SWPPP information required by Part 7.3 through submittal of an "Change NOI" form. The SWPPP update shall be no later than 45 days after conducting the final routine facility inspection for the year required in Part 3.1.

5.5 Additional Documentation Requirements.

You are required to keep the following inspection, monitoring, and certification records with your SWPPP that together keep your records complete and up-to-date, and demonstrate your full compliance with the conditions of this permit:

- A copy of the NOI submitted to EPA along with any correspondence exchanged between you and EPA specific to coverage under this permit;
- A copy of the acknowledgment you receive from the EPA assigning your NPDES ID;
- A copy of this permit (an electronic copy easily available to SWPPP personnel is also acceptable);
- Documentation of maintenance and repairs of control measures, including the date(s) of regular maintenance, date(s) of discovery of areas in need of repair/replacement, and for repairs, date(s) that the control measure(s) returned to full function, and the justification for any extended maintenance/repair schedules (see Part 2.1.2.3);
- All inspection reports, including the Routine Facility Inspection Reports (see Part 3.1.2) and Quarterly Visual Assessment Reports (see Part 3.2.2);
- Description of any deviations from the schedule for visual assessments and/or monitoring, and the reason for the deviations (e.g., adverse weather or it was impracticable to collect samples within the first 30 minutes of a measurable storm event) (see Parts 3.2.3 and 6.1.5);
- Corrective action documentation required per Part 4.4;
- Documentation of any benchmark exceedances and the type of response to the exceedance you employed, including:
  - the corrective action taken;
  - a finding that the exceedance was due to natural background pollutant levels;
  - a determination from EPA that benchmark monitoring can be discontinued because the exceedance was due to run-on; or
  - a finding that no further pollutant reductions were technologically available and economically practicable and achievable in light of best industry practice consistent with Part 6.2.1.2.
- Documentation to support any determination that pollutants of concern are not expected to be present above natural background levels if you discharge directly to impaired waters, and that such pollutants were not detected in your discharge or were solely attributable to natural background sources (see Part 6.2.4.1); and

- Documentation to support your claim that your facility has changed its status from active to inactive and unstaffed with respect to the requirements to conduct routine facility inspections (see Part 3.1.1), quarterly visual assessments (see Part 3.2.3), benchmark monitoring (see Part 6.2.1.3), and/or impaired waters monitoring (see Part 6.2.4.2).

6. Monitoring.

You must collect and analyze stormwater samples and document monitoring activities consistent with the procedures described in Part 6 and Appendix B, Subsections 10 – 12, and any additional sector-specific or state/tribal-specific requirements in Parts 8 and 9, respectively. Refer to Part 7 for reporting and recordkeeping requirements.

6.1 Monitoring Procedures.

6.1.1 Monitored Outfalls.

Applicable monitoring requirements apply to each outfall authorized by this permit, except as otherwise exempt from monitoring as a "substantially identical outfall." If your facility has two or more outfalls that you believe discharge substantially identical effluents, based on the similarities of the general industrial activities and control measures, exposed materials that may significantly contribute pollutants to stormwater, and runoff coefficients of their drainage areas, you may monitor the effluent of just one of the outfalls and report that the results also apply to the substantially identical outfall(s). As required in Part 5.2.5.3, your SWPPP must identify each outfall authorized by this permit and describe the rationale for any substantially identical outfall determinations. The allowance for monitoring only one of the substantially identical outfalls is not applicable to any outfalls with numeric effluent limitations. You are required to monitor each outfall covered by a numeric effluent limit as identified in Part 6.2.2.

6.1.2 Commingled Discharges.

If discharges authorized by this permit commingle with discharges not authorized under this permit, any required sampling of the authorized discharges must be performed at a point before they mix with other waste streams, to the extent practicable.

6.1.3 Measurable Storm Events.

All required monitoring must be performed on a storm event that results in an actual discharge from your site ("measurable storm event") that follows the preceding measurable storm event by at least 72 hours (three days). The 72-hour (3-day) storm interval does not apply if you are able to document that less than a 72-hour (3-day) interval is representative for local storm events during the sampling period. In the case of snowmelt, the monitoring must be performed at a time when a measurable discharge occurs at your site.

For each monitoring event, except snowmelt monitoring, you must identify the date and duration (in hours) of the rainfall event, rainfall total (in inches) for that rainfall event, and time (in days) since the previous measurable storm event. For snowmelt monitoring, you must identify the date of the sampling event.

6.1.4 Sample Type.

You must take a minimum of one grab sample from a discharge resulting from a measurable storm event as described in Part 6.1.3. Samples must be collected within the first 30 minutes of a discharge associated with a measurable storm event. If it is not possible to collect the sample within the first 30 minutes of a measurable storm event, the sample must be collected as soon as practicable after the first 30 minutes and documentation must be kept with the SWPPP explaining why it was not possible to take samples within the first 30 minutes. In the case of snowmelt, samples must be taken during a period with a measurable discharge.

6.1.5 Adverse Weather Conditions.

When adverse weather conditions as described in Part 3.2.3 prevent the collection of samples according to the relevant monitoring schedule, you must take a substitute sample

during the next qualifying storm event. Adverse weather does not exempt you from having to file a benchmark monitoring report in accordance with your sampling schedule. As specified in Part 7.4, you must use NetDMR to report any failure to monitor using a "no data" or "NODI" code during the regular reporting period.

6.1.6 Climates with Irregular Stormwater Runoff.

If your facility is located in areas where limited rainfall occurs during parts of the year (e.g., arid or semi-arid climates) or in areas where freezing conditions exist that prevent runoff from occurring for extended periods, required monitoring events may be distributed during seasons when precipitation occurs, or when snowmelt results in a measurable discharge from your site. You must still collect the required number of samples. As specified in Part 7.4, you must also use NetDMR to report using a "no data" or "NODI" code for any of the regular reporting periods that there was no monitoring.

6.1.7 Monitoring Periods.

Monitoring requirements in this permit begin in the first full quarter following either September 2, 2015 or your date of discharge authorization, whichever date comes later. If your monitoring is required on a quarterly basis (e.g., benchmark monitoring), you must monitor at least once in each of the following 3-month intervals:

- January 1 – March 31;
- April 1 – June 30;
- July 1 – September 30;
- October 1 – December 31.

For example, if you obtain permit coverage on July 2, 2015, then your first monitoring quarter is October 1 - December 31, 2015. This monitoring schedule may be modified in accordance with Part 6.1.6 if the revised schedule is documented with your SWPPP. However, using NetDMR you must report using a "no data" or "NODI" code for any 3-month interval that you did not take a sample.

6.1.8 Monitoring for Allowable Non-Stormwater Discharges.

You are only required to monitor allowable non-stormwater discharges (as delineated in Part 1.1.3) when they are commingled with stormwater discharges associated with industrial activity.

6.1.9 Monitoring Reports

Monitoring data must be reported using EPA's electronic NetDMR tool at www.epa.gov/netdmr, as described in Part 7.4 (unless a waiver from electronic reporting has been granted from the EPA Regional Office, in which case you may submit a paper DMR form).

6.2 Required Monitoring.

This permit includes five types of required analytical monitoring, one or more of which may apply to your discharge:

- Quarterly benchmark monitoring (see Part 6.2.1);
- Annual effluent limitations guidelines monitoring (see Part 6.2.2);
- State- or tribal-specific monitoring (see Part 6.2.3);

- Impaired waters monitoring (see Part 6.2.4); and
- Other monitoring as required by EPA (see Part 6.2.5).

When more than one type of monitoring for the same pollutant at the same outfall applies (e.g., total suspended solids once per year for an effluent limitation and once per quarter for benchmark monitoring at a given outfall), you may use a single sample to satisfy both monitoring requirements (i.e., one sample satisfying both the annual effluent limitation sample and one of the four quarterly benchmark monitoring samples). When the effluent limitation is lower than the benchmark concentration for the same pollutant, your corrective action trigger is based on an exceedance of the effluent limitation, which would subject you to the corrective action requirements of Part 4.1.

Note: Exceedance of an effluent limitation associated with the results of any analytical monitoring type required by this Part subjects you to the corrective action requirements of Part 4.1.

All required monitoring must be conducted in accordance with the procedures described in Appendix B, Subsection B.10.

6.2.1 Benchmark Monitoring.

This permit specifies pollutant benchmark concentrations that are applicable to certain sectors / subsectors. Benchmark monitoring data are primarily for your use to determine the overall effectiveness of your control measures and to assist you in determining when additional corrective action(s) may be necessary to comply with the effluent limitations in Part 2.

The benchmark concentrations are not effluent limitations; a benchmark exceedance, therefore, is not a permit violation. However, if corrective action is required as a result of a benchmark exceedance, failure to conduct required corrective action is a permit violation.

At your discretion, more than four samples may be taken during separate runoff events and used to determine the average benchmark parameter concentration for facility discharges.

6.2.1.1 Applicability of Benchmark Monitoring. You must monitor for any benchmark parameters specified for the industrial sector(s), both primary industrial activity and any co-located industrial activities, applicable to your discharge. Your industry-specific benchmark concentrations are listed in the sector-specific sections of Part 8. If your facility is in one of the industrial sectors subject to benchmark concentrations that are hardness-dependent, you are required to submit to EPA with your NOI a hardness value, established consistent with the procedures in Appendix J, which is representative of your receiving water.

Samples must be analyzed consistent with 40 CFR Part 136 analytical methods and using test procedures with quantitation limits at or below benchmark values for all benchmark parameters for which you are required to sample.

6.2.1.2 Benchmark Monitoring Schedule. Benchmark monitoring must be conducted quarterly, as identified in Part 6.1.7, for your first four full quarters of permit coverage commencing no earlier than September 2, 2015.

Facilities in climates with irregular stormwater runoff, as described in Part 6.1.6, may modify this quarterly schedule provided that this revised schedule is reported directly to EPA by the due date of the first benchmark sample (see EPA Regional contacts in Part 7.9.1), and that this revised schedule is kept with the facility's SWPPP as specified in Part 5.5. When conditions prevent you from obtaining four samples in four consecutive quarters, you must continue monitoring until you have the four samples required for calculating your benchmark monitoring average. As noted in Part 6.1.7, you must use NetDMR to report using a "no data" or "NODI" code for any 3-month interval that you did not take a sample.

Data not exceeding benchmarks: After collection of four quarterly samples, if the average of the four monitoring values for any parameter does not exceed the benchmark, you have fulfilled your monitoring requirements for that parameter for the permit term.

Data exceeding benchmarks: After collection of four quarterly samples, if the average of the four monitoring values for any parameter exceeds the benchmark, you must, in accordance with Part 4, review the selection, design, installation, and implementation of your control measures to determine if modifications are necessary to meet the effluent limits in this permit, and either:

- Make the necessary modifications and continue quarterly monitoring until you have completed four additional quarters of monitoring for which the average does not exceed the benchmark; or
- Make a determination that no further pollutant reductions are technologically available and economically practicable and achievable in light of best industry practice to meet the technology-based effluent limits or are necessary to meet the water-quality-based effluent limitations in Parts 2.1 and 2.2 of this permit, in which case you must continue monitoring once per year. You must also document your rationale for concluding that no further pollutant reductions are achievable, and retain all records related to this documentation with your SWPPP.

You must review your control measures and perform any required corrective action immediately (or document why no corrective action is required), per Part 4, without waiting for the full four quarters of monitoring data, when an exceedance of the four quarter average is mathematically certain. If after modifying your control measures and conducting four additional quarters of monitoring, your average still exceeds the benchmark (or if an exceedance of the benchmark by the four quarter average is mathematically certain prior to conducting the full four additional quarters of monitoring), you must again review your control measures and take one of the two actions above.

Natural background pollutant levels: Following the first four quarters of benchmark monitoring (or sooner if the exceedance is triggered by less than four quarters of data; see above), if the average concentration of a pollutant exceeds a benchmark value, and you determine that exceedance of the benchmark is attributable solely to the presence of that pollutant in the natural background, you are not required to perform corrective action or additional benchmark monitoring provided that:

- The average concentration of your benchmark monitoring results is less than or equal to the concentration of that pollutant in the natural background; and

- You document and maintain with your SWPPP, as required in Part 5.5, your supporting rationale for concluding that benchmark exceedances are in fact attributable solely to natural background pollutant levels. You must include in your supporting rationale any data previously collected by you or others (including literature studies) that describe the levels of natural background pollutants in your stormwater discharge.

Natural background pollutants are those substances that are naturally occurring in soils or ground water. Natural background pollutants do not include legacy pollutants from earlier activity on your site, or pollutants in run-on from neighboring sources which are not naturally occurring, such as other industrial sites or roadways. However, the EPA Regional Office may determine that you are eligible to discontinue monitoring for pollutants that occur solely from run-on sources.

6.2.1.3 ***Exception for Inactive and Unstaffed Sites.*** The requirement for benchmark monitoring does not apply at a facility that is inactive and unstaffed, provided that there are no industrial materials or activities exposed to stormwater. To invoke this exception, you must do the following:

- Maintain a statement with your SWPPP stating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to stormwater in accordance with the substantive requirements in 40 CFR 122.26(g) and sign and certify the statement in accordance with Appendix B, Subsection 11.
- If circumstances change and industrial materials or activities become exposed to stormwater or your facility becomes active and/or staffed, this exception no longer applies and you must immediately begin complying with the applicable benchmark monitoring requirements under Part 6.2 as if you were in your first year of permit coverage. You must indicate in your NOI that your facility has materials or activities exposed to stormwater or has become active and/or staffed.
- If you are not qualified for this exception at the time you are authorized under this permit, but during the permit term you become qualified because your facility is inactive and unstaffed, and there are no industrial materials or activities that are exposed to stormwater, then you must notify EPA of this change on your NOI form. You may discontinue benchmark monitoring once you have notified EPA, and prepared and signed the certification statement described above concerning your facility's qualification for this special exception.

Note: This exception has different requirements for Sectors G, H, and J (see Part 8).

6.2.2 **Effluent Limitations Monitoring.**

6.2.2.1 ***Monitoring Based on Effluent Limitations Guidelines.*** Table 6-1 identifies the stormwater discharges subject to effluent limitation guidelines that are authorized for coverage under this permit. An exceedance of the effluent limitation is a permit violation. Beginning in the first full quarter following September 2, 2015 or your date of discharge authorization, whichever date comes later, you must monitor once per year at each outfall containing the discharges identified in Table 6-1 for the parameters specified in the sector-specific section of Part 8.

Table 6-1. Required Monitoring for Effluent Limits Based on Effluent Limitations Guidelines

Regulated Activity	Effluent Limit	Monitoring Frequency	Sample Type
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	See Part 8.A.7	1/year	Grab
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	See Part 8.C.4	1/year	Grab
Runoff from asphalt emulsion facilities	See Part 8.D.4	1/year	Grab
Runoff from material storage piles at cement manufacturing facilities	See Part 8.E.5	1/year	Grab
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	See Part 8.J.9	1/year	Grab
Runoff from hazardous waste landfills	See Part 8.K.6	1/year	Grab
Runoff from non-hazardous waste landfills	See Part 8.L.10	1/year	Grab
Runoff from coal storage piles at steam electric generating facilities	See Part 8.O.8	1/year	Grab
Runoff containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures.	See Part 8.S.8	1/year	Grab

6.2.2.2 ***Substantially Identical Outfalls.*** You must monitor each outfall discharging runoff from any regulated activity identified in Table 6-1. The substantially identical outfall monitoring provisions are not available for numeric effluent limits monitoring.

6.2.2.3 ***Follow-up Actions if Discharge Exceeds Numeric Effluent Limitation.*** If any monitoring value exceeds a numeric effluent limitation contained in this permit, you must indicate the exceedance on a "Change NOI" form in the NPDES eReporting Tool (NeT), and you must conduct follow-up monitoring within 30 calendar days (or during the next qualifying runoff event, should none occur within 30 days) of implementing corrective action(s) taken per Part 4. When your follow-up monitoring exceeds the applicable effluent limitation, you must:

- ***Submit an Exceedance Report:*** You must submit an Exceedance Report no later than 30 days after you have received your laboratory result consistent with Part 7.6; and
- ***Continue to Monitor:*** You must monitor, at least quarterly, until your discharge is in compliance with the effluent limit or until EPA waives the requirement for additional monitoring. Once your discharge is back in compliance with the effluent limitation you must indicate this on a "Change NOI" form per Part 7.4.

6.2.3 State or Tribal Monitoring Provisions.

6.2.3.1 ***Sectors Required to Conduct State or Tribal Monitoring.*** You must comply with any state or tribal monitoring requirements (see Part 9) applicable to your facility's location.

6.2.3.2 ***State or Tribal Monitoring Schedule.*** If a monitoring frequency is not specified for an applicable requirement in Part 9, you must monitor once per year for the entire permit term.

6.2.4 Discharges to Impaired Waters Monitoring.

Note: For the purposes of this permit, your project is considered to discharge to an impaired water if the first water of the U.S. to which you discharge is identified by a state, tribe, or EPA pursuant to section 303(d) of the CWA as not meeting an applicable water quality standard, or has been removed from the 303(d) list either because the impairments are addressed by an EPA-approved or established TMDL or is covered by pollution control requirements that meet the requirements of 40 CFR 130.7(b)(1). For discharges that enter a separate storm sewer system[4] prior to discharge, the first water of the U.S. to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system.

6.2.4.1 *Permittees Required to Monitor Discharges to Impaired Waters.*

Discharges to impaired waters without an EPA-approved or established TMDL: Beginning in the first full quarter following September 2, 2015 or your date of discharge authorization, whichever date comes later, you must monitor all pollutants for which the waterbody is impaired and for which a standard analytical method exists (see 40 CFR Part 136) once per year at each outfall (except substantially identical outfalls) discharging stormwater to impaired waters without an EPA-approved or established TMDL.

If the pollutant of concern for the impaired waterbody is suspended solids, turbidity or sediment/sedimentation, you must monitor for Total Suspended Solids (TSS). If a pollutant of concern is expressed in the form of an indicator or surrogate pollutant, you must monitor for that indicator or surrogate pollutant. No monitoring is required when a waterbody's biological communities are impaired but no pollutant, including indicator or surrogate pollutants, is specified as causing the impairment, or when a waterbody's impairment is related to hydrologic modifications, impaired hydrology, or other non-pollutant. Permittees should consult the appropriate EPA Regional Office for any available guidance regarding required monitoring parameters under this part.

If the pollutant of concern is not detected and not expected to be present in your discharge, or it is detected but you have determined that its presence is caused solely by natural background sources, you may discontinue monitoring for that pollutant. To support a determination that the pollutant's presence is caused solely by natural background sources, you must document and maintain with your SWPPP, as required by Part 5.5:

- An explanation of why you believe that the presence of the pollutant of concern in your discharge is not related to the activities or materials at your facility; and
- Data and/or studies that tie the presence of the pollutant of concern in your discharge to natural background sources in the watershed.

Natural background pollutants include those that occur naturally as a result of native soils, and vegetation, wildlife, or ground water. Natural background pollutants do not include legacy pollutants from earlier activity on your site, or pollutants in run-on from neighboring sources that are not naturally occurring. However, you may be eligible to discontinue annual monitoring for pollutants that

4 Separate storm systems do not include combined sewer systems or sanitary sewer systems. Separate storm systems include both municipal storm sewer systems (MS4s) and non-municipal separate storm sewers.

occur solely from these sources and should consult the appropriate EPA Regional Office for related guidance.

Discharges to impaired waters with an EPA-approved or established TMDL: For stormwater discharges to waters for which there is an EPA-approved or established TMDL, you are not required to monitor for the pollutant(s) for which the TMDL was written unless EPA informs you, upon examination of the applicable TMDL and its wasteload allocation, that you are subject to such a requirement consistent with the assumptions and requirements of the applicable TMDL and its wasteload allocation. EPA's notice will include specifications on monitoring parameters and frequency. Permittees must consult the appropriate EPA Regional Office for guidance regarding required monitoring under this Part.

6.2.4.2 ***Exception for Inactive and Unstaffed Sites.*** The requirement for impaired waters monitoring does not apply at a facility that is inactive and unstaffed, as long as there are no industrial materials or activities exposed to stormwater. To invoke this exception, you must do the following:

- Maintain a statement with your SWPPP stating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to stormwater in accordance with the substantive requirements in 40 CFR 122.26(g) and sign and certify the statement in accordance with Appendix B, Subsection 11.
- If circumstances change and industrial materials or activities become exposed to stormwater or your facility becomes active and/or staffed, this exception no longer applies and you must immediately begin complying with the applicable impaired waters monitoring requirements under Part 6.2 as if you were in your first year of permit coverage. You must indicate in a "Change NOI" form per Part 7.4 that your facility has materials or activities exposed to stormwater or has become active and/or staffed.
- If you are not qualified for this exception at the time you are authorized under this permit, but during the permit term you become qualified because your facility is inactive and unstaffed, and there are no industrial materials or activities that are exposed to stormwater, then you must notify EPA of this change on your NOI form. You may discontinue impaired waters monitoring once you have notified EPA, and prepared and signed the certification statement described above concerning your facility's qualification for this special exception.

Note: This exception has different requirements for Sectors G, H, and J (see Part 8).

6.2.5 Additional Monitoring Required by EPA.

EPA may notify you of additional discharge monitoring requirements that EPA determines are necessary to meet the permit's effluent limitations. Any such notice will briefly state the reasons for the monitoring, locations, and parameters to be monitored, frequency and period of monitoring, sample types, and reporting requirements.

7. Reporting and Recordkeeping.

7.1 Electronic Reporting Requirement.

You must submit all NOIs, NOTs, NOEs, Annual Reports, Discharge Monitoring Reports (DMRs), and other reporting information as appropriate electronically, unless you have received a waiver from your EPA Regional Office based on one of the following conditions:

- If your headquarters is physically located in a geographic area (i.e., zip code or census tract) that is identified as under-served for broadband Internet access in the most recent report from the Federal Communications Commission; or
- If you have limitations regarding available computer access or computer capability.

Waivers are only granted for a one-time use for a single information submittal, i.e., an initial waiver does not apply for the entire term of the permit. If you need to submit information on paper after your first waiver, you must apply for a new waiver. However, waivers may be extended on a case-by-case basis by the EPA Regional Office.

If you wish to obtain a waiver from submitting a report electronically, you must submit a request to your EPA Regional Office. EPA Regional Office contact information can be found in Part 7.9.1 of this permit. In that request you must document which exemption you meet, provide evidence supporting any claims, and a copy of your completed NOI form. A waiver may only be considered granted once you receive written confirmation from EPA or its authorized representative.

7.2 Submitting Information to EPA.

Most information required to be submitted by this permit shall be submitted via EPA's electronic NPDES eReporting tool (NeT), unless the permit states otherwise or unless a waiver has been granted per Part 7.1. NeT allows you to both prepare and submit required information using specific forms, found in the permit's appendices. To access NeT, go to http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-eNOI-System-for-EPAs-MultiSector-General-Permit.cfm.

Information required to be submitted to EPA via NeT:

- Notice of Intent (Part 1.2);
- No Exposure Certification (Part 1.4);
- Notice of Termination (Part 1.3); and
- Annual Report (Part 7.5).

Note: Discharge Monitoring Reports (see Part 7.4) are required to be submitted using EPA's NetDMR system, available at www.epa.gov/netdmr.

If you are given a waiver by the EPA Regional Office to submit information in paper form, you must utilize the required forms found in the Appendices.

Information required to be submitted to an EPA Regional Office at the address in Part 7.9.1:

- New Dischargers and New Sources to Water Quality-Impaired Waters (Part 1.1.4.8);

- Exceedance Report for Numeric Effluent Limitations (Part 7.6); and
- Additional Reporting (Part 7.7)

7.3 Additional SWPPP Information Required in Your NOI.

If you did not provide a SWPPP URL in your NOI per Part 5.4.1, your NOI must include the additional SWPPP information as follows:

- Onsite industrial activities exposed to stormwater, including potential spill and leak areas (see Parts 5.2.3.1, 5.2.3.3 and 5.2.3.5);
- Pollutants or pollutant constituents associated with each industrial activity exposed to stormwater that could be discharged in stormwater and/or any authorized non-stormwater discharges listed in Part 1.1.3 (see Part 5.2.3.2);
- Stormwater control measures you employ to comply with the non-numeric technology-based effluent limits required in Part 2.1.2 and Part 8, and any other measures taken to comply with the requirements in Part 2.2 Water Quality - Based Effluent Limitations (see Part 5.2.4). If you use polymers and/or other chemical treatments as part of your controls, you must identify the polymers and/or chemicals used and the purpose; and
- Schedule for good housekeeping and maintenance (see Part 5.2.5.1) and schedule for all inspections required in Part 3 (see Part 5.2.5.2).

7.4 Reporting Monitoring Data to EPA.

All monitoring data collected pursuant to Part 6.2 must be submitted to EPA using EPA's NetDMR system (available at www.epa.gov/netdmr) (unless a waiver from electronic reporting has been granted, in which case you may submit a paper DMR form) no later than 30 days after you have received your complete laboratory results for all monitoring outfalls for the reporting period. Your monitoring requirements (i.e., parameters required to be monitored and sample frequency) will be prepopulated on your electronic Discharge Monitoring Report (DMR) form based on the information you reported on your NOI form (through the NDPES eReporting tool (NeT)). Accordingly, the following changes to your monitoring frequency must be reported to EPA through the submittal of a "Change NOI" form in NeT, which will trigger changes to your monitoring requirements in NetDMR:

- All benchmark monitoring requirements have been fulfilled for the permit term;
- All impaired waters monitoring requirements have been fulfilled for the permit term;
- Benchmark and/or impaired monitoring requirements no longer apply because your facility is inactive and unstaffed;
- Benchmark and/or impaired monitoring requirements now apply because your facility has changed from inactive and unstaffed to active and staffed;
- For Sector G2 only: Discharges from waste rock and overburden piles have exceeded benchmark values;
- A numeric effluent limitation guideline has been exceeded;
- A numeric effluent limitation guideline exceedance is back in compliance.

Once monitoring requirements have been completely fulfilled, you are no longer required to report monitoring results using NetDMR. If you have only partially fulfilled your benchmark monitoring and/or impaired waters monitoring requirements (e.g., your four

quarterly average is below the benchmark for some, but not all, parameters; you did not detect some, but not all, impairment pollutants), you must continue to use NetDMR to report your results, but you must report a "no data" or "NODI" code for any monitoring parameters that have been fulfilled.

If you have received a waiver per Part 7.1, paper reporting forms must be submitted by the same deadline.

See Part 9 for specific reporting requirements applicable to individual states or tribes.

For benchmark monitoring, note that you are required to submit sampling results to EPA no later than 30 days after receiving your complete laboratory results for all monitored outfalls for each quarter that you are required to collect benchmark samples, per Part 6.2.1.2. If you collect samples during multiple storm events in a single quarter (e.g., due to adverse weather conditions, climates with irregular stormwater runoff, or areas subject to snow), you are required to submit all sampling results for each storm event to EPA within 30 days of receiving all laboratory results for the event. Or, for any of your monitored outfalls that did not have a discharge within the reporting period, using NetDMR you must report using a "no data" or "NODI" code for that outfall no later than 30 days after the end of the reporting period.

7.5 Annual Report.

You must submit an Annual Report to EPA electronically, per Part 7.2, by January 30th for each year of permit coverage containing information generated from the past calendar year. You must include the following information:

- A summary of your past year's routine facility inspection documentation required (Part 3.1.2). In addition, if you are an operator of an airport facility (Sector S) that is subject to the airport effluent limitations guidelines, and are complying with the Part 8.S.8.1 effluent limitation through the use of non-urea-containing deicers, provide a statement certifying that you do not use pavement deicers containing urea. (Note: Operators of airport facilities that are complying with Part 8.S.8.1 by meeting the numeric effluent limitation for ammonia do not need to include this statement.)
- A summary of your past year's quarterly visual assessment documentation (see Part 3.2.2 of the permit);
- For any four-sample (minimum) average benchmark monitoring exceedance, if after reviewing the selection, design, installation, and implementation of your control measures and considering whether any modifications are necessary to meet the effluent limits in the permit, you determine that no further pollutant reductions are technologically available and economically practicable and achievable in light of best industry practice, your rationale for why you believe no further reductions are achievable (see Part 6.2.1.2 of the permit); and
- A summary of your past year's corrective action documentation (see Part 4.4). If corrective action is not yet completed at the time of submission of your annual report, you must describe the status of any outstanding corrective action(s). Also describe any incidents of noncompliance in the past year or currently ongoing, or if none, provide a statement that you are in compliance with the permit.

Your Annual Report must also include a statement, signed and certified in accordance with Appendix B, Subsection 11.

7.6 Exceedance Report for Numeric Effluent Limitations.

If follow-up monitoring per Part 6.2.2.3 exceeds a numeric effluent limit, you must submit an Exceedance Report to EPA no later than 30 days after you have received your laboratory results. Your report must include the following:

- NPDES ID;
- Facility name, physical address and location;
- Name of receiving water;
- Monitoring data from this and the preceding monitoring event(s);
- An explanation of the situation, including what you have done and intend to do (should your corrective actions not yet be complete) to correct the violation;
- An appropriate contact name and phone number.

Send the Exceedance Report to the appropriate EPA Regional Office listed in Part 7.9.1, and report the monitoring data through NetDMR

7.7 Additional Reporting.

In addition to the reporting requirements stipulated in Part 7, you are also subject to the standard permit reporting provisions of Appendix B, Subsection 12.

You must submit the following reports to the appropriate EPA Regional Office listed in Part 7.9.1, as applicable. If you discharge through an MS4, you must also submit these reports to the MS4 operator (identified pursuant to Part 5.2.2).

- 24-hour reporting (see Appendix B, Subsection 12.F) – You must report any noncompliance which may endanger health or the environment. Any information must be provided orally within 24 hours from the time you become aware of the circumstances;
- 5-day follow-up reporting to the 24 hour reporting (see Appendix B, Subsection 12.F) – A written submission must also be provided within five days of the time you become aware of the circumstances;
- Reportable quantity spills (see Part 2.1.2.4) – You must provide notification, as required under Part 2.1.2.4, as soon as you have knowledge of a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity;
- Planned changes (see Appendix B, Subsection 12.A) – You must give notice to EPA promptly, no fewer than 30 days prior to making any planned physical alterations or additions to the permitted facility that qualify the facility as a new source or that could significantly change the nature or significantly increase the quantity of pollutants discharged;
- Anticipated noncompliance (see Appendix B, Subsection 12.B) – You must give advance notice to EPA of any planned changes in the permitted facility or activity which you anticipate will result in noncompliance with permit requirements;

- Compliance schedules (see Appendix B, Subsection 12.F) – Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date;
- Other noncompliance (see Appendix B, Subsection 12.G) – You must report all instances of noncompliance not reported in your annual report, compliance schedule report, or 24-hour report at the time monitoring reports are submitted; and
- Other information (see Appendix B, Subsection 12.H) – You must promptly submit facts or information if you become aware that you failed to submit relevant facts in your NOI, or that you submitted incorrect information in your NOI or in any report.

7.8 Recordkeeping.

You must retain copies of your SWPPP (including any modifications made during the term of this permit), additional documentation requirements pursuant to Part 5.5 (including documentation related to corrective actions taken pursuant to Part 4), all reports and certifications required by this permit, monitoring data, and records of all data used to complete the NOI to be covered by this permit, for a period of at least three years from the date that your coverage under this permit expires or is terminated.

7.9 Addresses for Reports.

7.9.1 EPA Addresses.

7.9.1.1 Region 1: Connecticut, Massachusetts, and New Hampshire, Rhode Island, Vermont.

U.S. EPA Region 1
Office of Ecosystem Protection
Stormwater and Construction Permits Section
5 Post Office Square, Suite 100
(OEP 06-1)
Boston, MA 02109-3912

7.9.1.2 Region 2: New Jersey, New York, Puerto Rico, and Virgin Islands.

For Puerto Rico and the Virgin Islands

U.S. EPA Region 2
Caribbean Environmental Protection Division
NPDES Stormwater Program
City View Plaza II – Suite 7000
48 Rd. 165 Km 1.2
Guaynabo, PR 00968-8069

For New Jersey and New York:

(Coverage not available under this permit.)
U.S. EPA Region 2
NPDES Stormwater Program
290 Broadway, 24th Floor
New York, NY 10007-1866

7.9.1.3 ***Region 3: Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia.***

U.S. EPA Region 3
Office of NPDES Permits and Enforcement
NPDES Permits Branch, Mailcode 3WP41
1650 Arch Street
Philadelphia, PA 19103

7.9.1.4 ***Region 4: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee.***

(Coverage not available under this permit.)

U.S. EPA Region 4
Water Protection Division
NPDES Stormwater Program
Atlanta Federal Center
61 Forsyth Street SW
Atlanta, GA 30303-3104

7.9.1.5 ***Region 5: Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin.***

U.S. EPA Region 5
NPDES Program Branch
77 W. Jackson Blvd.
Mail Code WN16J
Chicago, IL 60604-3507

7.9.1.6 ***Region 6: Arkansas, Louisiana, Oklahoma, Texas, and New Mexico (except see Region 9 for Navajo lands, and see Region 8 for Ute Mountain Reservation lands).***

U.S. EPA Region 6
NPDES Stormwater Program (WQ-PP)
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

7.9.1.7 ***Region 7: Iowa, Kansas, Missouri, Nebraska.***

U.S. EPA Region 7
NPDES Stormwater Program
11201 Renner Blvd
Lenexa, KS 66219

7.9.1.8 ***Region 8: Colorado, Montana, North Dakota, South Dakota, Wyoming, Utah (except see Region 9 for Goshute Reservation and Navajo Reservation lands), the Ute Mountain Reservation in New Mexico, and the Pine Ridge Reservation in Nebraska.***

EPA Region 8 Storm Water Program
Mailcode: 8P-W-WW
1595 Wynkoop Street
Denver, CO 80202-1129

7.9.1.9 ***Region 9: Arizona, California, Hawaii, Nevada, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Goshute Reservation in Utah***

and Nevada, the Navajo Reservation in Utah, New Mexico, and Arizona, the Duck Valley Reservation in Idaho, Fort McDermitt Reservation in Oregon.

U.S. EPA Region 9
Water Division
NPDES Stormwater Program (WTR-2-3)
75 Hawthorne Street
San Francisco, CA 94105-3901

7.9.1.10 Region 10: Alaska, Idaho, Oregon (except see Region 9 for Fort McDermitt Reservation), Washington.

U.S. EPA Region 10
NPDES Stormwater Program
1200 6th Avenue (OWW-191)
Seattle, WA 98101-3140

7.9.2 State and Tribal Addresses.

See Part 9 (states and tribes) for the addresses of applicable states or tribes that require submission of information to their agencies.

Part 8 – Sector-Specific Requirements for Industrial Activity

You must comply with the requirements applicable to your industrial sector(s) in this Part, in addition to the requirements applicable to all facilities in Parts 1 through 7 and the appendices to the permit.

Subpart A – Sector A – Timber Products.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.A.1 Covered Stormwater Discharges.

The requirements in Subpart A apply to stormwater discharges associated with industrial activity from Timber Products facilities as identified by the SIC Codes specified under Sector A in Table D-1 of Appendix D of the permit.

8.A.2 Limitations on Coverage.

8.A.2.1 ***Prohibition of Discharges.*** (See also Part 1.1.4) Not covered by this permit: stormwater discharges from areas where there may be contact with the chemical formulations sprayed to provide surface protection. These discharges must be covered by a separate NPDES permit.

8.A.2.2 ***Authorized Non-Stormwater Discharges.*** (See also Part 1.1.3) Also authorized by this permit, provided the non-stormwater component of the discharge is in compliance with the requirements in Part 2.1.2 (Non-Numeric Effluent Limits): discharges from the spray down of lumber and wood product storage yards where no chemical additives are used in the spray-down waters and no chemicals are applied to the wood during storage.

8.A.3 Additional Technology-Based Effluent Limits.

8.A.3.1 ***Good Housekeeping.*** (See also Part 2.1.2.2) In areas where storage, loading and unloading, and material handling occur, perform good housekeeping to minimize the discharge of wood debris, leachate generated from decaying wood materials, and the generation of dust.

8.A.4 Additional SWPPP Requirements.

8.A.4.1 ***Drainage Area Site Map.*** (See also Part 5.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or surface runoff: processing areas, treatment chemical storage areas, treated wood and residue storage areas, wet decking areas, dry decking areas, untreated wood and residue storage areas, and treatment equipment storage areas.

8.A.4.2 ***Inventory of Exposed Materials.*** (See also Part 5.2.3.2) Where such information exists, if your facility has used chlorophenolic, creosote, or chromium-copper-arsenic formulations for wood surface protection or preserving, document in your SWPPP the following: areas where contaminated soils, treatment equipment, and stored materials still remain and the management practices employed to minimize the contact of these materials with stormwater runoff.

8.A.4.3 ***Description of Stormwater Management Controls.*** (See also Part 5.2.4) Document measures implemented to address the following activities and sources: log, lumber, and wood product storage areas; residue storage areas; loading and unloading areas;

material handling areas; chemical storage areas; and equipment and vehicle maintenance, storage, and repair areas. If your facility performs wood surface protection and preservation activities, address the specific control measures, including any BMPs, for these activities.

8.A.5 Additional Inspection Requirements. (See also Part 3.1)

If your facility performs wood surface protection and preservation activities, inspect processing areas, transport areas, and treated wood storage areas monthly to assess the usefulness of practices to minimize the deposit of treatment chemicals on unprotected soils and in areas that will come in contact with stormwater discharges.

8.A.6 Sector-Specific Benchmarks. (See also Part 6)

Table 8.A-1 identifies benchmarks that apply to the specific subsectors of Sector A. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.A-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector A1. General Sawmills and Planing Mills (SIC 2421)	Chemical Oxygen Demand (COD)	120.0 mg/L
	Total Suspended Solids (TSS)	100 mg/L
	Total Zinc (freshwater)[2] Total Zinc (saltwater)[1]	Hardness Dependent 0.09 mg/L
Subsector A2. Wood Preserving (SIC 2491)	Total Arsenic (freshwater) Total Arsenic (saltwater)[1]	0.15 mg/L 0.069 mg/L
	Total Copper (freshwater)[2] Total Copper (saltwater)[1]	Hardness Dependent 0.0048 mg/L
Subsector A3. Log Storage and Handling (SIC 2411)	Total Suspended Solids (TSS)	100 mg/L
Subsector A4. Hardwood Dimension and Flooring Mills; Special Products Sawmills, not elsewhere classified; Millwork, Veneer, Plywood, and Structural Wood; Wood Pallets and Skids; Wood Containers, not elsewhere classified; Wood Buildings and Mobile Homes; Reconstituted Wood Products; and Wood Products Facilities not elsewhere classified (SIC 2426, 2429, 2431-2439 (except 2434), 2441, 2448, 2449, 2451, 2452, 2493, and 2499)	Chemical Oxygen Demand (COD)	120.0 mg/L
	Total Suspended Solids (TSS)	100.0 mg/L

[1]Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.
[2] The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 6.2.1.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	Copper (mg/L)	Zinc (mg/L)
0-24.99 mg/L	0.0038	0.04
25-49.99 mg/L	0.0056	0.05
50-74.99 mg/L	0.0090	0.08
75-99.99 mg/L	0.0123	0.11
100-124.99 mg/L	0.0156	0.13
125-149.99 mg/L	0.0189	0.16
150-174.99 mg/L	0.0221	0.18
175-199.99 mg/L	0.0253	0.20
200-224.99 mg/L	0.0285	0.23
225-249.99 mg/L	0.0316	0.25
250+ mg/L	0.0332	0.26

8.A.7 Effluent Limitations Based on Effluent Limitations Guidelines. (See also Part 6.2.2)

Table 8.A-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table 8.A-2[1]

Industrial Activity	Parameter	Effluent Limitation
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	pH	6.0 - 9.0 s.u
	Debris (woody material such as bark, twigs, branches, heartwood, or sapwood)	No discharge of debris that will not pass through a 2.54-cm (1-in.) diameter round opening

[1] Monitor annually.

8.A.7.1 ***Credit for Pollutants in Intake Water.*** For discharges that are comprised solely of water drawn from the same body of water into which the discharges flow and that exceed an applicable effluent limitation, you may be eligible for a credit to the extent necessary to meet the limitation. To obtain this credit, you must show that your discharge would meet the limitation in the absence of the pollutant(s) in the intake water by demonstrating that the control measures you use to meet the limitation would, if properly installed and operated, meet the limitations for the pollutant (i.e., the pollutant level in your discharge is in exceedance of the limitation due to the pollutant concentration in the source or intake water). You must consult the appropriate EPA Regional Office for guidance in seeking a pollutant credit under this Part. EPA will notify you whether you are eligible for the credit, and, if so, provide the scope of such credit.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart B – Sector B – Paper and Allied Products.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.B.1 Covered Stormwater Discharges.

The requirements in Subpart B apply to stormwater discharges associated with industrial activity from Paper and Allied Products Manufacturing facilities, as identified by the SIC Codes specified under Sector B in Table D-1 of Appendix D of the permit.

8.B.2 Sector-Specific Benchmarks. (See also Part 6)

Table 8.B-1 identifies benchmarks that apply to the specific subsectors of Sector B. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.B-1.

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector B1. Paperboard Mills (SIC Code 2631)	Chemical Oxygen Demand (COD)	120 mg/L

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart C – Sector C – Chemical and Allied Products Manufacturing, and Refining.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.C.1 Covered Stormwater Discharges.

The requirements in Subpart C apply to stormwater discharges associated with industrial activity from Chemical and Allied Products Manufacturing, and Refining facilities, as identified by the SIC Codes specified under Sector C in Table D-1 of Appendix D of the permit.

8.C.2 Limitations on Coverage.

8.C.2.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.4) The following are not covered by this permit: non-stormwater discharges containing inks, paints, or substances (hazardous, nonhazardous, etc.) resulting from an onsite spill, including materials collected in drip pans; wash water from material handling and processing areas; and wash water from drum, tank or container rinsing and cleaning. (EPA includes this prohibited non-stormwater discharge here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.1.3.)

8.C.3 Sector-Specific Benchmarks. (See also Part 6)

Table 8.C-1 identifies benchmarks that apply to the specific subsectors of Sector C. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.C-1.		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector C1. Agricultural Chemicals (SIC 2873-2879)	Nitrate plus Nitrite Nitrogen	0.68 mg/L
	Total Lead (freshwater)[2] Total Lead (saltwater)[1]	Hardness Dependent 0.21 mg/L
	Total Iron	1.0 mg/L
	Total Zinc (freshwater)[2] Total Zinc (saltwater)[1]	Hardness Dependent 0.09 mg/L
	Phosphorus	2.0 mg/L
Subsector C2. Industrial Inorganic Chemicals (SIC 2812-2819)	Total Aluminum	0.75 mg/L
	Total Iron	1.0 mg/L
	Nitrate plus Nitrite Nitrogen	0.68 mg/L
Subsector C3. Soaps, Detergents, Cosmetics, and Perfumes (SIC 2841-2844)	Nitrate plus Nitrite Nitrogen	0.68 mg/L
	Total Zinc (freshwater)[2] Total Zinc (saltwater)[1]	Hardness Dependent 0.09 mg/L
Subsector C4. Plastics, Synthetics, and Resins (SIC 2821-2824)	Total Zinc (freshwater)[2] Total Zinc (saltwater)[1]	Hardness Dependent 0.09 mg/L

[1]Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.
[2]The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 6.2.1.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	Lead (mg/L)	Zinc (mg/L)
0-24.99 mg/L	0.014	0.04
25-49.99 mg/L	0.023	0.05
50-74.99 mg/L	0.045	0.08
75-99.99 mg/L	0.069	0.11
100-124.99 mg/L	0.095	0.13
125-149.99 mg/L	0.122	0.16
150-174.99 mg/L	0.151	0.18
175-199.99 mg/L	0.182	0.20
200-224.99 mg/L	0.213	0.23
225-249.99 mg/L	0.246	0.25
250+ mg/L	0.262	0.26

8.C.4 Effluent Limitations Based on Effluent Limitations Guidelines. (See also Part 6.2.2.1)

Table 8.C-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table 8.C-2[1]		
Industrial Activity	**Parameter**	**Effluent Limitation**
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	Total Phosphorus (as P)	105.0 mg/L, daily maximum
		35 mg/L, 30-day avg.
	Fluoride	75.0 mg/L, daily maximum
		25.0 mg/L, 30-day avg.

[1] Monitor annually.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart D – Sector D – Asphalt Paving and Roofing Materials and Lubricant Manufacturing.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.D.1 Covered Stormwater Discharges.

The requirements in Subpart D apply to stormwater discharges associated with industrial activity from Asphalt Paving and Roofing Materials and Lubricant Manufacturing facilities, as identified by the SIC Codes specified under Sector D in Table D-1 of Appendix D of the permit.

8.D.2 Limitations on Coverage.

The following stormwater discharges associated with industrial activity are not authorized by this permit (see also Part 1.1.4):

8.D.2.1 ***Stormwater discharges from petroleum refining facilities, including those that manufacture asphalt or asphalt products, that are subject to nationally established effluent limitation guidelines found in 40 CFR Part 419 (Petroleum Refining).***

The following stormwater discharges associated with industrial activity are not authorized under Sector D:

8.D.2.2 ***Stormwater discharges from oil recycling facilities, which are covered under Sector N*** (see Part 8.N); and

8.D.2.3 ***Stormwater discharges associated with fats and oils rendering, which are covered under Sector U*** (see Part 8.U).

8.D.3 Sector-Specific Benchmarks. (See also Part 6)

Table 8.D-1 identifies benchmarks that apply to the specific subsectors of Sector D. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.D-1.

Subsector	Parameter	Benchmark Monitoring Concentration
Subsector D1. Asphalt Paving and Roofing Materials (SIC 2951, 2952)	Total Suspended Solids (TSS)	100 mg/L

8.D.4 Effluent Limitations Based on Effluent Limitations Guidelines. (See also Part 6.2.2.1)

Table 8.D-2 identifies effluent limitations that apply to the industrial activities described below. Compliance with these effluent limitations is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table 8.D-2[1]		
Industrial Activity	**Parameter**	**Effluent Limitation**
Discharges from asphalt emulsion facilities.	Total Suspended Solids (TSS)	23.0 mg/L, daily maximum 15.0 mg/L, 30-day avg.
	pH	6.0 - 9.0 s.u.
	Oil and Grease	15.0 mg/L, daily maximum
		10 mg/L, 30-day avg.

[1]Monitor annually.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart E – Sector E – Glass, Clay, Cement, Concrete, and Gypsum Products.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.E.1 Covered Stormwater Discharges.

The requirements in Subpart E apply to stormwater discharges associated with industrial activity from Glass, Clay, Cement, Concrete, and Gypsum Products facilities, as identified by the SIC Codes specified under Sector E in Table D-1 of Appendix D of the permit.

8.E.2 Additional Technology-Based Effluent Limits.

8.E.2.1 ***Good Housekeeping Measures.*** (See also Part 2.1.2.2) As part of your good housekeeping program, prevent or minimize the discharge of spilled cement, aggregate (including sand or gravel), kiln dust, fly ash, settled dust, or other significant material in stormwater from paved portions of the site that are exposed to stormwater. Sweep or vacuum paved surfaces of the site that are exposed to stormwater at regular intervals or use other equivalent measures (e.g., wash down the area and collect and/or treat and properly dispose of the washdown water) to minimize the potential discharge of these materials in stormwater. Indicate in your SWPPP the frequency of sweeping, vacuuming or other equivalent measures. Determine the frequency based on the amount of industrial activity occurring in the area and the frequency of precipitation, but it must be performed at least once a week in areas where cement, aggregate, kiln dust, fly ash or settled dust are being handled or processed and may be discharged in stormwater. You must also prevent the exposure of fine granular solids (e.g., cement, fly ash, kiln dust) to stormwater, where practicable, by storing these materials in enclosed silos, hoppers, buildings or under other covering.

8.E.3 Additional SWPPP Requirements.

8.E.3.1 ***Drainage Area Site Map.*** (See also Part 5.2.2) Document in the SWPPP the locations of the following, as applicable: bag house or other dust control device; recycle/ sedimentation pond, clarifier, or other device used for the treatment of process wastewater; and the areas that drain to the treatment device.

8.E.3.2 ***Discharge Testing.*** (See also Part 5.2.3.4) For facilities producing ready-mix concrete, concrete block, brick, or similar products, include in the non-stormwater discharge testing a description of measures that ensure that process wastewaters resulting from washing trucks, mixers, transport buckets, forms, or other equipment are discharged in accordance with NPDES wastewater permit requirements or are recycled.

8.E.4 Sector-Specific Benchmarks. (See also Part 6)

Table 8.E-1 identifies benchmarks that apply to the specific subsectors of Sector E. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.E-1.		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector E1. Clay Product Manufacturers (SIC 3251-3259, 3261-3269)	Total Aluminum	0.75 mg/L
Subsector E2. Concrete and Gypsum Product Manufacturers (SIC 3271-3275)	Total Suspended Solids (TSS)	100 mg/L
	Total Iron	1.0 mg/L

8.E.5 Effluent Limitations Based on Effluent Limitations Guidelines. (See also Part 6.2.2.1)

Table 8.E-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table 8.E-2[1]		
Industrial Activity	**Parameter**	**Effluent Limitation**
Discharges from material storage piles at cement manufacturing facilities (SIC 3241)	Total Suspended Solids (TSS)	50 mg/L, daily maximum[2]
	pH	6.0 - 9.0 s.u.[2]

[1]Monitor annually.
[2]Any untreated overflow from facilities designed, constructed and operated to treat the volume of runoff from materials storage piles which is associated with a 10-year, 24-hour rainfall event shall not be subject to the pH and TSS limitations (40 CFR 411.32(b)).

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart F – Sector F – Primary Metals.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.F.1 Covered Stormwater Discharges.

The requirements in Subpart F apply to stormwater discharges associated with industrial activity from Primary Metals facilities, as identified by the SIC Codes specified under Sector F in Table D-1 of Appendix D of the permit.

8.F.2 Additional Technology-Based Effluent Limits.

8.F.2.1 ***Good Housekeeping Measures.*** (See also Part 2.1.2.2) As part of your good housekeeping program, you must implement a cleaning and maintenance program for all impervious areas of the facility where particulate matter, dust or debris may accumulate to minimize the discharge of pollutants in stormwater. The cleaning and maintenance program must encompass, as appropriate, areas where material loading and unloading, storage, handling and processing occur.

Stabilize unpaved areas using vegetation or paving where there is vehicle traffic or where material loading and unloading, storage, handling and processing occurs, unless feasible.

For paved areas of the facility where particulate matter, dust or debris may accumulate, to minimize the discharge of pollutants in stormwater, implement control measures such as the following, where determined to be feasible (list not exclusive): sweeping or vacuuming at regular intervals; and washing down the area and collecting and/or treating and properly disposing of the washdown water. For unstabilized areas or for stabilized areas where sweeping, vacuuming, or washing down is not possible, to minimize the discharge of particulate matter, dust, or debris or other pollutants in stormwater, implement stormwater management devices such as the following, where determined to be feasible (list not exclusive): sediment traps, vegetative buffer strips, filter fabric fence, sediment filtering boom, gravel outlet protection, and other equivalent measures that effectively trap or remove sediment.

8.F.3 Additional SWPPP Requirements.

8.F.3.1 ***Drainage Area Site Map.*** (See also Part 5.2.2) Identify in the SWPPP where any of the following activities may be exposed to precipitation or surface runoff: storage or disposal of wastes such as spent solvents and baths, sand, slag and dross; liquid storage tanks and drums; processing areas including pollution control equipment (e.g., baghouses); and storage areas of raw material such as coal, coke, scrap, sand, fluxes, refractories or metal in any form. In addition, indicate where an accumulation of significant amounts of particulate matter could occur from such sources as furnace or oven emissions, losses from coal and coke handling operations, etc., and could result in a discharge of pollutants in stormwater.

8.F.3.2 ***Inventory of Exposed Material.*** (See also Part 5.2.3) Include in the inventory of materials handled at the site that potentially may be exposed to precipitation or runoff areas where there is the potential for deposition of particulate matter from process air emissions or losses during material-handling activities.

8.F.4 Additional Inspection Requirements. (See also Part 3.1)

As part of conducting your routine facility inspections at least quarterly (Part 3.1), address all potential sources of pollutants, including (if applicable) air pollution control equipment (e.g., baghouses, electrostatic precipitators, scrubbers, cyclones), for any signs of degradation (e.g., leaks, corrosion, improper operation) that could limit their efficiency and lead to excessive emissions. Consider monitoring air flow at inlets and outlets (or use equivalent measures) to check for leaks (e.g., particulate deposition) or blockage in ducts. Also inspect all process and material handling equipment (e.g., conveyors, cranes and vehicles) for leaks, drips, or the potential loss of material; and material storage areas (e.g., piles, bins, or hoppers for storing coke, coal, scrap or slag, as well as chemicals stored in tanks and drums) for signs of material losses due to wind or stormwater runoff.

8.F.5 Sector-Specific Benchmarks. (See also Part 6)

Table 8.F-1 identifies benchmarks that apply to the specific subsectors of Sector F. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.F-1.

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector F1. Steel Works, Blast Furnaces, and Rolling and Finishing Mills (SIC 3312-3317)	Total Aluminum	0.75 mg/L
	Total Zinc (freshwater)[2] Total Zinc (saltwater)[1]	Hardness Dependent 0.09 mg/L
Subsector F2. Iron and Steel Foundries (SIC 3321-3325)	Total Aluminum	0.75 mg/L
	Total Suspended Solids (TSS)	100 mg/L
	Total Copper (freshwater)[2] Total Copper (saltwater)[1]	Hardness Dependent 0.0048 mg/L
	Total Iron	1.0 mg/L
	Total Zinc (freshwater)[2] Total Zinc (saltwater)[1]	Hardness Dependent 0.09 mg/L
Subsector F3. Rolling, Drawing, and Extruding of Nonferrous Metals (SIC 3351-3357)	Total Copper (freshwater)[2] Total Copper (saltwater)[1]	Hardness Dependent 0.0048 mg/L
	Total Zinc (freshwater)[2] Total Zinc (saltwater)[1]	Hardness Dependent 0.09 mg/L
Subsector F4. Nonferrous Foundries (SIC 3363-3369)	Total Copper (freshwater)[2] Total Copper (saltwater)[1]	Hardness Dependent 0.0048 mg/L
	Total Zinc (freshwater)[2] Total Zinc (saltwater)[1]	Hardness Dependent 0.09 mg/L

[1]Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.

[2] The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 6.2.1.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	Copper (mg/L)	Zinc (mg/L)
0-24.99 mg/L	0.0038	0.04
25-49.99 mg/L	0.0056	0.05
50-74.99 mg/L	0.0090	0.08
75-99.99 mg/L	0.0123	0.11
100-124.99 mg/L	0.0156	0.13
125-149.99 mg/L	0.0189	0.16
150-174.99 mg/L	0.0221	0.18
175-199.99 mg/L	0.0253	0.20
200-224.99 mg/L	0.0285	0.23
225-249.99 mg/L	0.0316	0.25
250+ mg/L	0.0332	0.26

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart G – Sector G – Metal Mining.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

Note: Where compliance with a requirement in a separate exploration permit, mining permit, reclamation plan, Surface Mining Control and Reclamation Act (SMCRA) requirements, etc. will result in you fully meeting any requirement in this Subpart, you are considered to have complied with the relevant requirement in this Subpart. You must include documentation in your SWPPP describing your rationale for concluding that any particular action on your part is sufficient to comply with the corresponding requirement in this Subpart.

8.G.1 Covered Stormwater Discharges.

The requirements in Subpart G apply to stormwater discharges associated with industrial activity from Metal Mining facilities, including mines abandoned on Federal lands, as identified by the SIC Codes specified under Sector G in Table D-1 of Appendix D. Coverage is required for metal mining facilities that discharge stormwater contaminated by contact with, or that has come into contact with, any overburden, raw material, intermediate product, finished product, byproduct, or waste product located on the site of the operation.

8.G.1.1 ***Covered Discharges from Inactive Facilities.*** All stormwater discharges.

8.G.1.2 ***Covered Discharges from Active and Temporarily Inactive Facilities.*** Only the stormwater discharges from the following areas are covered:

- Waste rock and overburden piles if composed entirely of stormwater and not combined with mine drainage;
- Topsoil piles;
- Offsite haul and access roads;
- Onsite haul and access roads constructed of waste rock, overburden or spent ore if composed entirely of stormwater and not combining with mine drainage;
- Onsite haul and access roads not constructed of waste rock, overburden or spent ore except if mine drainage is used for dust control;
- Runoff from tailings dams or dikes when not constructed of waste rock or tailings and no process fluids are present;
- Runoff from tailings dams or dikes when constructed of waste rock or tailings and no process fluids are present, if composed entirely of stormwater and not combining with mine drainage;
- Concentration building if no contact with material piles;
- Mill site if no contact with material piles;
- Office or administrative building and housing if mixed with stormwater from industrial area;
- Chemical storage area;
- Docking facility if no excessive contact with waste product that would otherwise constitute mine drainage;
- Explosive storage;
- Fuel storage;
- Vehicle and equipment maintenance area and building;
- Parking areas (if necessary);
- Power plant;

- Truck wash areas if no excessive contact with waste product that would otherwise constitute mine drainage;
- Unreclaimed, disturbed areas outside of active mining area;
- Reclaimed areas released from reclamation requirements prior to December 17, 1990;
- Partially or inadequately reclaimed areas or areas not released from reclamation requirements.

8.G.1.3 ***Covered Discharges from Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*** All stormwater discharges.

8.G.1.4 ***Covered Discharges from Facilities Undergoing Reclamation.*** All stormwater discharges.

8.G.2 Limitations on Coverage.

8.G.2.1 ***Prohibition of Stormwater Discharges.*** **Stormwater discharges not authorized by this permit:** discharges from active metal mining facilities that are subject to effluent limitation guidelines for the Ore Mining and Dressing Point Source Category (40 CFR Part 440).

Note: Stormwater runoff from these sources are subject to 40 CFR Part 440 if they are mixed with other discharges subject to Part 440. In this case, they are not eligible for coverage under this permit. Discharges from overburden/waste rock and overburden/waste rock-related areas are not subject to 40 CFR Part 440 unless they: (1) drain naturally (or are intentionally diverted) to a point source; and (2) combine with "mine drainage" that is otherwise regulated under the Part 440 regulations. For such sources, coverage under this permit would be available if the discharge composed entirely of stormwater does not combine with other sources of mine drainage that are not subject to 40 CFR Part 440, and meets the other eligibility criteria contained in Part 1.1 of the permit. Operators bear the initial responsibility for determining if they are eligible for coverage under this permit, or must seek coverage under another NPDES permit. EPA recommends that operators contact the relevant NPDES permit issuance authority for assistance to determine the nature and scope of the "active mining area" on a mine-by-mine basis, as well as to determine the appropriate permitting mechanism for authorizing such discharges.

8.G.2.2 ***Prohibition of Non-Stormwater Discharges.*** Not authorized by this permit: adit drainage, and contaminated springs or seeps discharging from waste rock dumps that do not directly result from precipitation events (see also the standard Limitations on Coverage in Part 1.1.4). (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.1.3)

8.G.3 Definitions.

The following definitions are not intended to supersede the definitions of active and inactive mining facilities established by 40 CFR 122.26(b)(14)(iii).

8.G.3.1 ***Mining operations*** – For this permit, mining operations are grouped into two distinct categories, with distinct effluent limits and requirements applicable to each: a) earth-disturbing activities conducted prior to active mining activities); and b) active mining activities, which includes reclamation. "Mining operations" can occur at both inactive mining facilities and temporarily inactive mining facilities.

8.G.3.2 ***Earth-disturbing activities conducted prior to active mining activities*** – Consists of two classes of earth-disturbing (i.e., clearing, grading and excavation) activities:

a. activities performed for purposes of mine site preparation, including: cutting new rights of way (except when related to access road construction); providing access to a mine site for vehicles and equipment (except when related to access road construction); other earth disturbances associated with site preparation activities on any areas where active mining activities have not yet commenced (e.g., for heap leach pads, waste rock facilities, tailings impoundments, wastewater treatment plants); and

b. construction of staging areas to prepare for erecting structures such as to house project personnel and equipment, mill buildings, etc., and construction of access roads. Earth-disturbing activities associated with the construction of staging areas and the construction of access roads conducted prior to active mining are considered to be "construction" and have additional effluent limits in Part 8.G.4.2.

8.G.3.3 ***Active mining activities*** **–** Activities related to the extraction, removal or recovery, and benefication of metal ore from the earth; removal of overburden and waste rock to expose mineable minerals; and site reclamation and closure activities. All such activities occur within the "active mining area." Reclamation involves activities undertaken, in compliance with applicable mined land reclamation requirements, to return the land to an appropriate post-mining contour and land use in order to meet applicable federal and state reclamation requirements. In addition, once earth-disturbing activities conducted prior to active mining activities have ceased and all related requirements in Part 8.G.4 have been met, and a well-delineated "active mining area" has been established, all activities (including any clearing, grading, and excavation) that occur within the active mining area are "active mining activities."

8.G.3.4 ***Active mining area*** **–** A place where work or other activity related to the extraction, removal or recovery of metal ore is being conducted, except, with respect to surface mines, any area of land on or in which grading has been completed to return the earth to desired contour and reclamation work has begun.

Note: Earth-disturbing activities described in the definition in Part 8.G.3.2 that occur on areas outside the active mining area (e.g., for expansion of the mine into undeveloped territory) are considered "earth-disturbing conducted prior to active mining activities", and must comply with the requirements in Part 8.G.4.

8.G.3.5 ***Inactive metal mining facility*** – A site or portion of a site where metal mining and/or milling occurred in the past but there are no active mining activities occurring as defined above, and where the inactive portion is not covered by an active mining permit issued by the applicable state or federal agency. An inactive metal mining facility has an identifiable owner / operator. Sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials and sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim are not considered either active or inactive mining facilities and do not require an NPDES industrial stormwater permit.

8.G.3.6 ***Temporarily inactive metal mining facility*** **–** A site or portion of a site where metal mining and/or milling occurred in the past but currently are not being actively undertaken, and the facility is covered by an active mining permit issued by the applicable state or federal agency.

8.G.4 Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.

Stormwater discharges from earth-disturbing activities conducted prior to active mining activities (defined in Part 8.G.3.2) are covered under this permit. For such earth-disturbing

activities, you must comply with all applicable requirements in Parts 1-9 of the MSGP except for the technology-based effluent limits in Part 8.G.5 and Part 2.1.2, the inspection requirements in Part 8.G.7 and Part 3, and the monitoring requirements in Part 8.G.8 and Part 6.

Authorized discharges from areas where earth-disturbing activities have ceased and stabilization as specified in Part 8.G.4.1.9 or 8.G.4.2.11, where appropriate, has been completed (stabilization is not required for areas where active mining activities will occur), are no longer subject to the Part 8.G.4 requirements. At such time, authorized discharges become subject to all other applicable requirements in the MSGP, including the effluent limits in Parts 2.1.2 and 8.G.5, the inspection requirements in Parts 3 and 8.G.7, and the monitoring requirements in Parts 6 and 8.G.8.

8.G.4.1 ***Technology-Based Effluent Limits Applicable to All Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*** The following technology-based effluent limits apply to authorized discharges from all earth-disturbing activities conducted prior to active mining activities defined in Part 8.G.3.2(a) and 8.G.3.2(b). These limits supersede the technology-based limits listed in Part 2.1.2 and Part 8.G.5 of the MSGP.

8.G.4.1.1 ***Erosion and sediment control installation requirements.***

- By the time construction activities commence, install and make operational downgradient sediment controls, unless this timeframe is infeasible. If infeasible you must install and make such controls operational as soon as practicable or as soon as site conditions permit.
- All other stormwater controls described in the SWPPP must be installed and made operational as soon as conditions on each portion of the site allows.

8.G.4.1.2 ***Erosion and sediment control maintenance requirements.*** You must:

- Ensure that all erosion and sediment controls remain in effective operating condition.
- Wherever you determine that a stormwater control needs maintenance to continue operating effectively, initiate efforts to fix the problem immediately after its discovery, and complete such work by the end of the next work day.
- When a stormwater control must be replaced or significantly repaired, complete the work within 7 days, unless infeasible. If 7 days is infeasible, you must complete the installation or repair as soon practicable.

8.G.4.1.3 ***Perimeter controls.*** You must:

- Install sediment controls along those perimeter areas of your disturbed area that will receive stormwater, except where site conditions prevent the use of such controls (in which case, maximize their installation to the extent practicable).
- Remove sediment before it accumulates to one-half of the above-ground height of any perimeter control.

8.G.4.1.4 ***Sediment track-out.*** For construction vehicles and equipment exiting the site directly onto paved roads, you must:

- Use appropriate stabilization techniques to minimize sediment track-out from vehicles and equipment prior to exit;
- Use additional controls to remove sediment from vehicle and equipment tires prior to exit, where necessary;
- Remove sediment that is tracked out onto paved roads by end of the work day.

Note: EPA recognizes that some fine grains may remain visible on the surfaces of off-site streets, other paved areas, and sidewalks even after you have implemented sediment removal practices. Such "staining" is not a violation of Part 8.G.4.1.4.

8.G.4.1.5 ***Soil or sediment stockpiles.*** You must:

- Minimize erosion of stockpiles from stormwater and wind via temporary cover, if feasible.
- Prevent up-slope stormwater flows from causing erosion of stockpiles (e.g., by diverting flows around the stockpile).
- Minimize sediment from stormwater that runs off of stockpiles, using sediment controls (e.g., a sediment barrier or downslope sediment control).

8.G.4.1.6 ***Sediment basins.*** If you intend to install a sediment basin to treat stormwater from your earth-disturbing activities, you must:

- Provide storage for either (1) the 2-year, 24-hour storm, or (2) 3,600 cubic feet per acre drained.
- Prevent erosion of (1) basin embankments using stabilization controls (e.g., erosion control blankets), and (2) the inlet and outlet points of the basin using erosion controls and velocity dissipation devices.

8.G.4.1.7 ***Minimize dust.*** You must minimize the generation of dust through the appropriate application of water or other dust suppression techniques that minimize pollutants being discharged into surface waters.

8.G.4.1.8 ***Restrictions on use of treatment chemicals.*** If you intend to use sediment treatment chemicals at your site, you are subject to the following minimum requirements:

- Use conventional erosion and sediment controls prior to and after application of chemicals;
- Select chemicals suited to soil type, and expected turbidity, pH, flow rate;
- Minimize the discharge risk from stored chemicals;
- Comply with state/local requirements;
- Use chemicals in accordance with good engineering practices and specifications of chemical supplier;
- Ensure proper training;
- Provide proper SWPPP documentation.

If you plan to use cationic treatment chemicals (as defined in Appendix A), you are ineligible for coverage under this permit, unless you notify your applicable EPA Regional Office in advance and the EPA Regional Office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards.

8.G.4.1.9 ***Site stabilization requirements for earth-disturbing activities performed for purposes of mine site preparation as defined in 8.G.3.2(a) (i.e., not applicable to construction of staging areas for structures and access roads as defined in 8.G.3.2(b)).*** You must comply with the following stabilization requirements except where the intended function of the site accounts for such disturbed earth (e.g., the earth disturbances will become actively mined, or the controls implemented at the active mining area effectively control the disturbance)

(although you are encouraged to do so within the active mining area, where appropriate):

- *Temporary stabilization of disturbed areas.* Stabilization measures must be initiated immediately in portions of the site where earth-disturbing activities performed for purposes of mine site preparation (as defined in 8.G.3.2(a)) have temporarily ceased, but in no case more than 14 days after such activities have temporarily ceased. In arid, semi-arid, and drought-stricken areas, or in areas subject to snow or freezing conditions, where initiating perennial vegetative stabilization measures is not possible within 14 days after earth-disturbing activities performed for purposes of mine site preparation has temporarily ceased, temporary vegetative stabilization measures must be initiated as soon as practicable. Until temporary vegetative stabilization is achieved, interim measures such as erosion control blankets with an appropriate seed base and tackifiers must be employed. In areas of the site where earth-disturbing activities performed for purposes of mine site preparation have permanently ceased prior to active mining, temporary stabilization measures must be implemented to minimize mobilization of sediment or other pollutants until active mining activities commence.
- *Final stabilization of disturbed areas.* Stabilization measures must be initiated immediately where earth-disturbing activities performed for purposes of mine site preparation (as defined in 8.G.3.2(a)) have permanently ceased, but in no case more than 14 days after the earth-disturbing activities have permanently ceased. In arid, semi-arid, and drought-stricken areas, or in areas subject to snow or freezing conditions, where initiating perennial vegetative stabilization measures is not possible within 14 days after earth-disturbing activities have permanently ceased, final vegetative stabilization measures must be initiated as soon as possible. Until final stabilization is achieved, temporary stabilization measures, such as erosion control blankets with an appropriate seed base and tackifiers, must be used.

8.G.4.2 Additional Technology-Based Effluent Limits Applicable Only to the Construction of Staging Areas for Structures and Access Roads. The following technology-based effluent limits apply to authorized discharges from earth-disturbing activities associated with the construction of staging areas and the construction of access roads, as defined in Part 8.G.3.2(b). These limits supersede the technology-based limits listed in Part 2.1.2 and Part 8.G.5 of the MSGP. These limits do not apply to earth-disturbing activities performed for purposes of mine site preparation (as defined in 8.G.3.2(a)).

8.G.4.2.1 Area of disturbance. You must minimize the amount of soil exposed during construction activities.

8.G.4.2.2 Erosion and sediment control design requirements. You must:

- Design, install and maintain effective erosion and sediment controls to minimize the discharge of pollutants from construction activities. Account for the following factors in designing your erosion and sediment controls:
  - The expected amount, frequency, intensity and duration of precipitation;
  - The nature of stormwater runoff and run-on at the site, including factors such as impervious surfaces, slopes and site drainage features;
  - The range of soil particle sizes expected to be present on the site.

- Direct discharges from your stormwater controls to vegetated areas of your site to increase sediment removal and maximize stormwater infiltration, including any natural buffers, unless infeasible. Use velocity dissipation devices if necessary to prevent erosion when directing stormwater to vegetated areas.
- If any stormwater flow becomes or will be channelized at your site, you must design erosion and sediment controls to control both peak flowrates and total stormwater volume to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points.
- If you install stormwater conveyance channels, they must be designed to avoid unstabilized areas on the site and to reduce erosion, unless infeasible. In addition, you must minimize erosion of channels and their embankments, outlets, adjacent streambanks, slopes, and downstream waters during discharge conditions through the use of erosion controls and velocity dissipation devices within and along the length of any constructed stormwater conveyance channel, and at any outlet to provide a non-erosive flow velocity.

8.G.4.2.3 ***Natural Buffers.*** For any stormwater discharges from construction activities within 50 feet of a water of the U.S., you must comply with one of the following compliance alternatives:

1. Provide a 50-foot undisturbed natural buffer between construction activities and the water of the U.S.; or

2. Provide an undisturbed natural buffer that is less than 50 feet supplemented by additional erosion and sediment controls, which in combination, achieve a sediment load reduction that is equivalent to a 50-foot undisturbed natural buffer; or

3. If it is infeasible to provide an undisturbed natural buffer of any size, implement erosion and sediment controls that achieve a sediment load reduction that is equivalent to a 50-foot undisturbed natural buffer.

There are exceptions when buffer requirements do not apply:

- There is no stormwater discharge from construction disturbances to a water of the U.S;
- The natural buffer has already been eliminated by preexisting development disturbances;
- The disturbance is for the construction of a water-dependent structure or construction approved under a CWA section 404 permit;
- For linear construction projects, you are not required to comply with the requirements if there are site constraints provided that, to the extent feasible, you limit disturbances within 50 feet of a water of the U.S. and/or you provide supplemental erosion and sediment controls to treat stormwater discharges from any disturbances within 50 feet of a water of the U.S.

See http://water.epa.gov/polwaste/npdes/stormwater/upload/cgp2012_appendixg.pdf for guidance on complying with these alternatives.

8.G.4.2.4 ***Soil or sediment stockpiles.*** In addition to the requirements in Part 8.G.4.1.5, you must locate any piles outside of any natural buffers established under Part 8.G.4.2.3.

8.G.4.2.5 ***Sediment basins.*** In addition to the requirements in Part 8.G.4.1.6, you must locate sediment basins outside of any surface waters and any natural buffers established under Part 8.G.4.2.3, and you must utilize outlet structures that withdraw water from the surface, unless infeasible.

8.G.4.2.6 ***Native topsoil preservation.*** You must preserve native topsoil removed during clearing, grading, or excavation, unless infeasible. Store topsoil in a manner that will maximize its use in reclamation or final vegetative stabilization (e.g., by keeping the topsoil stabilized with seed or similar measures). This requirement does not apply if the intended function of the disturbed area dictates that topsoil be disturbed or removed.

8.G.4.2.7 ***Steep slopes.*** You must minimize the disturbance of steep slopes. The permit does not prevent or prohibit disturbance on steep slopes.

Depending on site conditions and needs, disturbance on steep slopes may be necessary (e.g., a road cut in mountainous terrain; for grading steep slopes prior to erecting the mine office). Where steep slope disturbances are necessary, you can minimize the disturbances to steep slopes through the implementation of a number of standard erosion and sediment control practices, such as by phasing disturbances in these areas and using stabilization practices specifically for steep grades.

8.G.4.2.8 ***Soil compaction.*** Where final vegetative stabilization will occur or where infiltration practices will be installed, you must either restrict vehicle/ equipment use in these areas to avoid soil compaction or use soil conditioning techniques to support vegetative growth. Minimizing soil compaction is not required where compacted soil is integral to the functionality of the site.

8.G.4.2.9 ***Dewatering Practices.*** You are prohibited from discharging ground water or accumulated stormwater that is removed from excavations, trenches, foundations, vaults or other similar points of accumulation, unless such waters are first effectively managed by appropriate controls (e.g., sediment basins or sediment traps, sediment socks, dewatering tanks, tube settlers, weir tanks, or filtration systems). Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control.

You must also meet the following requirements for dewatering activities:

- Discharge requirements:
  - No discharging visible floating solids or foam;
  - Remove oil, grease and other pollutants from dewatering water via an oil-water separator or suitable filtration device (such as a cartridge filter);
  - Utilize vegetated upland areas of the site, to the extent feasible, to infiltrate dewatering water before discharge. In no case shall waters of the U.S. be considered part of the treatment area;
  - Implement velocity dissipation devices at all points where dewatering water is discharged;
  - Haul backwash water away for disposal or return it to the beginning of the treatment process; and

- Clean or replace the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.

- Treatment chemical restrictions: If you use polymers, flocculants or other chemicals to treat dewatering water, you must comply with the requirements in Parts 8.G.4.1.8.

8.G.4.2.10 ***Pollution prevention requirements.***

- *Prohibited discharges* (this non-exhaustive list of prohibited non-stormwater discharges is included here as a reminder that only the only allowable non-stormwater discharges are those enumerated in Part 1.1.3):
  - Wastewater from washout of concrete;
  - Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;
  - Fuels, oils, or other pollutants used for operation and maintenance of vehicles or equipment;
  - Soaps, solvents, or detergents used in vehicle or equipment washing;
  - Toxic or hazardous substances from a spill or other release.
- *Design and location requirements:* Minimize the discharge of pollutants from pollutant sources by:
  - Minimizing exposure;
  - Using secondary containment, spill kits, or other equivalent measures;
  - Locating pollution sources away from surface waters, storm sewer inlets, and drainageways;
  - Cleaning up spills immediately (do not clean by hosing area down).
- *Pollution prevention requirements for wash waters:* Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
- *Pollution prevention requirements for the storage, handling, and disposal of construction products, materials, and wastes:* Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to stormwater. Minimization of exposure is not required in cases where the exposure to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

8.G.4.2.11 ***Site Stabilization requirements for the construction of staging areas for structures and access roads as defined in 8.G.3.2(b)*** (i.e., not applicable to earth-disturbing activities performed for purposes of mine site preparation as defined in 8.G.3.2(a)). You must comply with the following stabilization requirements, except where the intended function of the site accounts for such disturbed earth (e.g., the area of construction will become actively mined, or the controls implemented at the active mining area effectively control the disturbance):

- By no later than the end of the next work day after construction work in an area has stopped permanently or temporarily ("temporarily" means the land will be idle for a period of 14 days or more but earth-disturbing activities will resume in the future), immediately initiate stabilization measures;

- If using vegetative measures, by no later than 14 days after initiating stabilization:
  - Seed or plant the area, and provide temporary cover to protect the planted area;
  - Once established, vegetation must be uniform, perennial (if final stabilization), and cover at least 70% of stabilized area based on density of native vegetation.
- If using non-vegetative stabilization, by no later than 14 days after initiating stabilization:
  - Install or apply all non-vegetative measures;
  - Cover all areas of exposed soil.

  Note: For the purposes of this permit, EPA will consider any of the following types of activities to constitute the initiation of stabilization: 1. Prepping the soil for vegetative or non-vegetative stabilization; 2. Applying mulch or other non-vegetative product to the exposed area; 3. Seeding or planting the exposed area; 4. Starting any of the activities in # 1 – 3 on a portion of the area to be stabilized, but not on the entire area; and 5. Finalizing arrangements to have stabilization product fully installed in compliance with the applicable deadline for completing stabilization.

Exceptions:

- Arid, semi-arid (if construction occurs during seasonally dry period), or drought-stricken areas:
  - Within 14 days of stopping construction work in an area, install any necessary non-vegetative stabilization measures;
  - Initiate vegetative stabilization as soon as conditions on the site allow;
  - Document the schedule that will be followed for initiating and completing vegetative stabilization;
  - Plant the area so that within 3 years the 70% cover requirement is met.
- Sites affected by severe storm events or other unforeseen circumstances:
  - Initiate vegetative stabilization as soon conditions on the site allow;
  - Document the schedule that will be followed for initiating and completing vegetative stabilization;
  - Plant the area so that so that within 3 years the 70% cover requirement is met.

8.G.4.3 *Water Quality-Based Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*

The following water quality-based limits apply to earth-disturbing activities conducted prior to active mining activities defined in Part 8.G.3.2(a) and 8.G.3.2(b), in addition to the water quality-based limits in Part 2.2 of the MSGP.

Stricter requirements apply if your site will discharge to an impaired water or a water that is identified by your state, tribe, or EPA as a Tier 2 or Tier 2.5 for antidegradation purposes:

- More rapid stabilization of exposed areas: Complete initial stabilization activities within 7 days of stopping earth-disturbing work.
- More frequent site inspections: Once every 7 days and within 24 hours of a storm event of 0.25 inches or greater.

8.G.4.4 *Inspection Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*

The following requirements supersede the inspection requirements in Part 3 and 8.G.7 of the MSGP for earth-disturbing activities conducted prior to active mining activities defined in Part 8.G.3.2(a) and 8.G.3.2(b).

8.G.4.4.1 *Inspection frequency*

- At least once every 7 calendar days, or
- Once every 14 calendar days and within 24 hours of a storm event of 0.25 inches or greater.

Note:

- Inspections only required during working hours;
- Inspections not required during unsafe conditions; and
- If you choose to inspect once every 14 days, you must have a method for measuring rainfall amount on site (either rain gauge or representative weather station)

Note: To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any day of rainfall during normal business hours that measures 0.25 inches or greater, you must record the total rainfall measured for that day.

Note: You are required to specify in your SWPPP which schedule you will be following.

Note: "Within 24 hours of the occurrence of a storm event" means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if you have elected to inspect bi-weekly and there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

8.G.4.4.2 *Reductions in inspection frequency.*

- Stabilized areas: You may reduce the frequency of inspections to once per month in any area of your site where stabilization has occurred pursuant to Part 8.G.4.1.9 or 8.G.4.2.11.
- Arid, semi-arid, and drought stricken areas: If earth-disturbing activities are occurring during the seasonally dry period or during a period in which drought is predicted to occur, you may reduce inspections to once per month and within 24 hours of a 0.25 inch storm event.
- Frozen conditions: You may temporarily suspend or reduce inspections to once per month until thawing conditions occur if frozen conditions are continuous and disturbed areas have been stabilized. For extreme conditions in remote areas, e.g., where transit to the site is perilous/restricted or temperatures are routinely below freezing, you may suspend inspections until the conditions are conducive to safe access, and more frequent inspections can resume.

8.G.4.4.3 *Areas to be inspected.* You must at a minimum inspect the all of the following areas:

- Disturbed areas;
- Stormwater controls and pollution prevention measures;
- Locations where stabilization measures have been implemented;
- Material, waste, borrow, or equipment storage and maintenance areas;

- Areas where stormwater flows;
- Points of discharge.

8.G.4.4.4 ***What to check for during inspections.*** At a minimum you must check:

- Whether all stormwater controls are installed, operational and working as intended;
- Whether any new or modified stormwater controls are needed;
- For conditions that could lead to a spill or leak;
- For visual signs of erosion/sedimentation at points of discharge.

If a discharge is occurring, check:

- The quality and characteristics of the discharge;
- Whether controls are operating effectively.

8.G.4.4.5 ***Inspection report.*** Within 24 hours of an inspection, complete a report that includes:

- Inspection date;
- Name and title of inspector(s);
- Summary of inspection findings;
- Rainfall amount that triggered the inspection (if applicable);
- If it was unsafe to inspect a portion of the site, include documentation of the reason and the location(s);
- Each inspection report must be signed;
- Keep a current copy of all reports at the site or at an easily accessible location.

8.G.5 Technology-Based Effluent Limits for Active Mining Activities.

Note: These requirements do not apply for any discharges from earth-disturbing activities conducted prior to active mining as defined in 8.G.3.2(a) or 8.G.3.2(b).

8.G.5.1 ***Employee training.*** (See also Part 2.1.2.8) Conduct employee training at least annually at active and temporarily inactive facilities.

8.G.5.2 ***Stormwater controls.*** Apart from the control measures you implement to meet your Part 2 technology-based effluent limits, where necessary to minimize pollutant discharges in stormwater, implement the following control measures at your site. The potential pollutants identified in Part 8.G.6.3 shall determine the priority and appropriateness of the control measures selected. For mines subject to dust control requirements under state or county air quality permits, provided the requirements are equivalent, compliance with such air permit dust requirements shall constitute compliance with the dust control effluent limit in Part 2.1.2.10.

Stormwater diversions: Divert stormwater away from potential pollutant sources through implementation of control measures such as the following, where determined to be feasible (list not exclusive): interceptor or diversion controls (e.g., dikes, swales, curbs, berms); pipe slope drains; subsurface drains; conveyance systems (e.g., channels or gutters, open-top box culverts, and waterbars; rolling dips and road sloping; roadway surface water deflector and culverts); or their equivalents.

Capping: When capping is necessary to minimize pollutant discharges in stormwater, identify the source being capped and the material used to construct the cap.

Treatment: If treatment of stormwater (e.g., chemical or physical systems, oil - water separators, artificial wetlands) is necessary to protect water quality, describe the type and location of treatment used. Passive and/or active treatment of stormwater runoff is encouraged, where feasible. Treated runoff may be discharged as a stormwater

source regulated under this permit provided the discharge is not combined with discharges subject to effluent limitation guidelines for the Ore Mining and Dressing Point Source Category (40 CFR Part 440).

8.G.5.3 ***Discharge testing.*** (See also Part 5.2.3.4) Test or evaluate all outfalls covered under this permit for the presence of specific mining-related but unauthorized non-stormwater discharges such as seeps or adit discharges, or discharges subject to effluent limitations guidelines (e.g., 40 CFR Part 440), such as mine drainage or process water. Alternatively (if applicable), you may keep a certification with your SWPPP consistent with Part 8.G.6.6.

8.G.6 Additional SWPPP Requirements for Mining Operations.

Note: The requirements in Part 8.G.6 are not applicable to inactive metal mining facilities.

8.G.6.1 ***Nature of industrial activities.*** (See also Part 5.2.2) Briefly document in your SWPPP the mining and associated activities that can potentially affect the stormwater discharges covered by this permit, including a general description of the location of the site relative to major transportation routes and communities.

8.G.6.2 ***Site map.*** (See also Part 5.2.2) Document in your SWPPP the locations of the following (as appropriate): mining or milling site boundaries; access and haul roads; outline of the drainage areas of each stormwater outfall within the facility with indications of the types of discharges from the drainage areas; location(s) of all permitted discharges covered under an individual NPDES permit; outdoor equipment storage, fueling, and maintenance areas; materials handling areas; outdoor manufacturing, outdoor storage, and material disposal areas; outdoor chemicals and explosives storage areas; overburden, materials, soils, or waste storage areas; location of mine drainage (where water leaves mine) or other process water; tailings piles and ponds (including proposed ones); heap leach pads; off-site points of discharge for mine drainage and process water; surface waters; boundary of tributary areas that are subject to effluent limitations guidelines; and location(s) of reclaimed areas.

8.G.6.3 ***Potential pollutant sources.*** (See also Part 5.2.3) For each area of the mine or mill site where stormwater discharges associated with industrial activities occur, identify the types of pollutants (e.g., heavy metals, sediment) likely to be present in significant amounts. Consider these factors: the mineralogy of the ore and waste rock (e.g., acid forming); toxicity and quantity of chemicals used, produced, or discharged; the likelihood of contact with stormwater; vegetation of site (if any); and history of significant leaks or spills of toxic or hazardous pollutants. Also include a summary of any existing ore or waste rock or overburden characterization data and test results for potential generation of acid rock. If any new data is acquired due to changes in ore type being mined, update your SWPPP with this information.

8.G.6.4 ***Documentation of control measures.*** Document all control measures that you implement consistent with Part 8.G.5.2. If control measures are implemented or planned but are not listed in Part 8.G.5.2 (e.g., substituting a less toxic chemical for a more toxic one), include descriptions of them in your SWPPP. If you are in compliance with dust control requirements under state or county air quality permits, you must include (or summarize, as necessary) what the state or county air quality permit dust control requirements are and how you've achieved compliance with them.

8.G.6.5 ***Employee training.*** All employee training(s) must be documented in the SWPPP.

8.G.6.6 ***Certification of permit coverage for commingled non-stormwater discharges.*** If you are able, consistent with Part 8.G.5.3 above, to certify that a particular discharge composed of commingled stormwater and non-stormwater is covered under a separate NPDES permit, and that permit subjects the non-stormwater portion to effluent limitations prior to any commingling, retain such certification with your SWPPP. This certification must identify the non-stormwater discharges, the applicable NPDES permit(s), the effluent limitations placed on the non-stormwater discharge by the permit(s), and the points at which the limitations are applied.

8.G.7 Additional Inspection Requirements. (See also Part 3.1)

Except for earth-disturbing activities conducted prior to active mining activities as defined in Part 8.G.3.2(a) and 8.G.3.2(b), which are subject to Part 8.G.4.4, inspect sites at least quarterly unless adverse weather conditions make the site inaccessible. Sites which discharge to waters designated as Tier 2 or 2.5 or waters which are impaired for sediment or nitrogen must be inspected monthly. See Part 8.G.8.4 for inspection requirements for inactive and unstaffed sites.

8.G.8 Monitoring and Reporting Requirements. (See also Part 6)
Note: There are no Part 8.G.8 monitoring and reporting or impaired waters monitoring requirements for inactive and unstaffed sites.

8.G.8.1 ***Benchmark Monitoring for Active Copper Ore Mining and Dressing Facilities.*** Table 8.G-1 identifies benchmarks that apply to active copper ore mining and dressing facilities. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.G-1

Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector G1. Active Copper Ore Mining and Dressing Facilities (SIC 1021)	Total Suspended Solids (TSS)	100 mg/L
	Nitrate plus Nitrite Nitrogen	0.68 mg/L
	Chemical Oxygen Demand (COD)	120 mg/L

8.G.8.2 ***Benchmark Monitoring Requirements for Discharges From Waste Rock and Overburden Piles at Active Metal Mining Facilities.*** For discharges from waste rock and overburden piles, perform benchmark monitoring once in the first year for the parameters listed in Table 8.G-2, and twice annually in all subsequent years of coverage under this permit for any parameters for which the benchmark has been exceeded. You are also required to conduct analytic monitoring for the parameters listed in Table 8.G-3 in accordance with the requirements in Part 8.G.8.3. The Director may also notify you that you must perform additional monitoring to accurately characterize the quality and quantity of pollutants discharged from your waste rock and overburden piles.

Table 8.G-2.		
Subsector (Discharges may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector G2. Iron Ores; Copper Ores; Lead and Zinc Ores; Gold and Silver Ores; Ferroalloy Ores, Except Vanadium; and Miscellaneous Metal Ores (SIC Codes 1011, 1021, 1031, 1041, 1044, 1061, 1081, 1094, 1099) (Note: when analyzing hardness for a suite of metals, it is more cost effective to add analysis of calcium and magnesium, and have hardness calculated than to require hardness analysis separately)	Total Suspended Solids (TSS)	100 mg/L
	Turbidity	50 NTU
	pH	6.0-9.0 s.u.
	Hardness (as $CaCO_3$; calc. from Ca, Mg)[2]	no benchmark value
	Total Antimony	0.64 mg/L
	Total Arsenic (freshwater) Total Arsenic (saltwater)[1]	0.15 mg/L 0.069 mg/L
	Total Beryllium	0.13 mg/L
	Total Cadmium (freshwater)[2] Total Cadmium (saltwater)[1]	Hardness Dependent 0.04 mg/L
	Total Copper (freshwater)[2] Total Copper (saltwater)[1]	Hardness Dependent 0.0048 mg/L
	Total Iron	1.0 mg/L
	Total Lead (freshwater)[2] Total Lead (saltwater)[1]	Hardness Dependent 0.21 mg/L
	Total Mercury (freshwater) Total Mercury (saltwater)[1]	0.0014 mg/L 0.0018 mg/L
	Total Nickel (freshwater)[2] Total Nickel (saltwater)[1]	Hardness Dependent 0.074 mg/L
	Total Selenium (freshwater) Total Selenium (saltwater)[1]	0.005 mg/L 0.29 mg/L
	Total Silver (freshwater)[2] Total Silver (saltwater)[1]	Hardness Dependent 0.0019 mg/L
	Total Zinc (freshwater)[2] Total Zinc (saltwater)[1]	Hardness Dependent 0.09 mg/L

[1]Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.

[2] The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 6.2.1.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	Cadmium (mg/L)	Copper (mg/L)	Lead (mg/L)	Nickel (mg/L)	Silver (mg/L)	Zinc (mg/L)
0-24.99 mg/L	0.0005	0.0038	0.014	0.15	0.0007	0.04
25-49.99 mg/L	0.0008	0.0056	0.023	0.20	0.0007	0.05
50-74.99 mg/L	0.0013	0.0090	0.045	0.32	0.0017	0.08
75-99.99 mg/L	0.0018	0.0123	0.069	0.42	0.0030	0.11
100-124.99 mg/L	0.0023	0.0156	0.095	0.52	0.0046	0.13
125-149.99 mg/L	0.0029	0.0189	0.122	0.61	0.0065	0.16
150-174.99 mg/L	0.0034	0.0221	0.151	0.71	0.0087	0.18
175-199.99 mg/L	0.0039	0.0253	0.182	0.80	0.0112	0.20
200-224.99 mg/L	0.0045	0.0285	0.213	0.89	0.0138	0.23
225-249.99 mg/L	0.0050	0.0316	0.246	0.98	0.0168	0.25
250+ mg/L	0.0053	0.0332	0.262	1.02	0.0183	0.26

8.G.8.3 ***Additional Analytic Monitoring Requirements for Discharges From Waste Rock and Overburden Piles at Active Metal Mining Facilities.*** In addition to the monitoring required in Part 8.G.8.2 for discharges from waste rock and overburden piles, you must also conduct monitoring for additional parameters based on the type of ore you mine at your site. Where a parameter in Table 8.G-3 is the same as a pollutant you are required to monitor for in Table 8.G-2 (i.e., for all of the metals), you must use the corresponding benchmark in Table 8.G-2 and you may use any monitoring results conducted for Part 8.G.8.2 to satisfy the monitoring requirement for that parameter for Part 8.G.8.3. For radium and uranium, which do not have corresponding benchmarks in Table 8.G-2, there are no applicable benchmarks. The frequency and schedule for monitoring for these additional parameters is the same as that specified in Part 6.2.1.2.

Table 8.G-3. Additional Monitoring Requirements for Discharges from Waste Rock and Overburden Piles

Supplemental Requirements			
Type of Ore Mined	**Pollutants of Concern**		
	Total Suspended Solids (TSS)	**pH**	**Metals, Total**
Tungsten Ore	X	X	Arsenic, Cadmium (H), Copper (H), Lead (H), Zinc (H)
Nickel Ore	X	X	Arsenic, Cadmium (H), Copper (H), Lead (H), Zinc (H)
Aluminum Ore	X	X	Iron
Mercury Ore	X	X	Nickel (H)
Iron Ore	X	X	Iron (Dissolved)
Platinum Ore			Cadmium (H), Copper (H), Mercury, Lead (H), Zinc (H)
Titanium Ore	X	X	Iron, Nickel (H), Zinc (H)
Vanadium Ore	X	X	Arsenic, Cadmium (H), Copper (H), Lead (H), Zinc (H)
Molybdenum	X	X	Arsenic, Cadmium (H), Copper (H), Lead (H), Mercury, Zinc (H)
Uranium, Radium, and Vanadium Ore	X	X	Chemical Oxygen Demand, Arsenic, Radium (Dissolved and Total), Uranium, Zinc (H)

Note: An "X" indicated for TSS and/or pH means that you are required to monitor for those parameters. (H) indicates that hardness must also be measured when this pollutant is measured.

8.G.8.4 ***Inactive and Unstaffed Sites – Conditional Exemption from No Exposure Requirements for Quarterly Visual Assessments and Routine Facility Inspections.*** As a Sector G facility, if you are seeking to exercise a waiver from the quarterly visual assessment and routine facility inspection requirements for inactive and unstaffed sites (including temporarily inactive sites), you are conditionally exempt from the requirement to certify that "there are no industrial materials or activities exposed to stormwater" in Parts 3.1.1 and 3.2.3. This exemption is conditioned on the following:

- If circumstances change and your facility becomes active and/or staffed, this exception no longer applies and you must immediately begin complying with the quarterly visual assessment requirements; and
- EPA retains the authority to revoke this exemption and/or the monitoring waiver where it is determined that the discharge causes, has a reasonable potential to

cause, or contributes to an instream excursion above an applicable water quality standard, including designated uses.

Subject to the two conditions above, if your facility is inactive and unstaffed, you are waived from the requirement to conduct quarterly visual assessments and routine facility inspections. You must still do an annual site inspection in accordance with Part 3.1. You are encouraged to inspect your site more frequently where you have reason to believe that severe weather or natural disasters may have damaged control measures or increased discharges.

Table 8.G-4. Applicability of the Multi-Sector General Permit to Stormwater Runoff From Active Mining and Dressing Sites, Temporarily Inactive Sites, and Sites Undergoing Reclamation	
Discharge/Source of Discharge	**Note/Comment**
Piles	
Waste rock/overburden	Covered under the MSGP if composed entirely of stormwater and not combined with mine drainage. See note below.
Topsoil	--
Roads constructed of waste rock or spent ore	
Onsite haul roads	Covered under the MSGP if composed entirely of stormwater and not combined with mine drainage. See note below.
Offsite haul and access roads	--
Roads not constructed of waste rock or spent ore	
Onsite haul roads	Covered under the MSGP except if mine drainage is used for dust control.
Offsite haul and access roads	--
Milling/concentrating	
Runoff from tailings dams and dikes when constructed of waste rock/tailings	Covered under the MSGP except if process fluids are present and only if composed entirely of stormwater and not combined with mine drainage. See Note below.
Runoff from tailings dams/dikes when not constructed of waste rock and tailings	Covered under the MSGP except if process fluids are present.
Concentration building	Covered under the MSGP if stormwater only and no contact with piles.
Mill site	If stormwater only and no contact with piles.
Ancillary areas	
Office and administrative building and housing	Covered under the MSGP if mixed with stormwater from the industrial area.
Chemical storage area	--
Docking facility	Covered under the MSGP except if excessive contact with waste product that would otherwise constitute mine drainage.
Explosive storage	--
Fuel storage (oil tanks/coal piles)	--
Vehicle and equipment maintenance area/building	--
Parking areas	Covered under the MSGP but coverage unnecessary if only employee and visitor-type parking.

Table 8.G-4. Applicability of the Multi-Sector General Permit to Stormwater Runoff From Active Mining and Dressing Sites, Temporarily Inactive Sites, and Sites Undergoing Reclamation	
Discharge/Source of Discharge	**Note/Comment**
Power plant	
Truck wash area	Covered under the MSGP except when excessive contact with waste product that would otherwise constitute mine drainage.
Reclamation-related areas	
Any disturbed area (unreclaimed)	Covered under the MSGP only if not in active mining area.
Reclaimed areas released from reclamation requirements prior to Dec. 17, 1990	--
Partially/inadequately reclaimed areas or areas not released from reclamation requirements	--

Note: Stormwater runoff from these sources are subject to the NPDES program for stormwater unless mixed with discharges subject to 40 CFR Part 440 that are regulated by another permit prior to mixing. Non-stormwater discharges from these sources are subject to NPDES permitting and may be subject to the effluent limitation guidelines under 40 CFR Part 440. Discharges from overburden/waste rock and overburden/waste rock-related areas are not subject to 40 CFR Part 440 unless: (1) it drains naturally (or is intentionally diverted) to a point source; and (2) combines with "mine drainage" that is otherwise regulated under the Part 440 regulations. For such sources, coverage under this permit would be available if the discharge composed entirely of stormwater does not combine with other sources of mine drainage that are not subject to 40 CFR Part 440, as well as meeting other eligibility criteria contained in Part 1.1 of the permit. Operators bear the initial responsibility for determining the applicable technology-based standard for such discharges. EPA recommends that operators contact the relevant NPDES permit issuance authority for assistance to determine the nature and scope of the "active mining area" on a mine-by-mine basis, as well as to determine the appropriate permitting mechanism for authorizing such discharges.

8.G.9. Termination of Permit Coverage

8.G.9.1 ***Termination of Permit Coverage for Sites Reclaimed After December 17, 1990.*** A site or a portion of a site that has been released from applicable state or federal reclamation requirements after December 17, 1990, is no longer required to maintain coverage under this permit. If the site or portion of a site reclaimed after December 17, 1990, was not subject to reclamation requirements, the site or portion of the site is no longer required to maintain coverage under this permit if the site or portion of the site has been reclaimed as defined in Part 8.G.3.3.

8.G.9.2 ***Termination of Permit Coverage for Sites Reclaimed Before December 17, 1990.*** A site or portion of a site that was released from applicable state or federal reclamation requirements before December 17, 1990, or that was otherwise reclaimed before December 17, 1990, is no longer required to maintain coverage under this permit if the site or portion of the site has been reclaimed. A site or portion of a site is considered to have been reclaimed if: (1) stormwater runoff that comes into contact with raw materials, intermediate byproducts, finished products, and waste products does not have the potential to cause or contribute to violations of state water quality standards, (2) soil disturbing activities related to mining at the sites or portion of the site have been completed, (3) the site or portion of the site has been stabilized to minimize soil erosion, and (4) as appropriate depending on location, size, and the potential to contribute pollutants to stormwater discharges, the site or portion of the site has been revegetated, will be amenable to natural revegetation, or will be left in a condition consistent with the post-mining land use.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart H – Sector H – Coal Mines and Coal Mining-Related Facilities.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

Note: Where compliance with a requirement in a separate exploration permit, mining permit, reclamation plan, Surface Mining Control and Reclamation Act (SMCRA) requirements, etc. will result in you fully meeting any requirement in this Subpart, you are considered to have complied with the relevant requirement in this Subpart. You must include documentation in your SWPPP describing your rationale for concluding that any particular action on your part is sufficient to comply with the corresponding requirement in this Subpart.

8.H.1 Covered Stormwater Discharges.

The requirements in Subpart H apply to stormwater discharges associated with industrial activity from Coal Mines and Coal Mining-Related facilities as identified by the SIC Codes specified under Sector H in Table D-1 of Appendix D.

8.H.2 Limitations on Coverage.

8.H.2.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.4) Not covered by this permit: discharges from pollutant seeps or underground drainage from inactive coal mines and refuse disposal areas that do not result from precipitation events, and discharges from floor drains in maintenance buildings and other similar drains in mining and preparation plant areas. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.1.3).

8.H.2.2 ***Discharges Subject to Stormwater Effluent Guidelines.*** (See also Part 1.1.2.4) Not authorized by this permit: stormwater discharges subject to an existing effluent limitation guideline at 40 CFR Part 434.

8.H.3 Definitions

The following definitions are not intended to supersede the definitions of active and inactive mining facilities established by 40 CFR 122.26(b)(14)(iii).

8.H.3.1 ***Mining operations*** - For this permit, mining operations are grouped into two distinct categories, with distinct effluent limits and requirements applicable to each: a) earth-disturbing activities conducted prior to active mining activities); and b) active mining activities, which includes reclamation. "Mining operations" can occur at both inactive mining facilities and temporarily inactive mining facilities.

8.H.3.2 ***Earth-disturbing activities conducted prior to active mining activities*** – Consists of two classes of earth-disturbing (i.e., clearing, grading and excavation) activities:

a. activities performed for purposes of mine site preparation, including: cutting new rights of way (except when related to access road construction); providing access to a mine site for vehicles and equipment (except when related to access road construction); other earth disturbances associated with site preparation activities on any areas where active mining activities have not yet commenced (e.g., for heap leach pads, waste rock facilities, tailings impoundments, wastewater treatment plants); and

b. construction of staging areas to prepare for erecting structures such as to house project personnel and equipment, mill buildings, etc., and construction of access roads. Earth-disturbing activities associated with the construction of staging areas and the construction of access roads conducted prior to active mining are considered to be "construction" and have additional effluent limits in Part 8.H.4.2.

8.H.3.3 ***Active mining activities*** *– Activities related to the extraction, removal or recovery, and preparation of coal; removal of overburden and waste rock to expose mineable minerals; and site reclamation and closure activities. All such activities occur within the "active mining area." Reclamation involves activities undertaken, in compliance with applicable mined land reclamation requirements, to return the land to an appropriate post-mining contour and land use in order to meet applicable federal and state reclamation requirements. In addition, once earth-disturbing activities conducted prior to active mining activities have ceased and all related requirements in Part 8.H.4 have been met, and a well-delineated "active mining area" has been established, all activities (including any clearing, grading, and excavation) that occur within the active mining area are "active mining activities."*

8.H.3.4 ***Active mining area*** *– A place where work or other activity related to the extraction, removal or recovery of coal is being conducted, except, with respect to surface mines, any area of land on or in which grading has been completed to return the earth to desired contour and reclamation work has begun.*

Note: Earth-disturbing activities described in the definition in Part 8.H.3.2 that occur on areas outside the active mining area (e.g., for expansion of the mine into undeveloped territory) are considered "earth-disturbing conducted prior to active mining activities", and must comply with the requirements in Part 8.H.4.

8.H.3.5 ***Inactive coal mining facility*** – A site or portion of a site where coal mining and/or milling occurred in the past but there are no active mining operations occurring as defined above, and where the inactive portion is not covered by an active mining permit issued by the applicable state or federal agency. An inactive coal mining facility has an identifiable owner / operator. Sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials and sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim are not considered either active or inactive mining facilities and do not require an NPDES industrial stormwater permit.

8.H.3.6 ***Temporarily inactive coal mining facility*** – A site or portion of a site where coal mining and/or milling occurred in the past but currently are not being actively undertaken, and the facility is covered by an active mining permit issued by the applicable state or federal agency.

8.H.4 Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.

Stormwater discharges from earth-disturbing activities conducted prior to active mining activities (defined in Part 8.H.3.2) are covered under this permit. For such earth-disturbing activities, you must comply with all applicable requirements in Parts 1-9 of the MSGP except for the technology-based effluent limits in Part 8.H.5 and Part 2.1.2, the inspection requirements in Part 8.H.7 and Part 3, and the monitoring requirements in Part 8.H.8 and Part 6.

Authorized discharges from areas where earth-disturbing activities have ceased and stabilization as specified in Part 8.H.4.19 or 8.H.4.2.11, where appropriate, has been completed (stabilization is not required for areas where active mining activities will occur), are no longer subject to the Part 8.H.4 requirements. At such time, authorized discharges become subject to all

other applicable requirements in the MSGP, including the effluent limits in Parts 2.1.2 and 8.H.5, the inspection requirements in Parts 3 and 8.H.7, and the monitoring requirements in Parts 6 and 8.H.8.

8.H.4.1 Technology-Based Effluent Limits Applicable to All Earth-Disturbing Activities Conducted Prior to Active Mining Activities. The following technology-based effluent limits apply to authorized discharges from all earth-disturbing activities conducted prior to active mining activities defined in Part 8.H.3.2(a) and 8.H.3.2(b). These limits supersede the technology-based limits listed in Part 2.1.2 and Part 8.H.5 of the MSGP.

8.H.4.1.1 ***Erosion and sediment control installation requirements.***

- By the time construction activities commence, install and make operational downgradient sediment controls, unless this timeframe is infeasible. If infeasible you must install and make such controls operational as soon as practicable or as soon as site conditions permit.
- All other stormwater controls described in the SWPPP must be installed and made operational as soon as conditions on each portion of the site allows.

8.H.4.1.2 ***Erosion and sediment control maintenance requirements.*** You must:

- Ensure that all erosion and sediment controls remain in effective operating condition.
- Wherever you determine that a stormwater control needs maintenance to continue operating effectively, initiate efforts to fix the problem immediately after its discovery, and complete such work by the end of the next work day.
- When a stormwater control must be replaced or significantly repaired, complete the work within 7 days, unless infeasible. If 7 days is infeasible, you must complete the installation or repair as soon practicable.

8.H.4.1.3 ***Perimeter controls.*** You must:

- Install sediment controls along those perimeter areas of your disturbed area that will receive stormwater, except where site conditions prevent the use of such controls (in which case, maximize their installation to the extent practicable).
- Remove sediment before it accumulates to one-half of the above-ground height of any perimeter control.

8.H.4.1.4 ***Sediment track-out.*** For construction vehicles and equipment exiting the site directly onto paved roads, you must:

- Use appropriate stabilization techniques to minimize sediment track-out from vehicles and equipment prior to exit;
- Use additional controls to remove sediment from vehicle and equipment tires prior to exit, where necessary;
- Remove sediment that is tracked out onto paved roads by end of the work day.

Note: EPA recognizes that some fine grains may remain visible on the surfaces of off-site streets, other paved areas, and sidewalks even after you have implemented sediment removal practices. Such "staining" is not a violation of Part 8.H.4.1.4.

8.H.4.1.5 Soil or sediment stockpiles. You must:

- Minimize erosion of stockpiles from stormwater and wind via temporary cover, if feasible.

- Prevent up-slope stormwater flows from causing erosion of stockpiles (e.g., by diverting flows around the stockpile).
- Minimize sediment from stormwater that runs off of stockpiles, using sediment controls (e.g., a sediment barrier or downslope sediment control).

8.H.4.1.6 ***Sediment basins.*** If you intend to install a sediment basin to treat stormwater from your earth-disturbing activities, you must:

- Provide storage for either (1) the 2-year, 24-hour storm, or (2) 3,600 cubic feet per acre drained.
- Prevent erosion of (1) basin embankments using stabilization controls (e.g., erosion control blankets), and (2) the inlet and outlet points of the basin using erosion controls and velocity dissipation devices.

8.H.4.1.7 ***Minimize dust.*** You must minimize the generation of dust through the appropriate application of water or other dust suppression techniques that minimize pollutants being discharged into surface waters.

8.H.4.1.8 ***Restrictions on use of treatment chemicals.*** If you intend to use sediment treatment chemicals at your site, you are subject to the following minimum requirements:

- Use conventional erosion and sediment controls prior to and after application of chemicals;
- Select chemicals suited to soil type, and expected turbidity, pH, flow rate;
- Minimize the discharge risk from stored chemicals;
- Comply with state/local requirements;
- Use chemicals in accordance with good engineering practices and specifications of chemical supplier;
- Ensure proper training;
- Provide proper SWPPP documentation.

If you plan to use cationic treatment chemicals (as defined in Appendix A), you are ineligible for coverage under this permit, unless you notify your applicable EPA Regional Office in advance and the EPA Regional Office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards.

8.H.4.1.9 ***Site stabilization requirements for earth-disturbing activities performed for purposes of mine site preparation as defined in 8.H.3.2(a)*** (i.e., not applicable to construction of staging areas for structures and access roads as defined in 8.H.3.2(b)). You must comply with the following stabilization requirements except where the intended function of the site accounts for such disturbed earth (e.g., the earth disturbances will become actively mined, or the controls implemented at the active mining area effectively control the disturbance):

- *Temporary stabilization of disturbed areas.* Stabilization measures must be initiated immediately in portions of the site where earth-disturbing activities performed for purposes of mine site preparation (as defined in 8.H.3.2(a)) have temporarily ceased, but in no case more than 14 days after such activities have temporarily ceased. In arid, semi-arid, and drought-stricken areas, or in areas subject to snow or freezing conditions, where initiating perennial vegetative stabilization measures is not possible within 14 days after earth-disturbing activities performed for purposes of mine site preparation has temporarily ceased, temporary vegetative

stabilization measures must be initiated as soon as practicable. Until temporary vegetative stabilization is achieved, interim measures such as erosion control blankets with an appropriate seed base and tackifiers must be employed. In areas of the site where earth-disturbing activities performed for purposes of mine site preparation have permanently ceased prior to active mining, temporary stabilization measures must be implemented to minimize mobilization of sediment or other pollutants until active mining activities commence.

- *Final stabilization of disturbed areas.* Stabilization measures must be initiated immediately where earth-disturbing activities performed for purposes of mine site preparation (as defined in 8.H.3.2(a)) have permanently ceased, but in no case more than 14 days after the earth-disturbing activities have permanently ceased. In arid, semi-arid, and drought-stricken areas, or in areas subject to snow or freezing conditions, where initiating perennial vegetative stabilization measures is not possible within 14 days after earth-disturbing activities have permanently ceased, final vegetative stabilization measures must be initiated as soon as possible. Until final stabilization is achieved, temporary stabilization measures, such as erosion control blankets with an appropriate seed base and tackifiers, must be used.

8.H.4.2 ***Additional Technology-Based Effluent Limits Applicable Only to the Construction of Staging Areas for Structures and Access Roads.*** The following technology-based effluent limits apply to authorized discharges from earth-disturbing activities associated with the construction of staging areas and the construction of access roads, as defined in Part 8.H.3.2(b). These limits supersede the technology-based limits listed in Part 2.1.2 and Part 8.H.5 of the MSGP. These limits do not apply to earth-disturbing activities performed for purposes of mine site preparation (as defined in 8.H.3.2(a)).

8.H.4.2.1 ***Area of disturbance.*** You must minimize the amount of soil exposed during construction activities.

8.H.4.2.2 ***Erosion and sediment control design requirements.*** You must:

- Design, install and maintain effective erosion and sediment controls to minimize the discharge of pollutants from construction activities. Account for the following factors in designing your erosion and sediment controls:
  - The expected amount, frequency, intensity and duration of precipitation;
  - The nature of stormwater runoff and run-on at the site, including factors such as impervious surfaces, slopes and site drainage features;
  - The range of soil particle sizes expected to be present on the site.
- Direct discharges from your stormwater controls to vegetated areas of your site to increase sediment removal and maximize stormwater infiltration, including any natural buffers, unless infeasible. Use velocity dissipation devices if necessary to prevent erosion when directing stormwater to vegetated areas.
- If any stormwater flow becomes or will be channelized at your site, you must design erosion and sediment controls to control both peak flowrates and total stormwater volume to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points.
- If you install stormwater conveyance channels, they must be designed to avoid unstabilized areas on the site and to reduce erosion, unless infeasible. In addition, you must minimize erosion of channels and their embankments, outlets, adjacent streambanks, slopes, and downstream

waters during discharge conditions through the use of erosion controls and velocity dissipation devices within and along the length of any constructed stormwater conveyance channel, and at any outlet to provide a non-erosive flow velocity.

8.H.4.2.3 ***Natural Buffers.*** For any stormwater discharges from construction activities within 50 feet of a water of the U.S., you must comply with one of the following compliance alternatives:

1. Provide a 50-foot undisturbed natural buffer between construction activities and the water of the U.S.; or

2. Provide an undisturbed natural buffer that is less than 50 feet supplemented by additional erosion and sediment controls, which in combination, achieve a sediment load reduction that is equivalent to a 50-foot undisturbed natural buffer; or

3. If it is infeasible to provide an undisturbed natural buffer of any size, implement erosion and sediment controls that achieve a sediment load reduction that is equivalent to a 50-foot undisturbed natural buffer.

There are exceptions when buffer requirements do not apply:

- There is no stormwater discharge from construction disturbances to a water of the U.S;
- The natural buffer has already been eliminated by preexisting development disturbances;
- The disturbance is for the construction of a water-dependent structure or construction approved under a CWA section 404 permit;
- For linear construction projects, you are not required to comply with the requirements if there are site constraints provided that, to the extent feasible, you limit disturbances within 50 feet of a water of the U.S. and/or you provide supplemental erosion and sediment controls to treat stormwater discharges from any disturbances within 50 feet of a water of the U.S.

See http://water.epa.gov/polwaste/npdes/stormwater/upload/cgp2012_appendixg.pdf for guidance on complying with these alternatives.

8.H.4.2.4 ***Soil or sediment stockpiles.*** In addition to the requirements in Part 8.H.4.1.5, you must locate any piles outside of any natural buffers established under Part 8.H.4.2.3.

8.H.4.2.5 ***Sediment basins.*** In addition to the requirements in Part 8.H.4.1.6, you must locate sediment basins outside of any surface waters and any natural buffers established under Part 8.H.4.2.3, and you must utilize outlet structures that withdraw water from the surface, unless infeasible.

8.H.4.2.6 ***Native topsoil preservation.*** You must preserve native topsoil removed during clearing, grading, or excavation, unless infeasible. Store topsoil in a manner that will maximize its use in reclamation or final vegetative stabilization (e.g., by keeping the topsoil stabilized with seed or similar measures). This requirement does not apply if the intended function of the disturbed area dictates that topsoil be disturbed or removed.

8.H.4.2.7 ***Steep slopes.*** You must minimize the disturbance of steep slopes. The permit does not prevent or prohibit disturbance on steep slopes.

Depending on site conditions and needs, disturbance on steep slopes may be necessary (e.g., a road cut in mountainous terrain; for grading steep slopes prior to erecting the mine office). Where steep slope disturbances are necessary, you can minimize the disturbances to steep slopes through the implementation of a number of standard erosion and sediment control practices, such as by phasing disturbances in these areas and using stabilization practices specifically for steep grades.

8.H.4.2.8 ***Soil compaction.*** Where final vegetative stabilization will occur or where infiltration practices will be installed, you must either restrict vehicle/ equipment use in these areas to avoid soil compaction or use soil conditioning techniques to support vegetative growth. Minimizing soil compaction is not required where compacted soil is integral to the functionality of the site.

8.H.4.2.9 ***Dewatering Practices.*** You are prohibited from discharging ground water or accumulated stormwater that is removed from excavations, trenches, foundations, vaults or other similar points of accumulation, unless such waters are first effectively managed by appropriate controls (e.g., sediment basins or sediment traps, sediment socks, dewatering tanks, tube settlers, weir tanks, or filtration systems). Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control.

You must also meet the following requirements for dewatering activities:

- Discharge requirements:
  - No discharging visible floating solids or foam;
  - Remove oil, grease and other pollutants from dewatering water via an oil-water separator or suitable filtration device (such as a cartridge filter);
  - Utilize vegetated upland areas of the site, to the extent feasible, to infiltrate dewatering water before discharge. In no case shall waters of the U.S. be considered part of the treatment area;
  - Implement velocity dissipation devices at all points where dewatering water is discharged;
  - Haul backwash water away for disposal or return it to the beginning of the treatment process; and
  - Clean or replace the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.
- Treatment chemical restrictions: If you use polymers, flocculants or other chemicals to treat dewatering water, you must comply with the requirements in Parts 8.H.4.1.8.

8.H.4.2.10 ***Pollution prevention requirements.***

- *Prohibited discharges* (this non-exhaustive list of prohibited non-stormwater discharges is included here as a reminder that only the only allowable non-stormwater discharges are those enumerated in Part 1.1.3):
  - Wastewater from washout of concrete;
  - Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;
  - Fuels, oils, or other pollutants used for operation and maintenance of vehicles or equipment;

- Soaps, solvents, or detergents used in vehicle or equipment washing;
- Toxic or hazardous substances from a spill or other release.

- *Design and location requirements:* Minimize the discharge of pollutants from pollutant sources by:
  - Minimizing exposure;
  - Using secondary containment, spill kits, or other equivalent measures;
  - Locating pollution sources away from surface waters, storm sewer inlets, and drainageways;
  - Cleaning up spills immediately (do not clean by hosing area down).
- *Pollution prevention requirements for wash waters:* Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
- *Pollution prevention requirements for the storage, handling, and disposal of construction products, materials, and wastes:* Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to stormwater. Minimization of exposure is not required in cases where the exposure to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

8.H.4.2.11 ***Site Stabilization requirements for the construction of staging areas for structures and access roads as defined in 8.H.3.2(b)*** *(i.e., not applicable to earth-disturbing activities performed for purposes of mine site preparation as defined in 8.H.3.2(a)).* You must comply with the following stabilization requirements, except where the intended function of the site accounts for such disturbed earth (e.g., the area of construction will become actively mined, or the controls implemented at the active mining area effectively control the disturbance):

- By no later than the end of the next work day after construction work in an area has stopped permanently or temporarily ("temporarily" means the land will be idle for a period of 14 days or more but earth-disturbing activities will resume in the future), immediately initiate stabilization measures;
- If using vegetative measures, by no later than 14 days after initiating stabilization:
  - Seed or plant the area, and provide temporary cover to protect the planted area;
  - Once established, vegetation must be uniform, perennial (if final stabilization), and cover at least 70% of stabilized area based on density of native vegetation.
- If using non-vegetative stabilization, by no later than 14 days after initiating stabilization:
  - Install or apply all non-vegetative measures;
  - Cover all areas of exposed soil.

  Note: For the purposes of this permit, EPA will consider any of the following types of activities to constitute the initiation of stabilization: 1. Prepping the soil for vegetative or non-vegetative stabilization; 2. Applying mulch or other non-vegetative product to the exposed area; 3. Seeding or planting

the exposed area; 4. Starting any of the activities in # 1 – 3 on a portion of the area to be stabilized, but not on the entire area; and 5. Finalizing arrangements to have stabilization product fully installed in compliance with the applicable deadline for completing stabilization.

Exceptions:

- Arid, semi-arid (if construction occurs during seasonally dry period), or drought-stricken areas:
  - Within 14 days of stopping construction work in an area, install any necessary non-vegetative stabilization measures;
  - Initiate vegetative stabilization as soon as conditions on the site allow;
  - Document the schedule that will be followed for initiating and completing vegetative stabilization;
  - Plant the area so that within 3 years the 70% cover requirement is met.
- Sites affected by severe storm events or other unforeseen circumstances:
  - Initiate vegetative stabilization as soon conditions on the site allow;
  - Document the schedule that will be followed for initiating and completing vegetative stabilization;
  - Plant the area so that so that within 3 years the 70% cover requirement is met.

8.H.4.3 ***Water Quality-Based Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.***

The following water quality-based limits apply to earth-disturbing activities conducted prior to active mining activities defined in Part 8.H.3.2(a) and 8.H.3.2(b), in addition to the water quality-based limits in Part 2.2 of the MSGP.

Stricter requirements apply if your site will discharge to an impaired water or a water that is identified by your state, tribe, or EPA as a Tier 2 or Tier 2.5 for antidegradation purposes:

- More rapid stabilization of exposed areas: Complete initial stabilization activities within 7 days of stopping earth-disturbing work.
- More frequent site inspections: Once every 7 days and within 24 hours of a storm event of 0.25 inches or greater.

8.H.4.4 ***Inspection Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.***

The following requirements supersede the inspections requirements in Part 3 and 8.H.7 of the MSGP for earth-disturbing activities conducted prior to active mining activities defined in Part 8.H.3.2(a) and 8.H.3.2(b).

8.H.4.4.1 ***Inspection Frequency***

- At least once every 7 calendar days, or
- Once every 14 calendar days and within 24 hours of a storm event of 0.25 inches or greater.

Note:

- Inspections only required during working hours;
- Inspections not required during unsafe conditions; and
- If you choose to inspect once every 14 days, you must have a method for measuring rainfall amount on site (either rain gauge or representative weather station)

Note: To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any

day of rainfall during normal business hours that measures 0.25 inches or greater, you must record the total rainfall measured for that.

Note: You are required to specify in your SWPPP which schedule you will be following.

Note: "Within 24 hours of the occurrence of a storm event" means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if you have elected to inspect bi-weekly in and there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

8.H.4.4.2 ***Reductions in Inspection Frequency***

- Stabilized areas: You may reduce the frequency of inspections to once per month in any area of your site where stabilization has occurred pursuant to Part 8.H.4.1.9 or 8.H.4.2.11.
- Arid, semi-arid, and drought stricken areas: If earth-disturbing activities are occurring during the seasonally dry period or during a period in which drought is predicted to occur, you may reduce inspections to once per month and within 24 hours of a 0.25 inch storm event.
- Frozen conditions: You may temporarily suspend or reduce inspections to once per month until thawing conditions occur if frozen conditions are continuous and disturbed areas have been stabilized. For extreme conditions in remote areas, e.g., where transit to the site is perilous/restricted or temperatures are routinely below freezing, you may suspend inspections until the conditions are conducive to safe access, and more frequent inspections can resume.

8.H.4.4.3 ***Areas to be Inspected.*** You must at a minimum inspect the following areas:

- Disturbed areas;
- Stormwater controls and pollution prevention measures;
- Locations where stabilization measures have been implemented;
- Material, waste, borrow, or equipment storage and maintenance areas;
- Areas where stormwater flows;
- Points of discharge.

8.H.4.4.4 ***What to Check for During Inspections.*** At a minimum you must check:

- Whether all stormwater controls are installed, operational, and working as intended;
- Whether any new or modified stormwater controls are needed;
- For conditions that could lead to a spill or leak;
- For visual signs of erosion/sedimentation at points of discharge.

If a discharge is occurring:

- The quality and characteristics of the discharge;
- Whether controls are operating effectively.

8.H.4.4.5 ***Inspection Report.*** Within 24 hours of an inspection, complete a report that includes:

- Inspection date;
- Name and title of inspector(s);
- Summary of inspection findings;
- Rainfall amount that triggered the inspection (if applicable);
- If it was unsafe to inspect a portion of the site, include documentation of the reason and the location(s);

- Each inspection report must be signed;
- Keep a current copy of all reports at the site or at an easily accessible location.

8.H.4.5 ***Cessation of Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*** The requirements in 8.H.4 no longer apply for any earth-disturbing activities conducted prior to active mining activities as defined in 8.H.3.2(a) or 8.H.3.2(b) where:

1. Earth-disturbing activities have ceased; and
2. Stabilization has been met consistent with Part 8.H.4.1.9 or 8.H.4.2.11 (not required for areas where active mining activities will occur).

8.H.5 Technology-Based Effluent Limits for Active Mining Activities.

Note: These requirements do not apply for any discharges from earth-disturbing activities conducted prior to active mining as defined in 8.H.3.2(a) or 8.H.3.2(b).

8.H.5.1 ***Good Housekeeping Measures.*** (See also Part 2.1.2.2) As part of your good housekeeping program, in order to minimize discharges of pollutants in stormwater, implement control measures such as the following, where determined to be feasible (list not inclusive): using sweepers and covered storage; watering haul roads to minimize dust generation; and conserving vegetation to minimize erosion. For mines subject to dust control requirements under state or county air quality permits, provided the requirements are equivalent, compliance with such air permit dust requirements shall constitute compliance with the dust control effluent limit in Part 2.1.2.10.

8.H.5.2 ***Preventive Maintenance.*** (See also Part 2.1.2.3) Perform inspections or other equivalent measures of storage tanks and pressure lines of fuels, lubricants, hydraulic fluid, and slurry to prevent leaks due to deterioration or faulty connections.

8.H.6 Additional SWPPP Requirements for Mining Operations.

Note: The requirements in Part 8.H.6 are not applicable to inactive coal mining facilities.

8.H.6.1 ***Other Applicable Regulations.*** Most active coal mining-related areas (SIC Codes 1221-1241) are subject to sediment and erosion control regulations of the U.S. Office of Surface Mining (OSM) that enforces the Surface Mining Control and Reclamation Act (SMCRA). OSM has granted authority to most coal-producing states to implement SMCRA through State SMCRA regulations. All SMCRA requirements regarding control of stormwater-related pollutant discharges must be addressed and then documented with the SWPPP (directly or by reference).

8.H.6.2 ***Site Map.*** (See also Part 5.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or surface runoff: haul and access roads; railroad spurs, sliding, and internal hauling lines; conveyor belts, chutes, and aerial tramways; equipment storage and maintenance yards; coal handling buildings and structures; inactive mines and related areas; acidic spoil, refuse, or unreclaimed disturbed areas; and liquid storage tanks containing pollutants such as caustics, hydraulic fluids, and lubricants.

8.H.6.3 ***Potential Pollutant Sources.*** (See also Part 5.2.3) Document in your SWPPP the following sources and activities that have potential pollutants associated with them: truck traffic on haul roads and resulting generation of sediment subject to runoff and dust generation; fuel or other liquid storage; pressure lines containing slurry, hydraulic fluid, or other potential harmful liquids; and loading or temporary storage of acidic refuse or spoil.

8.H.6.4 If you are in compliance with dust control requirements under state or county air quality permits, you must include (or summarize, as necessary) what the state or county air quality permit dust control requirements are and how you've achieved compliance with them.

8.H.7 Additional Inspection Requirements. (See also Part 3.1)

8.H.7.1 ***Inspections of Active Mining-Related Areas.*** (See also Part 3) Except for earth-disturbing activities conducted prior to active mining activities as defined in Part 8.H.3.2(a) and 8.H.3.2(b), which are subject to Part 8.H.4.4, perform routine inspections of active mining areas covered by this permit, corresponding with the inspections as performed by SMCRA inspectors, of all mining-related areas required by SMCRA. Also maintain the records of the SMCRA authority representative. See Part 8.H.8.1 for inspection requirements for inactive and unstaffed sties.

8.H.7.2 ***Sediment and Erosion Control.*** (See also Part 2.1.2.5) As indicated in Part 8.H.6.1, SMCRA requirements regarding sediment and erosion control measures must be complied with for those areas subject to SMCRA authority, including inspection requirements.

8.H.7.3 ***Routine Site Inspections.*** (See also Part 3.1) Your inspection program must include inspections for pollutants entering the drainage system from activities located on or near coal mining-related areas. Among the areas to be inspected are haul and access roads; railroad spurs, sliding, and internal hauling lines; conveyor belts, chutes, and aerial tramways; equipment storage and maintenance yards; coal handling buildings and structures; and inactive mines and related areas.

8.H.8 Sector-Specific Benchmarks. (See also Part 6)

Table 8.H-1 identifies benchmarks that apply to the specific subsectors of Sector H. These benchmarks apply to both your primary industrial activity and any co-located industrial activities. Note: There are no Part 8.H. 8 monitoring and reporting or impaired waters monitoring requirements for inactive and unstaffed sites.

Table 8.H-1.

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector H1. Coal Mines and Related Areas (SIC 1221-1241)	Total Aluminum	0.75 mg/L
	Total Iron	1.0 mg/L
	Total Suspended Solids (TSS)	100 mg/L

8.H.8.1 ***Inactive and Unstaffed Sites – Conditional Exemption from No Exposure Requirement for Routine Inspections, Quarterly Visual Assessments, and Benchmark and Impaired Waters Monitoring.*** As a Sector H facility, if you are seeking to exercise a waiver from either the quarterly visual assessment or the benchmark and/or impaired waters monitoring requirements for inactive and unstaffed sites (including temporarily inactive sites), you are conditionally exempt from the requirement to certify that "there are no industrial materials or activities exposed to stormwater" in Parts 3.2.3, 6.2.1.3, and 6.2.4.2. Additionally, if you are seeking to reduce your required routine inspection frequency, as is allowed under Part 3.1.1, you are also conditionally exempt from the requirement to certify that "there are no industrial materials or activities exposed to stormwater." These conditional exemptions are based on the following requirements:

- If circumstances change and your facility becomes active and/or staffed, this exception no longer applies and you must immediately begin complying with the applicable benchmark monitoring requirements as if you were in your first year of permit coverage, and the quarterly visual assessment requirements; and
- EPA retains the authority to revoke this exemption and/or the monitoring waiver where it is determined that the discharge causes, has a reasonable potential to cause or contribute to an instream excursion above an applicable water quality standard, including designated uses.

Subject to the two conditions above, if your facility is inactive and unstaffed, you are waived from the requirement to conduct routine facility inspections, quarterly visual assessments, and benchmark and impaired waters monitoring. You must still conduct an annual site inspection in accordance with Part 3.1. You are encouraged to inspect your site more frequently where you have reason to believe that severe weather or natural disasters may have damaged control measures or increased discharges.

8.H.9 Termination of Permit Coverage

8.H.9.1 ***Termination of Permit Coverage for Sites Reclaimed After December 17, 1990.*** A site or a portion of a site that has been released from applicable state or federal reclamation requirements after December 17, 1990, is no longer required to maintain coverage under this permit. If the site or portion of a site reclaimed after December 17, 1990, was not subject to reclamation requirements, the site or portion of the site is no longer required to maintain coverage under this permit if the site or portion of the site has been reclaimed as defined in Part 8.H.3.5.

8.H.9.2 ***Termination of Permit Coverage for Sites Reclaimed Before December 17, 1990.*** A site or portion of a site that was released from applicable state or federal reclamation requirements before December 17, 1990, or that was otherwise reclaimed before December 17, 1990, is no longer required to maintain coverage under this permit if the site or portion of the site has been reclaimed. A site or portion of a site is considered to have been reclaimed if: (1) stormwater runoff that comes into contact with raw materials, intermediate byproducts, finished products, and waste products does not have the potential to cause or contribute to violations of state water quality standards, (2) soil disturbing activities related to mining at the sites or portion of the site have been completed, (3) the site or portion of the site has been stabilized to minimize soil erosion, and (4) as appropriate depending on location, size, and the potential to contribute pollutants to stormwater discharges, the site or portion of the site has been revegetated, will be amenable to natural revegetation, or will be left in a condition consistent with the post-mining land use.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart I – Sector I – Oil and Gas Extraction.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.I.1 Covered Stormwater Discharges.

The requirements in Subpart I apply to stormwater discharges associated with industrial activity from Oil and Gas Extraction facilities as identified by the SIC Codes specified under Sector I in Table D-1 of Appendix D of the permit.

8.I.1.1 ***Discharges of stormwater runoff from field activities or operations associated with oil and gas exploration, production, processing, or treatment operations or transmission facilities are exempt from NPDES permit coverage unless, in accordance with 40 CFR 122.26(c)(1)(iii), the facility:***

- Has had a discharge of stormwater resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 117.21 or 40 CFR 302.6 at any time since November 16, 1987; or
- Has had a discharge of stormwater resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 110.6 at any time since November 16, 1987; or
- Contributes to a violation of a water quality standard.

Any stormwater discharges that require permit coverage as a result of meeting one of the conditions of 122.26(c)(1)(iii) may be covered under this permit unless otherwise required to obtain coverage under an alternative NPDES general permit or an individual NPDES permit as specified in Part 1.6.1.

8.I.2 Limitations on Coverage.

8.I.2.1 ***Stormwater Discharges Subject to Effluent Limitation Guidelines.*** (See also Part 1.1.4.5) This permit does not authorize stormwater discharges from petroleum drilling operations that are subject to nationally established effluent limitation guidelines found at 40 CFR Part 435, respectively.

8.I.2.2 ***Non-Stormwater Discharges.*** Discharges of vehicle and equipment wash water, including tank cleaning operations, are not authorized by this permit. Alternatively, wash water discharges must be authorized under a separate NPDES permit, or be discharged to a sanitary sewer in accordance with applicable industrial pretreatment requirements. (EPA includes this prohibited non-stormwater discharge here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.1.3).

8.I.3 Additional Technology-Based Effluent Limits.

8.I.3.1 ***Vegetative Controls.*** Implement vegetative practices designed to preserve existing vegetation, where attainable, and revegetate open areas as soon as practicable after grade drilling. Implement appropriate vegetative practices, such as the following (list not exclusive): temporary or permanent seeding, mulching, sod stabilization, vegetative buffer strips, and tree protection practices. Begin implementing appropriate vegetative practices on all disturbed areas within 14 days following the last activity in that area.

8.I.4 Additional SWPPP Requirements.

8.I.4.1 ***Drainage Area Site Map.*** (See also Part 5.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or surface runoff: Reportable Quantity (RQ) releases; locations used for the treatment, storage, or disposal of wastes; processing areas and storage areas; chemical mixing areas; construction and drilling areas; all areas subject to the effluent guidelines requirements for "No Discharge" in accordance with 40 CFR 435.32; and the structural controls to achieve compliance with the "No Discharge" requirements.

8.I.4.2 ***Potential Pollutant Sources.*** (See also Part 5.2.3) Also document in your SWPPP the following sources and activities that have potential pollutants associated with them: chemical, cement, mud, or gel mixing activities; drilling or mining activities; and equipment cleaning and rehabilitation activities. In addition, include information about the reportable quantity (RQ) release that triggered the permit application requirements: the nature of the release (e.g., spill of oil from a drum storage area), amount of oil or hazardous substance released, amount of substance recovered, date of the release, cause of the release (e.g., poor handling techniques and lack of containment in the area), areas affected by the release (i.e., land and water), procedures to clean up release, actions or procedures implemented to prevent or improve response to a release, and remaining potential contamination of stormwater from release (taking into account human health risks, the control of drinking water intakes, and the designated uses of the receiving water).

8.I.4.3 ***Erosion and Sediment Controls.*** (See also Part 2.1.2.5) Unless covered by EPA's Construction General Permit (CGP), the additional documentation requirements for sediment and erosion controls for well drillings and sand/shale mining areas include the following:

8.I.4.3.1 ***Site Description.*** Also include a description in your SWPPP of the nature of the exploration activity, estimates of the total area of site and area disturbed due to exploration activity, an estimate of runoff coefficient of the site, a site drainage map, including approximate slopes, and the names of all receiving waters.

8.I.4.3.2 ***Vegetative Controls.*** Document vegetative practices used consistent with Part 8.I.3.1 in the SWPPP.

8.I.5 Additional Inspection Requirements.

All erosion and sediment controls must be inspected either: 1) every 7 days; or 2) once every 14 calendar days and within 24 hours of a storm event of 0.25 inches or greater.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart J – Sector J – Non-Metallic Mineral Mining and Dressing.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

Note: Where compliance with a requirement in a separate exploration permit, mining permit, reclamation plan, Surface Mining Control and Reclamation Act (SMCRA) requirements, etc. will result in you fully meeting any requirement in this Subpart, you are considered to have complied with the relevant requirement in this Subpart. You must include documentation in your SWPPP describing your rationale for concluding that any particular action on your part is sufficient to comply with the corresponding requirement in this Subpart.

8.J.1 Covered Stormwater Discharges.

The requirements in Subpart J apply to stormwater discharges associated with industrial activity from Active and Inactive Non-Metallic Mineral Mining and Dressing facilities as identified by the SIC Codes specified under Sector J in Table D-1 of Appendix D of the permit.

8.J.1.1 ***Covered Discharges from Inactive Facilities.*** All stormwater discharges.

8.J.1.2 ***Covered Discharges from Active and Temporarily Inactive Facilities.*** All stormwater discharges, except for most stormwater discharges subject to the existing effluent limitation guideline at 40 CFR Part 436. Mine dewatering discharges composed entirely of stormwater or uncontaminated ground water seepage from: construction sand and gravel, industrial sand, and crushed stone mining facilities.

8.J.1.3 ***Covered Discharges from Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*** All stormwater discharges.

8.J.1.4 ***Covered Discharges from Sites Undergoing Reclamation.*** All stormwater discharges.

8.J.2 Limitations on Coverage.

Most stormwater discharges subject to an existing effluent limitation guideline at 40 CFR Part 436 are not authorized by this permit. The exceptions to this limitation, which are covered by this permit, are mine dewatering discharges composed entirely of stormwater or uncontaminated ground water seepage from construction sand and gravel, industrial sand, and crushed stone mining facilities.

8.J.3 Definitions.

The following definitions are not intended to supersede the definitions of active and inactive mining facilities established by 40 CFR 122.26(b)(14)(iii).

8.J.3.1 ***Mining operations*** – For this permit, mining operations are grouped into two distinct categories, with distinct effluent limits and requirements applicable to each: a) earth-disturbing activities conducted prior to active mining activities); and b) active mining activities, which includes reclamation. "Mining operations" can occur at both inactive mining facilities and temporarily inactive mining facilities.

8.J.3.2 ***Earth-disturbing activities conducted prior to active mining activities*** – Consists of two classes of earth-disturbing (i.e., clearing, grading and excavation) activities:

a. activities performed for purposes of mine site preparation, including: cutting new rights of way (except when related to access road construction); providing access to a

mine site for vehicles and equipment (except when related to access road construction); other earth disturbances associated with site preparation activities on any areas where active mining activities have not yet commenced (e.g., for heap leach pads, waste rock facilities, tailings impoundments, wastewater treatment plants); and

b. construction of staging areas to prepare for erecting structures such as to house project personnel and equipment, mill buildings, etc., and construction of access roads. Earth-disturbing activities associated with the construction of staging areas and the construction of access roads conducted prior to active mining are considered to be "construction" and have additional effluent limits in Part 8.J .4.2.

8.J.3.3 ***Active mining activities*** – Activities related to the extraction, removal or recovery, and benefication of *non-metallic minerals* from the earth; removal of overburden and waste rock to expose mineable minerals; and site reclamation and closure activities. All such activities occur within the "active mining area." Reclamation involves activities undertaken, in compliance with applicable mined land reclamation requirements, to return the land to an appropriate post-mining contour and land use in order to meet applicable federal and state reclamation requirements. In addition, once earth-disturbing activities conducted prior to active mining activities have ceased and all related requirements in Part 8.J.4 have been met, and a well-delineated "active mining area" has been established, all activities (including any clearing, grading, and excavation) that occur within the active mining area are "active mining activities

8.J.3.4 ***Active mining area*** – A place where work or other activity related to the extraction, removal or recovery of non-metallic minerals is being conducted, except, with respect to surface mines, any area of land on or in which grading has been completed to return the earth to desired contour and reclamation work has begun.

Note: Earth-disturbing activities described in the definition in Part 8.J.3.2 that occur on areas outside the active mining area (e.g., for expansion of the mine into undeveloped territory) are considered "earth-disturbing conducted prior to active mining activities", and must comply with the requirements in Part 8.J.4.

8.J.3.5 ***Inactive mineral mining facility*** – A site or portion of a site where mineral mining and/or milling occurred in the past but there are no active mining activities occurring as defined above, and where the inactive portion is not covered by an active mining permit issued by the applicable state or federal agency. An inactive mineral mining facility has an identifiable owner / operator. Sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials, and sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim are not considered either active or inactive mining facilities and do not require an NPDES industrial stormwater permit.

8.J.3.6 ***Temporarily inactive mineral mining facility*** – A site or portion of a site where non-metallic mineral mining and/or milling occurred in the past but currently are not being actively undertaken, and the facility is covered by an active mining permit issued by the applicable state or federal agency.

8.J.4 Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.

Stormwater discharges from earth-disturbing activities conducted prior to active mining activities (defined in Part 8.J.3.2) are covered under this permit. For such earth-disturbing activities, you must comply with all applicable requirements in Parts 1-9 of the MSGP except for

the technology-based effluent limits in Part 8.J.5 and Part 2.1.2, the inspection requirements in Part 8.J.7 and Part 3, and the monitoring requirements in Part 8.J.8 and Part 6.

Authorized discharges from areas where earth-disturbing activities have ceased and stabilization as specified in Part 8.J.4.19 or 8.J.4.2.11, where appropriate, has been completed (stabilization is not required for areas where active mining activities will occur), are no longer subject to the Part 8.J.4 requirements. At such time, authorized discharges become subject to all other applicable requirements in the MSGP, including the effluent limits in Parts 2.1.2 and 8.J.5, the inspection requirements in Parts 3 and 8.J.7, and the monitoring requirements in Parts 6 and 8.J.8.

8.J.4.1 Technology-Based Effluent Limits Applicable to All Earth-Disturbing Activities Conducted Prior to Active mining Activities. The following technology-based effluent limits apply to authorized discharges from all earth-disturbing activities conducted prior to active mining activities defined in Part 8.J.3.2(a) and 8.J.3.2(b). These limits supersede the technology-based limits listed in Part 2.1.2 and Part 8.J.5 of the MSGP.

8.J.4.1.1 Erosion and sediment control installation requirements.

- By the time construction activities commence, install and make operational downgradient sediment controls, unless this timeframe is infeasible. If infeasible you must install and make such controls operational as soon as practicable or as soon as site conditions permit.
- All other stormwater controls described in the SWPPP must be installed and made operational as soon as conditions on each portion of the site allows.

8.J.4.1.2 Erosion and sediment control maintenance requirements. You must:

- Ensure that all erosion and sediment controls remain in effective operating condition.
- Wherever you determine that a stormwater control needs maintenance to continue operating effectively, initiate efforts to fix the problem immediately after its discovery, and complete such work by the end of the next work day.
- When a stormwater control must be replaced or significantly repaired, complete the work within 7 days, unless infeasible. If 7 days is infeasible, you must complete the installation or repair as soon practicable.

8.J.4.1.3 Perimeter controls. You must:

- Install sediment controls along those perimeter areas of your disturbed area that will receive stormwater, except where site conditions prevent the use of such controls (in which case, maximize their installation to the extent practicable).
- Remove sediment before it accumulates to one-half of the above-ground height of any perimeter control.

8.J.4.1.4 Sediment track-out. For construction vehicles and equipment exiting the site directly onto paved roads, you must:

- Use appropriate stabilization techniques to minimize sediment track-out from vehicles and equipment prior to exit;
- Use additional controls to remove sediment from vehicle and equipment tires prior to exit, where necessary;
- Remove sediment that is tracked out onto paved roads by end of the work day.

Note: EPA recognizes that some fine grains may remain visible on the surfaces of off-site streets, other paved areas, and sidewalks even after you have

implemented sediment removal practices. Such "staining" is not a violation of Part 8.J.4.1.4.

8.J.4.1.5 ***Soil or sediment stockpiles.*** You must:

- Minimize erosion of stockpiles from stormwater and wind via temporary cover, if feasible.
- Prevent up-slope stormwater flows from causing erosion of stockpiles (e.g., by diverting flows around the stockpile).
- Minimize sediment from stormwater that runs off of stockpiles, using sediment controls (e.g., a sediment barrier or downslope sediment control).

8.J.4.1.6 ***Sediment basins.*** If you intend to install a sediment basin to treat stormwater from your earth-disturbing activities, you must:

- Provide storage for either (1) the 2-year, 24-hour storm, or (2) 3,600 cubic feet per acre drained.
- Prevent erosion of (1) basin embankments using stabilization controls (e.g., erosion control blankets), and (2) the inlet and outlet points of the basin using erosion controls and velocity dissipation devices.

8.J.4.1.7 ***Minimize dust.*** You must minimize the generation of dust through the appropriate application of water or other dust suppression techniques that minimize pollutants being discharged into surface waters.

8.J.4.1.8 ***Restrictions on use of treatment chemicals.*** If you intend to use sediment treatment chemicals at your site, you are subject to the following minimum requirements:

- Use conventional erosion and sediment controls prior to and after application of chemicals;
- Select chemicals suited to soil type, and expected turbidity, pH, flow rate;
- Minimize the discharge risk from stored chemicals;
- Comply with state/local requirements;
- Use chemicals in accordance with good engineering practices and specifications of chemical supplier;
- Ensure proper training;
- Provide proper SWPPP documentation.

If you plan to use cationic treatment chemicals (as defined in Appendix A), you are ineligible for coverage under this permit, unless you notify your applicable EPA Regional Office in advance and the EPA Regional Office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards.

8.J.4.1.9 ***Site stabilization requirements for earth-disturbing activities performed for purposes of mine site preparation as defined in 8.J.3.2(a)*** (i.e., not applicable to construction of staging areas for structures and access roads as defined in 8.J.3.2(b)). You must comply with the following stabilization requirements except where the intended function of the site accounts for such disturbed earth (e.g., the earth disturbances will become actively mined, or the controls implemented at the active mining area effectively control the disturbance):

- *Temporary stabilization of disturbed areas.* Stabilization measures must be initiated immediately in portions of the site where earth-disturbing activities performed for purposes of mine site preparation (as defined in

8.J.3.2(a)) have temporarily ceased, but in no case more than 14 days after such activities have temporarily ceased. In arid, semi-arid, and drought-stricken areas, or in areas subject to snow or freezing conditions, where initiating perennial vegetative stabilization measures is not possible within 14 days after earth-disturbing activities performed for purposes of mine site preparation has temporarily ceased, temporary vegetative stabilization measures must be initiated as soon as practicable. Until temporary vegetative stabilization is achieved, interim measures such as erosion control blankets with an appropriate seed base and tackifiers must be employed. In areas of the site where earth-disturbing activities performed for purposes of mine site preparation have permanently ceased prior to active mining, temporary stabilization measures must be implemented to minimize mobilization of sediment or other pollutants until active mining activities commence.

- *Final stabilization of disturbed areas.* Stabilization measures must be initiated immediately where earth-disturbing activities performed for purposes of mine site preparation (as defined in 8.J.3.2(a)) have permanently ceased, but in no case more than 14 days after the earth-disturbing activities have permanently ceased. In arid, semi-arid, and drought-stricken areas, or in areas subject to snow or freezing conditions, where initiating perennial vegetative stabilization measures is not possible within 14 days after earth-disturbing activities have permanently ceased, final vegetative stabilization measures must be initiated as soon as possible. Until final stabilization is achieved, temporary stabilization measures, such as erosion control blankets with an appropriate seed base and tackifiers, must be used.

8.J.4.2 ***Additional Technology-Based Effluent Limits Applicable Only to the Construction of Staging Areas for Structures and Access Roads.*** The following technology-based effluent limits apply to authorized discharges from earth-disturbing activities associated with the construction of staging areas and the construction of access roads, as defined in Part 8.J.3.2(b). These limits supersede the technology-based limits listed in Part 2.1.2 and Part 8.J.5 of the MSGP. These limits do not apply to earth-disturbing activities performed for purposes of mine site preparation (as defined in 8.J.3.2(a)).

8.J.4.2.1 ***Area of disturbance.*** You must minimize the amount of soil exposed during construction activities.

8.J.4.2.2 ***Erosion and sediment control design requirements.*** You must:

- Design, install and maintain effective erosion and sediment controls to minimize the discharge of pollutants from construction activities. Account for the following factors in designing your erosion and sediment controls:
  - The expected amount, frequency, intensity and duration of precipitation;
  - The nature of stormwater runoff and run-on at the site, including factors such as impervious surfaces, slopes and site drainage features;
  - The range of soil particle sizes expected to be present on the site.
- Direct discharges from your stormwater controls to vegetated areas of your site to increase sediment removal and maximize stormwater infiltration, including any natural buffers, unless infeasible. Use velocity dissipation devices if necessary to prevent erosion when directing stormwater to vegetated areas.

- If any stormwater flow becomes or will be channelized at your site, you must design erosion and sediment controls to control both peak flowrates and total stormwater volume to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points.
- If you install stormwater conveyance channels, they must be designed to avoid unstabilized areas on the site and to reduce erosion, unless infeasible. In addition, you must minimize erosion of channels and their embankments, outlets, adjacent streambanks, slopes, and downstream waters during discharge conditions through the use of erosion controls and velocity dissipation devices within and along the length of any constructed stormwater conveyance channel, and at any outlet to provide a non-erosive flow velocity.

8.J.4.2.3 ***Natural Buffers.*** For any stormwater discharges from construction activities within 50 feet of a water of the U.S., you must comply with one of the following compliance alternatives:

1. Provide a 50-foot undisturbed natural buffer between construction activities and the water of the U.S.; or

2. Provide an undisturbed natural buffer that is less than 50 feet supplemented by additional erosion and sediment controls, which in combination, achieve a sediment load reduction that is equivalent to a 50-foot undisturbed natural buffer; or

3. If it is infeasible to provide an undisturbed natural buffer of any size, implement erosion and sediment controls that achieve a sediment load reduction that is equivalent to a 50-foot undisturbed natural buffer.

There are exceptions when buffer requirements do not apply:
- There is no stormwater discharge from construction disturbances to a water of the U.S;
- The natural buffer has already been eliminated by preexisting development disturbances;
- The disturbance is for the construction of a water-dependent structure or construction approved under a CWA section 404 permit;
- For linear construction projects, you are not required to comply with the requirements if there are site constraints provided that, to the extent feasible, you limit disturbances within 50 feet of a water of the U.S. and/or you provide supplemental erosion and sediment controls to treat stormwater discharges from any disturbances within 50 feet of a water of the U.S.

See http://water.epa.gov/polwaste/npdes/stormwater/upload/cgp2012_appendixg.pdf for guidance on complying with these alternatives.

8.J.4.2.4 ***Soil or sediment stockpiles.*** In addition to the requirements in Part 8.J.4.1.5, you must locate any piles outside of any natural buffers established under Part 8.J.4.2.3.

8.J.4.2.5 ***Sediment basins.*** In addition to the requirements in Part 8.J.4.1.6, you must locate sediment basins outside of any surface waters and any natural buffers established under Part 8.J.4.2.3, and you must utilize outlet structures that withdraw water from the surface, unless infeasible.

8.J.4.2.6 ***Native topsoil preservation.*** You must preserve native topsoil removed during clearing, grading, or excavation, unless infeasible. Store topsoil in a manner that will maximize its use in reclamation or final vegetative stabilization (e.g., by keeping the topsoil stabilized with seed or similar measures). This requirement does not apply if the intended function of the disturbed area dictates that topsoil be disturbed or removed.

8.J.4.2.7 ***Steep slopes.*** You must minimize the disturbance of steep slopes. The permit does not prevent or prohibit disturbance on steep slopes.

Depending on site conditions and needs, disturbance on steep slopes may be necessary (e.g., a road cut in mountainous terrain; for grading steep slopes prior to erecting the mine office). Where steep slope disturbances are necessary, you can minimize the disturbances to steep slopes through the implementation of a number of standard erosion and sediment control practices, such as by phasing disturbances in these areas and using stabilization practices specifically for steep grades.

8.J.4.2.8 ***Soil compaction.*** Where final vegetative stabilization will occur or where infiltration practices will be installed, you must either restrict vehicle/ equipment use in these areas to avoid soil compaction or use soil conditioning techniques to support vegetative growth. Minimizing soil compaction is not required where compacted soil is integral to the functionality of the site.

8.J.4.2.9 ***Dewatering Practices.*** You are prohibited from discharging ground water or accumulated stormwater that is removed from excavations, trenches, foundations, vaults or other similar points of accumulation, unless such waters are first effectively managed by appropriate controls (e.g., sediment basins or sediment traps, sediment socks, dewatering tanks, tube settlers, weir tanks, or filtration systems). Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control.

You must also meet the following requirements for dewatering activities:

- *Discharge requirements:*
  - No discharging visible floating solids or foam;
  - Remove oil, grease and other pollutants from dewatering water via an oil-water separator or suitable filtration device (such as a cartridge filter);
  - Utilize vegetated upland areas of the site, to the extent feasible, to infiltrate dewatering water before discharge. In no case shall waters of the U.S. be considered part of the treatment area;
  - Implement velocity dissipation devices at all points where dewatering water is discharged;
  - Haul backwash water away for disposal or return it to the beginning of the treatment process; and
  - Clean or replace the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.
- Treatment chemical restrictions: If you use polymers, flocculants or other chemicals to treat dewatering water, you must comply with the requirements in Parts 8.J.4.1.8.

8.J.4.2.10 Pollution prevention requirements.

- *Prohibited discharges* (this non-exhaustive list of prohibited non-stormwater discharges is included here as a reminder that only the only allowable non-stormwater discharges are those enumerated in Part 1.1.3):
  - Wastewater from washout of concrete;
  - Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;
  - Fuels, oils, or other pollutants used for operation and maintenance of vehicles or equipment;
  - Soaps, solvents, or detergents used in vehicle or equipment washing;
  - Toxic or hazardous substances from a spill or other release.
- *Design and location requirements:* Minimize the discharge of pollutants from pollutant sources by:
  - Minimizing exposure;
  - Using secondary containment, spill kits, or other equivalent measures;
  - Locating pollution sources away from surface waters, storm sewer inlets, and drainageways;
  - Cleaning up spills immediately (do not clean by hosing area down).
- *Pollution prevention requirements for wash waters:* Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
- *Pollution prevention requirements for the storage, handling, and disposal of construction products, materials, and wastes:* Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to stormwater. Minimization of exposure is not required in cases where the exposure to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

8.J.4.2.11 Site Stabilization requirements for the construction of staging areas for structures and access roads as defined in 8.J.3.2(b) *(i.e., not applicable to earth-disturbing activities performed for purposes of mine site preparation as defined in 8.J.3.2(a))*. You must comply with the following stabilization requirements, except where the intended function of the site accounts for such disturbed earth (e.g., the area of construction will become actively mined, or the controls implemented at the active mining area effectively control the disturbance):

- By no later than the end of the next work day after construction work in an area has stopped permanently or temporarily ("temporarily" means the land will be idle for a period of 14 days or more but earth-disturbing activities will resume in the future), immediately initiate stabilization measures;
- If using vegetative measures, by no later than 14 days after initiating stabilization:
  - Seed or plant the area, and provide temporary cover to protect the planted area;
  - Once established, vegetation must be uniform, perennial (if final stabilization), and cover at least 70% of stabilized area based on density of native vegetation.

- If using non-vegetative stabilization, by no later than 14 days after initiating stabilization:
  - Install or apply all non-vegetative measures;
  - Cover all areas of exposed soil.

Note: For the purposes of this permit, EPA will consider any of the following types of activities to constitute the initiation of stabilization: 1. Prepping the soil for vegetative or non-vegetative stabilization; 2. Applying mulch or other non-vegetative product to the exposed area; 3. Seeding or planting the exposed area; 4. Starting any of the activities in # 1 – 3 on a portion of the area to be stabilized, but not on the entire area; and 5. Finalizing arrangements to have stabilization product fully installed in compliance with the applicable deadline for completing stabilization.

Exceptions:

- Arid, semi-arid (if construction occurs during seasonally dry period), or drought-stricken areas:
  - Within 14 days of stopping construction work in an area, install any necessary non-vegetative stabilization measures;
  - Initiate vegetative stabilization as soon as conditions on the site allow;
  - Document the schedule that will be followed for initiating and completing vegetative stabilization;
  - Plant the area so that within 3 years the 70% cover requirement is met.
- Sites affected by severe storm events or other unforeseen circumstances:
  - Initiate vegetative stabilization as soon conditions on the site allow;
  - Document the schedule that will be followed for initiating and completing vegetative stabilization;
  - Plant the area so that so that within 3 years the 70% cover requirement is met.

8.J.4.3 *Water Quality-Based Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*

The following water quality-based limits apply to earth-disturbing activities conducted prior to active mining activities defined in Part 8.J.3.2(a) and 8.J.3.2(b), in addition to the water quality-based limits in Part 2.2 of the MSGP.

Stricter requirements apply if your site will discharge to an impaired water or a water that is identified by your state, tribe, or EPA as a Tier 2 or Tier 2.5 for antidegradation purposes:

- More rapid stabilization of exposed areas: Complete initial stabilization activities within 7 days of stopping construction work.
- More frequent site inspections: Once every 7 days and within 24 hours of a storm event of 0.25 inches or greater.

8.J.4.4 *Inspection Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*

The following requirements supersede the inspections requirements in Part 3 and 8.J.7 of the MSGP for earth-disturbing activities conducted prior to active mining activities defined in Part 8.J.3.2(a) and 8.J.3.2(b).

8.J.4.4.1 *Inspection Frequency*

- At least once every 7 calendar days, or
- Once every 14 calendar days and within 24 hours of a storm event of 0.25 inches or greater.

Note:

- Inspections only required during working hours;
- Inspections not required during unsafe conditions; and
- If you choose to inspect once every 14 days, you must have a method for measuring rainfall amount on site (either rain gauge or representative weather station)

Note: To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any day of rainfall during normal business hours that measures 0.25 inches or greater, you must record the total rainfall measured for that day.

Note: You are required to specify in your SWPPP which schedule you will be following.

Note: "Within 24 hours of the occurrence of a storm event" means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.25 inches, even if the storm event is still continuing. Thus, if you have elected to inspect bi- and there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

8.J.4.4.2 Reductions in Inspection Frequency

- Stabilized areas: You may reduce the frequency of inspections to once per month in any area of your site where stabilization has occurred pursuant to Part 8.J.4.1.9 or 8.J.4.2.11.
- Arid, semi-arid, and drought stricken areas: If earth-disturbing activities are occurring during the seasonally dry period or during a period in which drought is predicted to occur, you may reduce inspections to once per month and within 24 hours of a 0.25 inch storm event.
- Frozen conditions: You may temporarily suspend or reduce inspections to once per month until thawing conditions occur if frozen conditions are continuous and disturbed areas have been stabilized. For extreme conditions in remote areas, e.g., where transit to the site is perilous/restricted or temperatures are routinely below freezing, you may suspend inspections until the conditions are conducive to safe access, and more frequent inspections can resume.

***8.J.4.4.3 Areas to be Inspected.* You must at a minimum inspect the all of the following areas:**

- Disturbed areas;
- Stormwater controls and pollution prevention measures;
- Locations where stabilization measures have been implemented;
- Material, waste, borrow, or equipment storage and maintenance areas;
- Areas where stormwater flows;
- Points of discharge.

8.J.4.4.4 What to Check for During Inspections. At a minimum you must check:

- Whether all stormwater controls are installed, operational and working as intended;
- Whether any new or modified stormwater controls are needed;
- For conditions that could lead to a spill or leak;

- For visual signs of erosion/sedimentation at points of discharge.

If a discharge is occurring:
- The quality and characteristics of the discharge;
- Whether controls are operating effectively.

8.J.4.4.5 ***Inspection Report.*** Within 24 hours of an inspection, complete a report that includes:
- Inspection date;
- Name and title of inspector(s);
- Summary of inspection findings;
- Rainfall amount that triggered the inspection (if applicable);
- If it was unsafe to inspect a portion of the site, include documentation of the reason and the location(s);
- Each inspection report must be signed;
- Keep a current copy of all reports at the site or at an easily accessible location.

8.J.4.5 ***Cessation of Requirements Applicable to Earth-Disturbing Activities Conducted Prior to Active Mining Activities.*** The requirements in 8.J.4 no longer apply for any earth-disturbing activities conducted prior to active mining activities as defined in 8.J.3.2(a) or 8.J.3.2(b) where:
1. Earth-disturbing activities have ceased; and
2. Stabilization has been met consistent with Part 8.J.4.1.9 or 8.J.4.2.11 (not required for areas where active mining activities will occur).

8.J.5 Technology-Based Effluent Limits for Active Mining Activities.

Note: These requirements do not apply for any discharges from earth-disturbing activities conducted prior to active-mining as defined in 8.J.3.2(a) or 8.J.3.2(b).

8.J.5.1 ***Employee Training.*** Conduct employee training at least annually at active and temporarily inactive sites. (See also Part 2.1.2.8).

8.J.5.2 ***Stormwater Controls.*** Apart from the control measures you implement to meet your Part 2 effluent limits, where necessary to minimize pollutant discharges in stormwater, implement the following control measures at your site. The potential pollutants identified in Part 8.J.6.3 shall determine the priority and appropriateness of the control measures selected.

Stormwater Diversions: Divert stormwater away from potential pollutant sources through implementation of control measures such as the following, where determined to be feasible (list not exclusive): interceptor or diversion controls (e.g., dikes, swales, curbs, berms); pipe slope drains; subsurface drains; conveyance systems (e.g., channels or gutters, open-top box culverts, and waterbars; rolling dips and road sloping; roadway surface water deflector and culverts); or their equivalents. For mines subject to dust control requirements under state or county air quality permits, provided the requirements are equivalent, compliance with such air permit dust requirements shall constitute compliance with the dust control effluent limit in Part 2.1.2.10.

Capping: When capping is necessary to minimize pollutant discharges in stormwater, identify the source being capped and the material used to construct the cap.

Treatment: If treatment of stormwater (e.g., chemical or physical systems, oil and water separators, artificial wetlands) is necessary to protect water quality, describe the type and location of treatment used. Passive and/or active treatment of stormwater runoff is encouraged. Treated runoff may be discharged as a stormwater source regulated

under this permit provided the discharge is not combined with discharges subject to effluent limitation guidelines for the Mineral Mining and Processing Point Source Category (40 CFR Part 436).

8.J.5.3 ***Discharge Testing.*** (See also Part 5.2.3.4) Test or evaluate all outfalls covered under this permit for the presence of specific mining-related but unauthorized non-stormwater discharges such as discharges subject to effluent limitations guidelines (e.g., 40 CFR Part 436). Alternatively (if applicable), you may keep a certification with your SWPPP, per Part 8.J.6.6.

8.J.6 Additional SWPPP Requirements for Mining Operations.

Note: The requirements in Part 8.J.6 are not applicable to inactive mineral mining facilities.

8.J.6.1 ***Nature of Industrial Activities.*** (See also Part 5.2.2) Document in your SWPPP the mining and associated activities that can potentially affect the stormwater discharges covered by this permit, including a general description of the location of the site relative to major transportation routes and communities.

8.J.6.2 ***Site Map.*** (See also Part 5.2.2) Document in your SWPPP the locations of the following (as appropriate): mining or milling site boundaries; access and haul roads; outline of the drainage areas of each stormwater outfall within the facility with indications of the types of discharges from the drainage areas; location(s) of all permitted discharges covered under an individual NPDES permit; outdoor equipment storage, fueling, and maintenance areas; materials handling areas; outdoor manufacturing, outdoor storage, and material disposal areas; outdoor chemicals and explosives storage areas; overburden, materials, soils, or waste storage areas; location of mine drainage dewatering or other process water; heap leach pads; off-site points of discharge for mine dewatering and process water; surface waters; boundary of tributary areas that are subject to effluent limitations guidelines; and location(s) of reclaimed areas.

8.J.6.3 ***Potential Pollutant Sources.*** (See also Part 5.2.3) For each area of the mine or mill site where stormwater discharges associated with industrial activities occur, document in your SWPPP the types of pollutants (e.g., heavy metals, sediment) likely to be present in significant amounts. For example, phosphate mining facilities will likely need to document pollutants such as selenium, which can be present in significant amounts in their discharges. Consider these factors: the mineralogy of the waste rock (e.g., acid forming); toxicity and quantity of chemicals used, produced, or discharged; the likelihood of contact with stormwater; vegetation of site (if any); and history of significant leaks or spills of toxic or hazardous pollutants. Also include a summary of any existing waste rock or overburden characterization data and test results for potential generation of acid rock drainage.

8.J.6.4 ***Documentation of Control Measures.*** To the extent that you use any of the control measures in Part 8.J.5.2, document them in your SWPPP per Part 5.2.4. If control measures are implemented or planned but are not listed here (e.g., substituting a less toxic chemical for a more toxic one), include descriptions of them in your SWPPP. If you are in compliance with dust control requirements under state or county air quality permits, you must state (or summarize, as necessary) what the state or county air quality permit dust control requirements are and how you've achieved compliance with them.

8.J.6.5 ***Employee Training.*** All employee training(s) conducted in accordance with Part 8.J.5.1 must be documented with the SWPPP.

8.J.6.6 ***Certification of Permit Coverage for Commingled Non-Stormwater Discharges.*** If you determine that you are able to certify, consistent with Part 8.J.5.3, that a particular

discharge composed of commingled stormwater and non-stormwater is covered under a separate NPDES permit, and that permit subjects the non-stormwater portion to effluent limitations prior to any commingling, you must retain such certification with your SWPPP. This certification must identify the non-stormwater discharges, the applicable NPDES permit(s), the effluent limitations placed on the non-stormwater discharge by the permit(s), and the points at which the limitations are applied.

8.J.7 Additional Inspection Requirements. (See also Part 3.1)

Except for earth-disturbing activities conducted prior to active mining activities as defined in Part 8.J.3.2(a) and 8.J.3.2(b), which are subject to Part 8.J.4.4, perform inspections at least quarterly unless adverse weather conditions make the site inaccessible. Sites which discharge to waters which are designated as Tier 2 or 2.5 or waters which are impaired for sediment or nitrogen must be inspected monthly. See Part 8.J.8.1 for inspection requirements for inactive and unstaffed sites.

8.J.8 Sector-Specific Benchmarks. (See also Part 6)

Table 8.J-1 identifies benchmarks that apply to the specific subsectors of Sector J. These benchmarks apply to both your primary industrial activity and any co-located industrial activities. Note: There are no Part 8.J.8 monitoring and reporting or impaired waters monitoring requirements for inactive and unstaffed sites.

Table 8.J-1.

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector J1. Sand and Gravel Mining (SIC 1442, 1446)	Nitrate plus Nitrite Nitrogen	0.68 mg/L
	Total Suspended Solids (TSS)	100 mg/L
Subsector J2. Dimension and Crushed Stone and Nonmetallic Minerals (except fuels) (SIC 1411, 1422-1429, 1481, 1499)	Total Suspended Solids (TSS)	100 mg/L

8.J.8.1 Inactive and Unstaffed Sites – Conditional Exemption from No Exposure Requirement for Routine Inspections, Quarterly Visual Assessments, and Benchmark and Impaired Waters Monitoring. As a Sector J facility, if you are seeking to exercise a waiver from either the routine inspection, quarterly visual assessment or the benchmark and/or impaired monitoring requirements for inactive and unstaffed sites (including temporarily inactive sites), you are conditionally exempt from the requirement to certify that "there are no industrial materials or activities exposed to stormwater" in Parts 3.1.1, 3.2.3, 6.2.1.3, and 6.2.4.3. This exemption is conditioned on the following:

- If circumstances change and your facility becomes active and/or staffed, this exception no longer applies and you must immediately begin complying with the applicable benchmark monitoring requirements as if you were in your first year of permit coverage, and the quarterly visual assessment requirements; and
- EPA retains the authority to revoke this exemption and/or the monitoring waiver where it is determined that the discharge causes, has a reasonable potential to cause, or contributes to an instream excursion above an applicable water quality standard, including designated uses.

Subject to the two conditions above, if your facility is inactive and unstaffed, you are waived from the requirement to conduct routine facility inspections, quarterly visual assessments, and benchmark and impaired waters monitoring. You must still conduct an annual site inspection in

accordance with Part 3.1. You are encouraged to inspect your site more frequently where you have reason to believe that severe weather or natural disasters may have damaged control measures or increased discharges.

8.J.9 Effluent Limitations Based on Effluent Limitations Guidelines. (See also Part 6.2.2.1).

Table 8.J-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table 8.J-2

Industrial Activity	Parameter	Effluent Limitation[1]
Mine dewatering discharges at crushed stone mining facilities (SIC 1422 - 1429)	pH	6.0 - 9.0
Mine dewatering discharges at construction sand and gravel mining facilities (SIC 1442)	pH	6.0 - 9.0
Mine dewatering discharges at industrial sand mining facilities (SIC 1446)	Total Suspended Solids (TSS)	25 mg/L, monthly avg.
		45 mg/L, daily maximum
	pH	6.0 - 9.0

[1]Monitor annually.

8.J.10 Termination of Permit Coverage.

8.J.10.1 ***Termination of Permit Coverage for Sites Reclaimed After December 17, 1990.*** A site or a portion of a site that has been released from applicable state or federal reclamation requirements after December 17, 1990, is no longer required to maintain coverage under this permit. If the site or portion of a site reclaimed after December 17, 1990, was not subject to reclamation requirements, the site or portion of the site is no longer required to maintain coverage under this permit if the site or portion of the site has been reclaimed as defined in Part 8.J.3.5.

8.J.10.2 ***Termination of Permit Coverage for Sites Reclaimed Before December 17, 1990.*** A site or portion of a site that was released from applicable state or federal reclamation requirements before December 17, 1990, or that was otherwise reclaimed before December 17, 1990, is no longer required to maintain coverage under this permit if the site or portion of the site has been reclaimed. A site or portion of a site is considered to have been reclaimed if: (1) stormwater runoff that comes into contact with raw materials, intermediate byproducts, finished products, and waste products does not have the potential to cause or contribute to violations of state water quality standards, (2) soil disturbing activities related to mining at the sites or portion of the site have been completed, (3) the site or portion of the site has been stabilized to minimize soil erosion, and (4) as appropriate depending on location, size, and the potential to contribute pollutants to stormwater discharges, the site or portion of the site has been revegetated, will be amenable to natural revegetation, or will be left in a condition consistent with the post-mining land use.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart K – Sector K – Hazardous Waste Treatment, Storage, or Disposal Facilities.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.K.1 Covered Stormwater Discharges.

The requirements in Subpart K apply to stormwater discharges associated with industrial activity from Hazardous Waste Treatment, Storage, or Disposal facilities (TSDFs) as identified by the Activity Code specified under Sector K in Table D-1 of Appendix D of the permit.

8.K.2 Industrial Activities Covered by Sector K.

This permit authorizes stormwater discharges associated with industrial activity from facilities that treat, store, or dispose of hazardous wastes and that are operating under interim status or a permit under subtitle C of RCRA.

Disposal facilities that have been properly closed and capped, and have no significant materials exposed to stormwater, are considered inactive and do not require permits.

8.K.3 Limitations on Coverage.

8.K.3.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.4) The following are not authorized by this permit: leachate, gas collection condensate, drained free liquids, contaminated ground water, laboratory-derived wastewater, and contact wash water from washing truck and railcar exteriors and surface areas that have come in direct contact with solid waste at the landfill facility. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.1.3.)

8.K.3.2 ***Limitations on Coverage for Facilities Providing Commercial TSDF Services.*** For facilities located in Region 6 (see Appendix C) coverage is limited to hazardous waste TSDFs that are self-generating (including occasionally accepting wastes from community household hazardous waste collection events as public service), handle only residential wastes, and/or only store hazardous wastes and do not treat or dispose of them. Coverage under this permit is not available to commercial waste disposal and treatment facilities located in Region 6 that dispose and treat on a commercial basis any produced hazardous wastes (i.e., not their own) as a service to commercial or industrial generators.

8.K.4 Definitions.

8.K.4.1 ***Contaminated stormwater*** – stormwater that comes into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater as defined in Part 8.K.4.4. Some specific areas of a landfill that may produce contaminated stormwater include (but are not limited to) the open face of an active landfill with exposed waste (no cover added); the areas around wastewater treatment operations; trucks, equipment, or machinery that has been in direct contact with the waste; and waste dumping areas.

8.K.4.2 ***Drained free liquids*** – aqueous wastes drained from waste containers (e.g., drums) prior to landfilling.

8.K.4.3 ***Landfill*** – an area of land or an excavation in which wastes are placed for permanent disposal, but that is not a land application or land treatment unit, surface

impoundment, underground injection well, waste pile, salt dome formation, salt bed formation, underground mine, or cave as these terms are defined in 40 CFR 257.2, 258.2, and 260.10.

8.K.4.4 ***Landfill wastewater*** – as defined in 40 CFR Part 445 (Landfills Point Source Category), all wastewater associated with, or produced by, landfilling activities except for sanitary wastewater, non-contaminated stormwater, contaminated ground water, and wastewater from recovery pumping wells. Landfill wastewater includes, but is not limited to, leachate, gas collection condensate, drained free liquids, laboratory derived wastewater, contaminated stormwater, and contact wash water from washing truck, equipment, and railcar exteriors and surface areas that have come in direct contact with solid waste at the landfill facility.

8.K.4.5 ***Leachate*** – liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from such waste.

8.K.4.6 ***Non-contaminated stormwater*** – stormwater that does not come into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater as defined in Part 8.K.4.4. Non-contaminated stormwater includes stormwater that flows off the cap, cover, intermediate cover, daily cover, and/or final cover of the landfill.

8.K.5 Sector-Specific Benchmarks. (See also Part 6)

Table 8.K-1 identifies benchmarks that apply to the specific subsectors of Sector K. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.K-1.

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector K1. ALL - Industrial Activity Code "HZ" (Note: permit coverage limited in some states). Benchmarks only applicable to discharges not subject to effluent limitations in 40 CFR Part 445 Subpart A (see below).	Ammonia	2.14 mg/L
	Total Magnesium	0.064 mg/L
	Chemical Oxygen Demand (COD)	120 mg/L
	Total Arsenic (freshwater) Total Arsenic (saltwater)[1]	0.15 mg/L 0.069 mg/L
	Total Cadmium (freshwater)[2] Total Cadmium (saltwater)[1]	Hardness Dependent 0.04 mg/L
	Total Cyanide (freshwater) Total Cyanide (saltwater)[1]	0.022 mg/L 0.001 mg/L
	Total Lead (freshwater)[2] Total Lead (saltwater)[1]	Hardness Dependent 0.21 mg/L
	Total Mercury (freshwater) Total Mercury (saltwater)[1]	0.0014 mg/L 0.0018 mg/L
	Total Selenium (freshwater) Total Selenium (saltwater)[1]	0.005 mg/L 0.29 mg/L
	Total Silver (freshwater)[2] Total Silver (saltwater)[1]	Hardness Dependent 0.0019 mg/L

[1]Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.
[2] The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 6.2.1.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	Cadmium (mg/L)	Lead (mg/L)	Silver (mg/L)
0-24.99 mg/L	0.0005	0.014	0.0007
25-49.99 mg/L	0.0008	0.023	0.0007
50-74.99 mg/L	0.0013	0.045	0.0017
75-99.99 mg/L	0.0018	0.069	0.0030
100-124.99 mg/L	0.0023	0.095	0.0046
125-149.99 mg/L	0.0029	0.122	0.0065
150-174.99 mg/L	0.0034	0.151	0.0087
175-199.99 mg/L	0.0039	0.182	0.0112
200-224.99 mg/L	0.0045	0.213	0.0138
225-249.99 mg/L	0.0050	0.246	0.0168
250+ mg/L	0.0053	0.262	0.0183

8.K.6 Effluent Limitations Based on Effluent Limitations Guidelines. (See also Part 6.2.2.1)

Table 8.K-2 identifies effluent limitations that apply to the industrial activities described below. Compliance with these effluent limitations is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table 8.K-2[1]		
Industrial Activity	**Parameter**	**Effluent Limitation**
Discharges from hazardous waste landfills subject to effluent limitations in 40 CFR Part 445 Subpart A (see footnote).	Biochemical Oxygen Demand (BOD_5)	220 mg/L, daily maximum
		56 mg/L, monthly avg. maximum
	Total Suspended Solids (TSS)	88 mg/L, daily maximum
		27 mg/L, monthly avg. maximum
	Ammonia	10 mg/L, daily maximum
		4.9 mg/L, monthly avg. maximum
	Alpha Terpineol	0.042 mg/L, daily maximum
		0.019 mg/L, monthly avg. maximum
	Aniline	0.024 mg/L, daily maximum
		0.015 mg/L, monthly avg. maximum
	Benzoic Acid	0.119 mg/L, daily maximum
		0.073 mg/L, monthly avg. maximum
	Naphthalene	0.059 mg/L, daily maximum
		0.022 mg/L, monthly avg. maximum
	p-Cresol	0.024 mg/L, daily maximum
		0.015 mg/L, monthly avg. maximum
	Phenol	0.048 mg/L, daily maximum
		0.029 mg/L, monthly avg. maximum
	Pyridine	0.072 mg/L, daily maximum
		0.025 mg/L, monthly avg. maximum
	Total Arsenic	1.1 mg/L, daily maximum
		0.54 mg/L, monthly avg. maximum
	Total Chromium	1.1 mg/L, daily maximum
		0.46 mg/L, monthly avg. maximum
	Total Zinc	0.535 mg/L, daily maximum
		0.296 mg/L, monthly avg. maximum
	pH	Within the range of 6-9 standard pH units (s.u.)

[1] Monitor annually. As set forth at 40 CFR Part 445 Subpart A, these numeric limitations apply to contaminated stormwater discharges from hazardous waste landfills subject to the provisions of RCRA Subtitle C at 40 CFR Parts 264 (Subpart N) and 265 (Subpart N) except for any of the following facilities:

(a) landfills operated in conjunction with other industrial or commercial operations when the landfill receives only wastes generated by the industrial or commercial operation directly associated with the landfill;

(b) landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes generated by the industrial or commercial operation directly associated with the landfill and also receives other wastes, provided that the other wastes received for disposal are generated by a facility that is subject to the same provisions in 40 CFR Subchapter N as the industrial or commercial operation or that the other wastes received are of similar nature to the wastes generated by the industrial or commercial operation;

(c) landfills operated in conjunction with Centralized Waste Treatment (CWT) facilities subject to 40 CFR Part 437, so long as the CWT facility commingles the landfill wastewater with other non-landfill wastewater for discharge. A landfill directly associated with a CWT facility is subject to this part if the CWT facility discharges landfill wastewater separately from other CWT wastewater or commingles the wastewater from its landfill only with wastewater from other landfills; or

(d) landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes from public service activities, so long as the company owning the landfill does not receive a fee or other remuneration for the disposal service.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart L – Sector L – Landfills, Land Application Sites, and Open Dumps.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.L.1 Covered Stormwater Discharges.

The requirements in Subpart L apply to stormwater discharges associated with industrial activity from Landfills and Land Application Sites as identified by the Activity Code specified under Sector L in Table D-1 of Appendix D of the permit.

8.L.2 Industrial Activities Covered by Sector L.

This permit may authorize stormwater discharges for Sector L facilities associated with waste disposal at landfills, land application sites that receive or have received industrial waste, including sites subject to regulation under Subtitle D of RCRA. This permit does not cover discharges from landfills that receive only municipal wastes.

8.L.3 Limitations on Coverage.

8.L.3.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.4) The following discharges are not authorized by this permit: leachate, gas collection condensate, drained free liquids, contaminated ground water, laboratory wastewater, and contact wash water from washing truck and railcar exteriors and surface areas that have come in direct contact with solid waste at the landfill facility. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.1.3.)

8.L.3.2 ***Prohibition Stormwater Discharges from Open Dumps.*** Discharges from open dumps as defined under RCRA are also not authorized under this permit.

8.L.4 Definitions.

8.L.4.1 ***Contaminated stormwater*** – stormwater that comes into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater. Some areas of a landfill that may produce contaminated stormwater include (but are not limited to) the open face of an active landfill with exposed waste (no cover added); the areas around wastewater treatment operations; trucks, equipment, or machinery that has been in direct contact with the waste; and waste dumping areas.

8.L.4.2 ***Drained free liquids*** – aqueous wastes drained from waste containers (e.g., drums) prior to landfilling.

8.L.4.3 ***Landfill wastewater*** – as defined in 40 CFR Part 445 (Landfills Point Source Category) all wastewater associated with, or produced by, landfilling activities except for sanitary wastewater, non-contaminated stormwater, contaminated ground water, and wastewater from recovery pumping wells. Landfill process wastewater includes, but is not limited to, leachate; gas collection condensate; drained free liquids; laboratory-derived wastewater; contaminated stormwater; and contact wash water from washing truck, equipment, and railcar exteriors and surface areas that have come in direct contact with solid waste at the landfill facility.

8.L.4.4 ***Leachate*** – liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from such waste.

8.L.4.5 ***Non-contaminated stormwater*** – stormwater that does not come into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater. Non-contaminated stormwater includes stormwater that flows off the cap, cover, intermediate cover, daily cover, and/or final cover of the landfill.

8.L.5 Additional Technology-Based Effluent Limits.

8.L.5.1 ***Preventive Maintenance Program.*** (See also Part 2.1.2.3) As part of your preventive maintenance program, maintain the following: all elements of leachate collection and treatment systems, to prevent commingling of leachate with stormwater; the integrity and effectiveness of any intermediate or final cover (including repairing the cover as necessary), to minimize the effects of settlement, sinking, and erosion.

8.L.5.2 ***Erosion and Sedimentation Control.*** (See also Part 2.1.2.5) Provide temporary stabilization (e.g., temporary seeding, mulching, and placing geotextiles on the inactive portions of stockpiles) for the following in order to minimize discharges of pollutants in stormwater: materials stockpiled for daily, intermediate, and final cover; inactive areas of the landfill or open dump; landfills or open dump areas that have gotten final covers but where vegetation has yet to establish itself; and land application sites where waste application has been completed but final vegetation has not yet been established.

8.L.6 Additional SWPPP Requirements.

8.L.5.1 ***Drainage Area Site Map.*** (See also Part 5.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or surface runoff: active and closed landfill cells or trenches, active and closed land application areas, locations where open dumping is occurring or has occurred, locations of any known leachate springs or other areas where uncontrolled leachate may commingle with runoff, and leachate collection and handling systems.

8.L.5.2 ***Summary of Potential Pollutant Sources.*** (See also Part 5.2.3) Document in your SWPPP the following sources and activities that have potential pollutants associated with them: fertilizer, herbicide, and pesticide application; earth and soil moving; waste hauling and loading or unloading; outdoor storage of significant materials, including daily, interim, and final cover material stockpiles as well as temporary waste storage areas; exposure of active and inactive landfill and land application areas; uncontrolled leachate flows; and failure or leaks from leachate collection and treatment systems.

8.L.7 Additional Inspection Requirements. (See also Part 3)

8.L.7.1 ***Inspections of Active Sites.*** Except in arid and semi-arid climates, inspect operating landfills, open dumps, and land application sites at least once every 7 days. Focus on areas of landfills that have not yet been finally stabilized; active land application areas, areas used for storage of material and wastes that are exposed to precipitation, stabilization, and structural control measures; leachate collection and treatment systems; and locations where equipment and waste trucks enter and exit the site. Ensure that sediment and erosion control measures are operating properly. For stabilized sites and areas where land application has been completed, or where the climate is arid or semi-arid, conduct inspections at least once every month.

8.L.7.2 ***Inspections of Inactive Sites.*** Inspect inactive landfills, open dumps, and land application sites at least quarterly. Qualified personnel must inspect landfill (or open dump) stabilization and structural erosion control measures, leachate collection and treatment systems, and all closed land application areas.

8.L.8 Additional Post-Authorization Documentation Requirements.

8.L.8.1 ***Recordkeeping and Internal Reporting.*** Keep records with your SWPPP of the types of wastes disposed of in each cell or trench of a landfill or open dump. For land application sites, track the types and quantities of wastes applied in specific areas.

8.L.9 Sector-Specific Benchmarks. (See also Part 6)

Table 8.L-1 identifies benchmarks that apply to the specific subsectors of Sector L. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.L-1.

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration[1]
Subsector L1. All Landfill, Land Application Sites and Open Dumps (Industrial Activity Code "LF")	Total Suspended Solids (TSS)	100 mg/L
Subsector L2. All Landfill, Land Application Sites and Open Dumps, except Municipal Solid Waste Landfill (MSWLF) Areas Closed in Accordance with 40 CFR 258.60 (Industrial Activity Code "LF")	Total Iron	1.0 mg/L

[1]Benchmark monitoring required only for discharges not subject to effluent limitations in 40 CFR Part 445 Subpart B (see Table L-2 below).

8.L.10. Effluent Limitations Based on Effluent Limitations Guidelines. (See also Part 6.2.2.1)

Table 8.L-2 identifies effluent limitations that apply to the industrial activities described below. Compliance with these effluent limitations is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table 8.L-2[1]

Industrial Activity	Parameter	Effluent Limitation
Discharges from non-hazardous waste landfills subject to effluent limitations in 40 CFR Part 445 Subpart B.	Biochemical Oxygen Demand (BOD_5)	140 mg/L, daily maximum
		37 mg/L, monthly avg. maximum
	Total Suspended Solids (TSS)	88 mg/L, daily maximum
		27 mg/L, monthly avg. maximum
	Ammonia	10 mg/L, daily maximum
		4.9 mg/L, monthly avg. maximum
	Alpha Terpineol	0.033 mg/L, daily maximum
		0.016 mg/L monthly avg. maximum
	Benzoic Acid	0.12 mg/L, daily maximum
		0.071 mg/L, monthly avg. maximum
	p-Cresol	0.025 mg/L, daily maximum
		0.014 mg/L, monthly avg. maximum

Table 8.L-2[1]		
Industrial Activity	**Parameter**	**Effluent Limitation**
	Phenol	0.026 mg/L, daily maximum
		0.015 mg/L, monthly avg. maximum
	Total Zinc	0.20 mg/L, daily maximum
		0.11 mg/L, monthly avg. maximum
	pH	Within the range of 6-9 standard pH units (s.u.)

[1] Monitor annually. As set forth at 40 CFR Part 445 Subpart B, these numeric limitations apply to contaminated stormwater discharges from MSWLFs that have not been closed in accordance with 40 CFR 258.60, and to contaminated stormwater discharges from those landfills that are subject to the provisions of 40 CFR Part 257 except for discharges from any of the following facilities:

(a) landfills operated in conjunction with other industrial or commercial operations, when the landfill receives only wastes generated by the industrial or commercial operation directly associated with the landfill;

(b) landfills operated in conjunction with other industrial or commercial operations, when the landfill receives wastes generated by the industrial or commercial operation directly associated with the landfill and also receives other wastes, provided that the other wastes received for disposal are generated by a facility that is subject to the same provisions in 40 CFR Subchapter N as the industrial or commercial operation, or that the other wastes received are of similar nature to the wastes generated by the industrial or commercial operation;

(c) landfills operated in conjunction with CWT facilities subject to 40 CFR Part 437, so long as the CWT facility commingles the landfill wastewater with other non-landfill wastewater for discharge. A landfill directly associated with a CWT facility is subject to this part if the CWT facility discharges landfill wastewater separately from other CWT wastewater or commingles the wastewater from its landfill only with wastewater from other landfills; or

(d) landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes from public service activities, so long as the company owning the landfill does not receive a fee or other remuneration for the disposal service.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart M – Sector M – Automobile Salvage Yards.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.M.1 Covered Stormwater Discharges.

The requirements in Subpart M apply to stormwater discharges associated with industrial activity from Automobile Salvage Yards as identified by the SIC Code specified under Sector M in Table D-1 of Appendix D of this permit.

8.M.2 Additional Technology-Based Effluent Limits.

8.M.2.1 ***Spill and Leak Prevention Procedures.*** (See also Part 2.1.2.4) Drain vehicles intended to be dismantled of all fluids upon arrival at the site (or as soon thereafter as practicable), or employ some other equivalent means to prevent spills and leaks.

8.M.2.2 ***Employee Training.*** (See also Part 2.1.2.8) If applicable to your facility, address the following areas (at a minimum) in your employee training program: proper handling (collection, storage, and disposal) of oil, used mineral spirits, anti-freeze, mercury switches, and solvents.

8.M.2.3 ***Management of Runoff.*** (See also Part 2.1.2.6) Implement control measures to minimize discharges of pollutants in runoff such as the following, where determined to be feasible (list not exclusive): berms or drainage ditches on the property line (to help prevent run-on from neighboring properties); berms for uncovered outdoor storage of oily parts, engine blocks, and above-ground liquid storage; installation of detention ponds; and installation of filtering devices and oil and water separators.

8.M.3 Additional SWPPP Requirements.

8.M.3.1 ***Drainage Area Site Map.*** (See also Part 5.2.2) Identify locations used for dismantling, storing, and maintaining used motor vehicle parts. Also identify where any of the following may be exposed to precipitation or surface runoff: dismantling areas, parts (e.g., engine blocks, tires, hub caps, batteries, hoods, mufflers) storage areas, and liquid storage tanks and drums for fuel and other fluids.

8.M.3.2 ***Potential Pollutant Sources.*** (See also Part 5.2.3) Assess the potential for the following to contribute pollutants to stormwater discharges: vehicle storage areas, dismantling areas, parts storage areas (e.g., engine blocks, tires, hub caps, batteries, hoods, mufflers), and fueling stations.

8.M.4 Additional Inspection Requirements. (See also Part 3.1)

Immediately (or as soon thereafter as practicable) inspect vehicles arriving at the site for leaks. Inspect quarterly for signs of leakage all equipment containing oily parts, hydraulic fluids, any other types of fluids, or mercury switches. Also, inspect quarterly for signs of leakage all vessels and areas where hazardous materials and general automotive fluids are stored, including, but not limited to, mercury switches, brake fluid, transmission fluid, radiator water, and antifreeze.

8.M.5 Sector-Specific Benchmarks. (See also Part 6)

Table 8.M-1 identifies benchmarks that apply to Sector M. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.M-1.		
Subsector (You may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector M1. Automobile Salvage Yards (SIC 5015)	Total Suspended Solids (TSS)	100 mg/L
	Total Aluminum	0.75 mg/L
	Total Iron	1.0 mg/L
	Total Lead (freshwater)[2] Total Lead (saltwater)[1]	Hardness Dependent 0.21 mg/L

[1]Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.
[2] The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 6.2.1.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	Lead (mg/L)
0-24.99 mg/L	0.014
25-49.99 mg/L	0.023
50-74.99 mg/L	0.045
75-99.99 mg/L	0.069
100-124.99 mg/L	0.095
125-149.99 mg/L	0.122
150-174.99 mg/L	0.151
175-199.99 mg/L	0.182
200-224.99 mg/L	0.213
225-249.99 mg/L	0.246
250+ mg/L	0.262

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart N – Sector N – Scrap Recycling and Waste Recycling Facilities.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.N.1 Covered Stormwater Discharges.

The requirements in Subpart N apply to stormwater discharges associated with industrial activity from Scrap Recycling and Waste Recycling facilities as identified by the SIC Code specified under Sector N in Table D-1 of Appendix D of the permit.

8.N.2 Limitation on Coverage.

Separate permit requirements have been established for recycling facilities that receive, process, and do wholesale distribution of only source-separated recyclable materials primarily from non-industrial and residential sources (i.e., common consumer products including paper, newspaper, glass, cardboard, plastic containers, and aluminum and tin cans). This includes recycling facilities commonly referred to as material recovery facilities (MRF). See Part 8.N.3.3.

8.N.2.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.4) Non-stormwater discharges from turnings containment areas are not covered by this permit (see also Part 8.N.3.1.3). Discharges from containment areas in the absence of a storm event are prohibited unless covered by a separate NPDES permit. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.1.3.)

8.N.3 Additional Technology-Based Effluent Limits.

8.N.3.1 ***Scrap and Waste Recycling Facilities (Non-Source Separated, Nonliquid Recyclable Materials).*** The following requirements are for facilities that receive, process, and do wholesale distribution of non-source separated, nonliquid recyclable wastes (e.g., ferrous and nonferrous metals, plastics, glass, cardboard, and paper). These facilities may receive both nonrecyclable and recyclable materials. This section is not intended for those facilities that accept recyclables only from primarily non-industrial and residential sources.

8.N.3.1.1 ***Inbound Recyclable and Waste Material Control Program.*** Minimize the chance of accepting materials that could be significant sources of pollutants by conducting inspections of inbound recyclables and waste materials and through implementation of control measures such as the following, where determined to be feasible (list not exclusive): providing information and education to suppliers of scrap and recyclable waste materials on draining and properly disposing of residual fluids (e.g., from vehicles and equipment engines, radiators and transmissions, oil filled transformers, and individual containers or drums) and removal of mercury switches from vehicles before delivery to your facility; establishing procedures to minimize the potential of any residual fluids from coming into contact with precipitation or runoff; establishing procedures for accepting scrap lead-acid batteries (additional requirements for the handling, storage, and disposal or recycling of batteries are contained in the scrap lead-acid battery program provisions in Part 8.N.3.1.6); providing training targeted for those personnel engaged in the inspection and acceptance of inbound recyclable materials; and

establishing procedures to ensure that liquid wastes, including used oil, are stored in materially compatible and non-leaking containers and are disposed of or recycled in accordance with the Resource Conservation and Recovery Act (RCRA).

8.N.3.1.2 ***Scrap and Waste Material Stockpiles and Storage (Outdoor).*** Minimize contact of stormwater runoff with stockpiled materials, processed materials, and nonrecyclable wastes through implementation of control measures such as the following, where determined to be feasible (list not exclusive): permanent or semi-permanent covers; sediment traps, vegetated swales and strips, catch basin filters, and sand filters to facilitate settling or filtering of pollutants; dikes, berms, containment trenches, culverts, and surface grading to divert runoff from storage areas; silt fencing; and oil and water separators, sumps, and dry absorbents for areas where potential sources of residual fluids are stockpiled (e.g., automobile engine storage areas).

8.N.3.1.3 ***Stockpiling of Turnings Exposed to Cutting Fluids (Outdoor Storage).*** Minimize contact of surface runoff with residual cutting fluids by storing all turnings exposed to cutting fluids under some form of permanent or semi-permanent cover, or establishing dedicated containment areas for all turnings that have been exposed to cutting fluids. Any containment areas must be constructed of concrete, asphalt, or other equivalent types of impermeable material and include a barrier (e.g., berms, curbing, elevated pads) to prevent contact with stormwater run-on. Stormwater runoff from these areas can be discharged, provided that any runoff is first collected and treated by an oil and water separator or its equivalent. You must regularly maintain the oil and water separator (or its equivalent) and properly dispose of or recycle collected residual fluids.

8.N.3.1.4 ***Scrap and Waste Material Stockpiles and Storage (Covered or Indoor Storage).*** Minimize contact of residual liquids and particulate matter from materials stored indoors or under cover with surface runoff through implementation of control measures such as the following, where determined to be feasible (list not exclusive): good housekeeping measures, including the use of dry absorbents or wet vacuuming to contain, dispose of, or recycle residual liquids originating from recyclable containers, and mercury spill kits for spills from storage of mercury switches; not allowing wash water from tipping floors or other processing areas to discharge to the storm sewer system; and disconnecting or sealing off all floor drains connected to the storm sewer system.

8.N.3.1.5 ***Scrap and Recyclable Waste Processing Areas.*** Minimize surface runoff from coming in contact with scrap processing equipment. Pay attention to operations that generate visible amounts of particulate residue (e.g., shredding) to minimize the contact of accumulated particulate matter and residual fluids with runoff (i.e., through good housekeeping, preventive maintenance). To minimize discharges of pollutants in stormwater from scrap and recyclable waste processing areas, implement control measures such as the following, where determined to be feasible (list not exclusive): at least once per month inspecting equipment for spills or leaks and malfunctioning, worn, or corroded parts or equipment; establishing a preventive maintenance program for processing equipment; using dry-absorbents or other cleanup practices to collect and dispose of or recycle spilled or leaking fluids or use mercury spill kits for spills from storage of mercury switches; on unattended

hydraulic reservoirs over 150 gallons in capacity, installing protection devices such as low-level alarms or equivalent devices, or secondary containment that can hold the entire volume of the reservoir; implementing containment or diversion structures such as dikes, berms, culverts, trenches, elevated concrete pads, and grading to minimize contact of stormwater runoff with outdoor processing equipment or stored materials; using oil and water separators or sumps; installing permanent or semi-permanent covers in processing areas where there are residual fluids and grease; and using retention or detention ponds or basins, sediment traps, vegetated swales or strips, and/or catch basin filters or sand filters for pollutant settling and filtration.

8.N.3.1.6 ***Scrap Lead-Acid Battery Program.*** To minimize the discharge of pollutants in stormwater from lead-acid batteries, properly handle, store, and dispose of scrap lead-acid batteries, and implement control measures such as the following, where determined to be feasible (list not exclusive): segregating scrap lead-acid batteries from other scrap materials; properly handling, storing, and disposing of cracked or broken batteries; collecting and disposing of leaking lead-acid battery fluid; minimizing or eliminating (if possible) exposure of scrap lead-acid batteries to precipitation or runoff; and providing employee training for the management of scrap batteries.

8.N.3.1.7 ***Spill Prevention and Response Procedures.*** (See also Part 2.1.2.4) Install alarms and/or pump shutoff systems on outdoor equipment with hydraulic reservoirs exceeding 150 gallons in the event of a line break. Alternatively, a secondary containment system capable of holding the entire contents of the reservoir plus room for precipitation can be used. Use a mercury spill kit for any release of mercury from switches, anti-lock brake systems, and switch storage areas.

8.N.3.1.8 ***Supplier Notification Program.*** As appropriate, notify major suppliers which scrap materials will not be accepted at the facility or will be accepted only under certain conditions.

8.N.3.2 ***Waste Recycling Facilities*** (Liquid Recyclable Materials).

8.N.3.2.1 ***Waste Material Storage (Indoor).*** Minimize or eliminate contact between residual liquids from waste materials stored indoors and from surface runoff. The plan may refer to applicable portions of other existing plans, such as Spill Prevention, Control, and Countermeasure (SPCC) plans required under 40 CFR Part 112. To minimize discharges of pollutants in stormwater from indoor waste material storage areas, implement control measures such as the following, where determined to be feasible (list not exclusive): implementing procedures for material handling (including labeling and marking); cleaning up spills and leaks with dry absorbent materials and/or a wet vacuum system; installing appropriate containment structures (e.g., trenching, curbing, gutters, etc.); and installing a drainage system, including appurtenances (e.g., pumps or ejectors, manually operated valves), to handle discharges from diked or bermed areas. Drainage should be discharged to an appropriate treatment facility or sanitary sewer system, or otherwise disposed of properly. These discharges may require coverage under a separate NPDES wastewater permit or industrial user permit under the pretreatment program.

8.N.3.2.2 ***Waste Material Storage (Outdoor).*** Minimize contact between stored residual liquids and precipitation or runoff. The plan may refer to applicable portions of other existing plans, such as SPCC plans required under 40 CFR Part 112.

Discharges of stormwater from containment areas containing used oil must also be in accordance with applicable sections of 40 CFR Part 112. To minimize discharges of pollutants in stormwater from outdoor waste material storage areas, implement control measures such as the following, where determined to be feasible (list not exclusive): appropriate containment structures (e.g., dikes, berms, curbing, pits) to store the volume of the largest tank, with sufficient extra capacity for precipitation; drainage control and other diversionary structures; corrosion protection and/or leak detection systems for storage tanks; and dry-absorbent materials or a wet vacuum system to collect spills.

8.N.3.2.3 ***Trucks and Rail Car Waste Transfer Areas.*** Minimize pollutants in stormwater discharges from truck and rail car loading and unloading areas. Include measures to clean up minor spills and leaks resulting from the transfer of liquid wastes. To minimize discharges of pollutants in stormwater from truck and rail car waste transfer areas, implement control measures such as the following, where determined to be feasible (list not exclusive): containment and diversionary structures to minimize contact with precipitation or runoff; and dry clean-up methods, wet vacuuming, roof coverings, and/or runoff controls.

8.N.3.3 ***Recycling Facilities (Source-Separated Materials).*** The following requirements are for facilities that receive only source-separated recyclables, primarily from non-industrial and residential sources.

8.N.3.3.1 ***Inbound Recyclable Material Control.*** Minimize the chance of accepting nonrecyclables (e.g., hazardous materials) that could be a significant source of pollutants by conducting inspections of inbound materials and through the implementation of control measures such as the following, where determined to be feasible (list not exclusive): providing information and education measures to inform suppliers of recyclables about acceptable and non-acceptable materials; training drivers responsible for pickup of recycled material; clearly marking public drop-off containers regarding which materials can be accepted; rejecting nonrecyclable wastes or household hazardous wastes at the source; and establishing procedures for handling and disposal of nonrecyclable material.

8.N.3.3.2 ***Outdoor Storage.*** Minimize exposure of recyclables to precipitation and runoff by using good housekeeping measures to prevent accumulation of particulate matter and fluids, particularly in high traffic areas and through implementation of control measure such as the following, where determined to be feasible (list not exclusive): providing totally enclosed drop-off containers for the public; installing a sump and pump with each container pit and treat or discharge collected fluids to a sanitary sewer system; providing dikes and curbs for secondary containment (e.g., around bales of recyclable waste paper); diverting surface water runoff away from outside material storage areas; providing covers over containment bins, dumpsters, and roll-off boxes; and storing the equivalent of one day's volume of recyclable material indoors.

8.N.3.3.3 ***Indoor Storage and Material Processing.*** Minimize the release of pollutants from indoor storage and processing areas through implementation of control measures such as the following, where determined to be feasible (list not exclusive): scheduling routine good housekeeping measures for all storage and processing areas; prohibiting tipping floor wash water from draining to

the storm sewer system; and providing employee training on pollution prevention practices.

8.N.3.3.4 ***Vehicle and Equipment Maintenance.*** Minimize the discharge of pollutants in stormwater from areas where vehicle and equipment maintenance occur outdoors through implementation of control measures such as the following, where determined to be feasible (list not exclusive): minimizing or eliminating outdoor maintenance areas; establishing spill prevention and clean-up procedures in fueling areas; avoiding topping off fuel tanks; diverting runoff from fueling areas; storing lubricants and hydraulic fluids indoors; and providing employee training on proper handling and storage of hydraulic fluids and lubricants.

8.N.4 Additional SWPPP Requirements.

8.N.4.1 ***Drainage Area Site Map.*** (See also Part 5.2.2) Document in your SWPPP the locations of any of the following activities or sources that may be exposed to precipitation or surface runoff: scrap and waste material storage; outdoor scrap and waste processing equipment; and containment areas for turnings exposed to cutting fluids.

8.N.4.2 ***Maintenance Schedules/Procedures for Collection, Handling, and Disposal or Recycling of Residual Fluids at Scrap and Waste Recycling Facilities.*** If you are subject to Part 8.N.3.1.3, your SWPPP must identify any applicable maintenance schedule and the procedures to collect, handle, and dispose of or recycle residual fluids.

8.N.5 Additional Inspection Requirements.

8.N.5.1 ***Inspections for Waste Recycling Facilities.*** The inspections must be performed quarterly, per Part 3.1, and include, at a minimum, all areas where waste is generated, received, stored, treated, or disposed of and that are exposed to either precipitation or stormwater runoff.

8.N.6 Sector-Specific Benchmarks. (See also Part 6)

Table 8.N-1 identifies benchmarks that apply to Sector N. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.N-1.

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector N1. Scrap Recycling and Waste Recycling Facilities except those only receiving source-separate recyclable materials primarily from non-industrial and residential sources (SIC 5093)	Chemical Oxygen Demand (COD)	120 mg/L
	Total Suspended Solids (TSS)	100 mg/L
	Aluminum Total Recoverable	0.75 mg/L
	Total Copper (freshwater)[2] Total Copper (saltwater)[1]	Hardness Dependent 0.0048 mg/L
	Total Recoverable Iron	1.0 mg/L
	Total Lead (freshwater)[2] Total Lead (saltwater)[1]	Hardness Dependent 0.21 mg/L
	Total Zinc (freshwater)[2] Total Zinc (saltwater)[1]	Hardness Dependent 0.09 mg/L

[1]Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.
[2] The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 6.2.1.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	Copper (mg/L)	Lead (mg/L)	Zinc (mg/L)
0-24.99 mg/L	0.0038	0.014	0.04
25-49.99 mg/L	0.0056	0.023	0.05
50-74.99 mg/L	0.0090	0.045	0.08
75-99.99 mg/L	0.0123	0.069	0.11
100-124.99 mg/L	0.0156	0.095	0.13
125-149.99 mg/L	0.0189	0.122	0.16
150-174.99 mg/L	0.0221	0.151	0.18
175-199.99 mg/L	0.0253	0.182	0.20
200-224.99 mg/L	0.0285	0.213	0.23
225-249.99 mg/L	0.0316	0.246	0.25
250+ mg/L	0.0332	0.262	0.26

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart O – Sector O – Steam Electric Generating Facilities.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.O.1 Covered Stormwater Discharges.

The requirements in Subpart O apply to stormwater discharges associated with industrial activity from Steam Electric Power Generating Facilities as identified by the Activity Code specified under Sector O in Table D-1 of Appendix D.

8.O.2 Industrial Activities Covered by Sector O.

This permit authorizes stormwater discharges from the following industrial activities at Sector O facilities:

8.O.2.1 ***Steam electric power generation using coal, natural gas, oil, nuclear energy, etc., to produce a steam source, including coal handling areas (does not include geothermal power);***

8.O.2.2 ***Coal pile runoff, including effluent limitations established by 40 CFR Part 423;***

8.O.2.3 ***Dual fuel facilities that could employ a steam boiler.***

8.O.3 Limitations on Coverage.

8.O.3.1 ***Prohibition of Non-Stormwater Discharges.*** Non-stormwater discharges subject to effluent limitations guidelines are not covered by this permit. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.1.3.)

8.O.3.2 ***Prohibition of Stormwater Discharges.*** Stormwater discharges from the following are not covered by this permit:

8.O.3.2.1 ***Ancillary facilities (e.g., fleet centers and substations) that are not contiguous to a steam electric power generating facility;***

8.O.3.2.2 ***Gas turbine facilities (provided the facility is not a dual-fuel facility that includes a steam boiler), and combined-cycle facilities where no supplemental fuel oil is burned (and the facility is not a dual-fuel facility that includes a steam boiler);***

8.O.3.2.3 ***Cogeneration (combined heat and power) facilities utilizing a gas turbine.***

8.O.4 Additional Technology-Based Effluent Limits. The following good housekeeping measures are required in addition to Part 2.1.2.2:

8.O.4.1 ***Fugitive Dust Emissions.*** Minimize fugitive dust emissions from coal handling areas to minimize the tracking of coal dust offsite that could be discharged in stormwater through implementation of control measures such as the following, where determined to be feasible, (list not exclusive): installing specially designed tires; and washing vehicles in a designated area before they leave the site and controlling the wash water.

8.O.4.2 ***Delivery Vehicles.*** Minimize contamination of stormwater runoff from delivery vehicles arriving at the plant site. Implement procedures to inspect delivery vehicles arriving at the plant site as necessary to minimize discharges of pollutants in stormwater. Ensure the overall integrity of the body or container of the delivery vehicle and implement procedures to deal with leakage or spillage from delivery vehicles.

8.O.4.3 ***Fuel Oil Unloading Areas.*** Minimize contamination of precipitation or surface runoff from fuel oil unloading areas. Use containment curbs in unloading areas where feasible. In addition, ensure personnel familiar with spill prevention and response procedures are available to respond expeditiously in the event of a leak or spill during deliveries. Ensure that any leaks or spills are immediately contained and cleaned up, and use spill and overflow protection devices (e.g., drip pans, drip diapers, or other containment devices placed beneath fuel oil connectors to contain potential spillage during deliveries or from leaks at the connectors).

8.O.4.4 ***Chemical Loading and Unloading.*** Minimize contamination of precipitation or surface runoff from chemical loading and unloading areas. Use containment curbs at chemical loading and unloading areas to contain spills, where practicable. In addition, ensure personnel familiar with spill prevention and response procedures are available to respond expeditiously in the event of a leak or spill during deliveries. Ensure leaks and spills are immediately contained and cleaned up and, where practicable, load and unload in covered areas and store chemicals indoors.

8.O.4.5 ***Miscellaneous Loading and Unloading Areas.*** Minimize contamination of precipitation or surface runoff from loading and unloading areas through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering the loading area; grading, curbing, or berming around the loading area to divert run-on; locating the loading and unloading equipment and vehicles so that leaks are contained in existing containment and flow diversion systems; or equivalent procedures.

8.O.4.6 ***Liquid Storage Tanks.*** Minimize contamination of surface runoff from above-ground liquid storage tanks through implementation of control measures such as the following, where determined to be feasible, the following (list not exclusive): using protective guards around tanks; using containment curbs; installing spill and overflow protection; using dry cleanup methods; or equivalent measures.

8.O.4.7 ***Large Bulk Fuel Storage Tanks.*** Minimize contamination of surface runoff from large bulk fuel storage tanks. Use containment berms (or their equivalent). You must also comply with applicable state and federal laws, including Spill Prevention, Control and Countermeasure (SPCC) Plan requirements.

8.O.4.8 ***Spill Reduction Measures.*** Minimize the potential for an oil or chemical spill, or reference the appropriate part of your SPCC plan. Visually inspect as part of your routine facility inspection the structural integrity of all above-ground tanks, pipelines, pumps, and related equipment that may be exposed to stormwater, and make any necessary repairs immediately.

8.O.4.9 ***Oil-Bearing Equipment in Switchyards.*** Minimize contamination of surface runoff from oil-bearing equipment in switchyard areas. Use level grades and gravel surfaces to retard flows and limit the spread of spills, or collect runoff in perimeter ditches.

8.O.4.10 ***Residue-Hauling Vehicles.*** Inspect all residue-hauling vehicles for proper covering over the load, adequate gate sealing, and overall integrity of the container body. Repair vehicles without load covering or adequate gate sealing, or with leaking containers or beds.

8.O.4.11 ***Ash Loading Areas.*** Reduce or control the tracking of ash and residue from ash loading areas. Clear the ash building floor and immediately adjacent roadways of spillage, debris, and excess water as necessary to minimize discharges of pollutants in stormwater.

8.O.4.12 ***Areas Adjacent to Disposal Ponds or Landfills.*** Minimize contamination of surface runoff from areas adjacent to disposal ponds or landfills. Reduce ash residue that may be tracked on to access roads traveled by residue handling vehicles, and reduce ash residue on exit roads leading into and out of residue handling areas.

8.O.4.13 ***Landfills, Scrap Yards, Surface Impoundments, Open Dumps, General Refuse Sites.*** Minimize the potential for contamination of runoff from these areas.

8.O.5 Additional SWPPP Requirements.

8.O.5.1 ***Drainage Area Site Map.*** (See also Part 5.2.2) Document in your SWPPP the locations of any of the following activities or sources that may be exposed to precipitation or surface runoff: storage tanks, scrap yards, and general refuse areas; short- and long-term storage of general materials (including but not limited to supplies, construction materials, paint equipment, oils, fuels, used and unused solvents, cleaning materials, paint, water treatment chemicals, fertilizer, and pesticides); landfills and construction sites; and stock pile areas (e.g., coal or limestone piles).

8.O.5.2 ***Documentation of Good Housekeeping Measures.*** You must document in your SWPPP the good housekeeping measures implemented to meet the effluent limits in Part 8.O.4.

8.O.6 Additional Inspection Requirements.

As part of your inspection, inspect the following areas monthly: coal handling areas, loading or unloading areas, switchyards, fueling areas, bulk storage areas, ash handling areas, areas adjacent to disposal ponds and landfills, maintenance areas, liquid storage tanks, and long term and short term material storage areas.

8.O.7 Sector-Specific Benchmarks. (See also Part 6)

Table 8.O-1 identifies benchmarks that apply to Sector O. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.O-1.

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector O1. Steam Electric Generating Facilities (Industrial Activity Code "SE")	Total Iron	1.0 mg/L

8.O.8 Effluent Limitations Based on Effluent Limitations Guidelines. (See also Part 6.2.2.1)

Table 8.O-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table 8.O-2[1]		
Industrial Activity	**Parameter**	**Effluent Limitation**
Discharges from coal storage piles at Steam Electric Generating Facilities	TSS	50 mg/l[2]
	pH	6.0 min - 9.0 max

[1] Monitor annually.
[2] If your facility is designed, constructed, and operated to treat the volume of coal pile runoff that is associated with a 10-year, 24-hour rainfall event, any untreated overflow of coal pile runoff from the treatment unit is not subject to the 50 mg/L limitation for total suspended solids.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart P – Sector P – Land Transportation and Warehousing.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.P.1 Covered Stormwater Discharges.

The requirements in Subpart P apply to stormwater discharges associated with industrial activity from Land Transportation and Warehousing facilities as identified by the SIC Codes specified under Sector P in Table D-1 of Appendix D of the permit.

8.P.2 Limitation on Coverage.

8.P.2.1 ***Prohibited Discharges*** (see also Parts 1.1.4 and 8.P.3.1.4) This permit does not authorize the discharge of vehicle/equipment/surface wash water, including tank cleaning operations. Such discharges must be authorized under a separate NPDES permit, discharged to a sanitary sewer in accordance with applicable industrial pretreatment requirements, or recycled on-site.

8.P.3 Additional Technology-Based Effluent Limits.

8.P.3.1 ***Good Housekeeping Measures.*** (See also Part 2.1.2.2) In addition to the Good Housekeeping requirements in Part 2.1.2.2, you must do the following.

8.P.3.1.1 ***Vehicle and Equipment Storage Areas.*** Minimize the potential for stormwater exposure to leaky or leak-prone vehicles/equipment awaiting maintenance through implementation of control measures such as the following, where determined to be feasible (list not exclusive): using of drip pans under vehicles/equipment; storing vehicles and equipment indoors; installing berms or dikes; using of absorbents; roofing or covering storage areas; and cleaning pavement surfaces to remove oil and grease.

8.P.3.1.2 ***Fueling Areas.*** Minimize contamination of stormwater runoff from fueling areas through implementation of control measures such as the following, where determined to be feasible: covering the fueling area; using spill/overflow protection and cleanup equipment; minimizing stormwater run-on/runoff to the fueling area; using dry cleanup methods; and treating and/or recycling collected stormwater runoff.

8.P.3.1.3 ***Material Storage Areas.*** Maintain all material storage vessels (e.g., for used oil/oil filters, spent solvents, paint wastes, hydraulic fluids) to prevent contamination of stormwater and plainly label them (e.g., "Used Oil," "Spent Solvents"). To minimize discharges of pollutants in stormwater from material storage areas, implement control measures such as the following, where determined to be feasible (list not exclusive): storing the materials indoors; installing berms/dikes around the areas; minimizing runoff of stormwater to the areas; using dry cleanup methods; and treating and/or recycling collected stormwater runoff.

8.P.3.1.4 ***Vehicle and Equipment Cleaning Areas.*** Minimize contamination of stormwater runoff from all areas used for vehicle/equipment cleaning through implementation of control measures such as the following, where determined to be feasible (list not exclusive): performing all cleaning operations indoors;

covering the cleaning operation, ensuring that all wash water drains to a proper collection system (i.e., not the stormwater drainage system); treating and/or recycling collected wash water; or other equivalent measures. Discharges of vehicle and equipment wash water, including tank cleaning operations, are not authorized by this permit for this sector.

8.P.3.1.5 ***Vehicle and Equipment Maintenance Areas.*** Minimize contamination of stormwater runoff from all areas used for vehicle/equipment maintenance through implementation of control measures such as the following, where determined to be feasible (list not exclusive): performing maintenance activities indoors; using drip pans; keeping an organized inventory of materials used in the shop; draining all parts of fluid prior to disposal; prohibiting wet clean up practices if these practices would result in the discharge of pollutants to stormwater drainage systems; using dry cleanup methods; treating and/or recycling collected stormwater runoff; and minimizing run on/runoff of stormwater to maintenance areas.

8.P.3.1.6 ***Locomotive Sanding (Loading Sand for Traction) Areas.*** Minimize discharges of pollutants in stormwater from locomotive sanding areas through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering sanding areas; minimizing stormwater run on/runoff; or appropriate sediment removal practices to minimize the offsite transport of sanding material by stormwater.

8.P.3.2 ***Employee Training.*** (See also Part 2.1.2.8) Train personnel at least once a year and address the following activities, as applicable: used oil and spent solvent management; fueling procedures; general good housekeeping practices; proper painting procedures; and used battery management.

8.P.4 Additional SWPPP Requirements.

8.P.4.1 ***Drainage Area Site Map.*** (See also Part 5.2.2) Identify in the SWPPP the following areas of the facility and indicate whether activities occurring there may be exposed to precipitation/surface runoff: fueling stations; vehicle/equipment maintenance or cleaning areas; storage areas for vehicle/equipment with actual or potential fluid leaks; loading/unloading areas; areas where treatment, storage or disposal of wastes occur; liquid storage tanks; processing areas; and storage areas.

8.P.4.2 ***Potential Pollutant Sources.*** (See also Part 5.2.3) Assess the potential for the following activities and facility areas to contribute pollutants to stormwater discharges: onsite waste storage or disposal; dirt/gravel parking areas for vehicles awaiting maintenance; illicit plumbing connections between shop floor drains and the stormwater conveyance system(s); and fueling areas. Describe these activities in the SWPPP.

8.P.4.3 ***Description of Good Housekeeping Measures.*** You must document in your SWPPP the good housekeeping measures you implement consistent with Part 8.P.3.

8.P.4.4 ***Vehicle and Equipment Wash Water Requirements.*** If wash water is handled in a manner that does not involve separate NPDES permitting (e.g., hauled offsite), describe the disposal method and include all pertinent information (e.g., frequency, volume, destination, etc.) in your SWPPP. Discharges of vehicle and equipment wash water, including tank cleaning operations, are not authorized by this permit for this sector.

8.P.5 Additional Inspection Requirements. (See also Part 3.1)

Inspect all the following areas/activities: storage areas for vehicles/equipment awaiting maintenance, fueling areas, indoor and outdoor vehicle/equipment maintenance areas, material storage areas, vehicle/equipment cleaning areas and loading/unloading areas.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart Q – Sector Q – Water Transportation.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.Q.1 Covered Stormwater Discharges.

The requirements in Subpart Q apply to stormwater discharges associated with industrial activity from Water Transportation facilities as identified by the SIC Codes specified under Sector Q in Table D-1 of Appendix D of the permit.

8.Q.2 Limitations on Coverage.

8.Q.2.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.4) Not covered by this permit: discharges from vessels including bilge and ballast water, sanitary wastes, pressure wash water, and cooling water. Any discharge of pollutants from a point source to a water of the U.S. requires coverage under an NPDES permit. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.1.3.)

8.Q.3 Additional Technology-Based Effluent Limits.

8.Q.3.1 ***Good Housekeeping Measures.*** You must implement the following good housekeeping measures in addition to the requirements of Part 2.1.2.2:

8.Q.3.1.1 ***Pressure Washing Area.*** If pressure washing is used to remove marine growth from vessels, the discharge water must be permitted by a separate NPDES permit. Collect or contain the discharges from the pressure washing area so that they are not commingled with stormwater discharges authorized by this permit.

8.Q.3.1.2 ***Blasting and Painting Area.*** Minimize the potential for spent abrasives, paint chips, and overspray to be discharged into receiving waters or the storm sewer system. Contain all blasting and painting activities, or use other measures, to minimize the discharge of contaminants (e.g., hanging plastic barriers or tarpaulins during blasting or painting operations to contain debris). At least once per month, you must clean stormwater conveyances of deposits of abrasive blasting debris and paint chips.

8.Q.3.1.3 ***Material Storage Areas.*** Store and plainly label all containerized materials (e.g., fuels, paints, solvents, waste oil, antifreeze, batteries) in a protected, secure location away from drains. Minimize the contamination of precipitation or surface runoff from the storage areas. Specify which materials are stored indoors, and contain or enclose or use other measures for those stored outdoors. If abrasive blasting is performed, discuss the storage and disposal of spent abrasive materials generated at the facility. Implement an inventory control plan to limit the presence of potentially hazardous materials onsite.

8.Q.3.1.4 ***Engine Maintenance and Repair Areas.*** Minimize the contamination of precipitation or surface runoff from all areas used for engine maintenance and repair through implementation of control measures such as the following,

where determined to be feasible (list not exclusive): performing all maintenance activities indoors; maintaining an organized inventory of materials used in the shop; draining all parts of fluid prior to disposal; prohibiting the practice of hosing down the shop floor; using dry cleanup methods; and treating and/or recycling stormwater runoff collected from the maintenance area.

8.Q.3.1.5 ***Material Handling Area.*** Minimize the contamination of precipitation or surface runoff from material handling operations and areas (e.g., fueling, paint and solvent mixing, disposal of process wastewater streams from vessels) through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering fueling areas; using spill and overflow protection; mixing paints and solvents in a designated area (preferably indoors or under a shed); and minimizing runoff of stormwater to material handling areas.

8.Q.3.1.6 ***Drydock Activities.*** Routinely maintain and clean the drydock to minimize dischrges of pollutants in stormwater. Address the cleaning of accessible areas of the drydock prior to flooding, and final cleanup following removal of the vessel and raising the dock. Include procedures for cleaning up oil, grease, and fuel spills occurring on the drydock. To minimize discharges of pollutants in stormwater from drydock activities, implement control measures such as the following, where determined to be feasible (list not exclusive): sweeping rather than hosing off debris and spent blasting material from accessible areas of the drydock prior to flooding; and making absorbent materials and oil containment booms readily available to clean up or contain any spills.

8.Q.3.2 ***Employee Training.*** (See also Part 2.1.2.8) As part of your employee training program, address, at a minimum, the following activities (as applicable): used oil management; spent solvent management; disposal of spent abrasives; disposal of vessel wastewaters; spill prevention and control; fueling procedures; general good housekeeping practices; painting and blasting procedures; and used battery management.

8.Q.3.3 ***Preventive Maintenance.*** (See also Part 2.1.2.3) As part of your preventive maintenance program, perform timely inspection and maintenance of stormwater management devices (e.g., cleaning oil and water separators and sediment traps to ensure that spent abrasives, paint chips, and solids will be intercepted and retained prior to entering the storm drainage system), as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters.

8.Q.4 Additional SWPPP Requirements.

8.Q.4.1 ***Drainage Area Site Map.*** (See also Part 5.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or surface runoff: fueling; engine maintenance and repair; vessel maintenance and repair; pressure washing; painting; sanding; blasting; welding; metal fabrication; loading and unloading areas; locations used for the treatment, storage, or disposal of wastes; liquid storage tanks; liquid storage areas (e.g., paint, solvents, resins); and material storage areas (e.g., blasting media, aluminum, steel, scrap iron).

8.Q.4.2 ***Summary of Potential Pollutant Sources.*** (See also Part 5.2.3) Document in the SWPPP the following additional sources and activities that have potential pollutants associated with them: outdoor manufacturing or processing activities (e.g., welding, metal

fabricating) and significant dust or particulate generating processes (e.g., abrasive blasting, sanding, and painting).

8.Q.5 Additional Inspection Requirements. (See also Part 3.1)

Include the following in all quarterly routine facility inspections: pressure washing areas; blasting, sanding, and painting areas; material storage areas; engine maintenance and repair areas; material handling areas; drydock area; and general yard area.

8.Q.6 Sector-Specific Benchmarks. (See also Part 6)

Table 8.Q-1 identifies benchmarks that apply to Sector Q. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.Q-1.

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector Q1. Water Transportation Facilities (SIC 4412-4499)	Total Aluminum	0.75 mg/L
	Total Iron	1.0 mg/L
	Total Lead (freshwater)[2]	Hardness Dependent
	Total Lead (saltwater)[1]	0.21 mg/L
	Total Zinc (freshwater)[2]	Hardness Dependent
	Total Zinc (saltwater)[1]	0.09 mg/L

[1]Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.
[2] The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 6.2.1.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	Lead (mg/L)	Zinc (mg/L)
0-24.99 mg/L	0.014	0.04
25-49.99 mg/L	0.023	0.05
50-74.99 mg/L	0.045	0.08
75-99.99 mg/L	0.069	0.11
100-124.99 mg/L	0.095	0.13
125-149.99 mg/L	0.122	0.16
150-174.99 mg/L	0.151	0.18
175-199.99 mg/L	0.182	0.20
200-224.99 mg/L	0.213	0.23
225-249.99 mg/L	0.246	0.25
250+ mg/L	0.262	0.26

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart R – Sector R – Ship and Boat Building and Repair Yards.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.R.1 Covered Stormwater Discharges.

The requirements in Subpart R apply to stormwater discharges associated with industrial activity from Ship and Boat Building and Repair Yards as identified by the SIC Codes specified under Sector R in Table D-1 of Appendix D of the permit.

8.R.2 Limitations on Coverage.

8.R.2.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.4) Not covered by this permit: discharges from vessels including bilge and ballast water, sanitary wastes, pressure wash water, and cooling water. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.1.3.)

8.R.3 Additional Technology-Based Effluent Limits.

8.R.3.1 ***Good Housekeeping Measures.*** (See also Part 2.1.2.2)

8.R.3.1.1 ***Pressure Washing Area.*** If pressure washing is used to remove marine growth from vessels, the discharged water must be permitted as a process wastewater by a separate NPDES permit.

8.R.3.1.2 ***Blasting and Painting Area.*** Minimize the potential for spent abrasives, paint chips, and overspray to be discharged into receiving waters or the storm sewer system. Contain all blasting and painting activities, or use other measures, to prevent the discharge of the contaminants (e.g., hanging plastic barriers or tarpaulins during blasting or painting operations to contain debris). When necessary, regularly clean stormwater conveyances of deposits of abrasive blasting debris and paint chips.

8.R.3.1.3 ***Material Storage Areas.*** Store and plainly label all containerized materials (e.g., fuels, paints, solvents, waste oil, antifreeze, batteries) in a protected, secure location away from drains. Minimize the contamination of precipitation or surface runoff from the storage areas. If abrasive blasting is performed, discuss the storage and disposal of spent abrasive materials generated at the facility. Implement an inventory control plan to limit the presence of potentially hazardous materials onsite.

8.R.3.1.4 ***Engine Maintenance and Repair Areas.*** Minimize the contamination of precipitation or surface runoff from all areas used for engine maintenance and repair through implementation of control measures such as the following, where determined to be feasible (list not exclusive): performing all maintenance activities indoors; maintaining an organized inventory of materials used in the shop; draining all parts of fluid prior to disposal; prohibiting the practice of hosing down the shop floor; using dry cleanup methods; and treating and/or recycling stormwater runoff collected from the maintenance area.

8.R.3.1.5 ***Material Handling Area.*** Minimize the discharge of pollutants in stormwater from material handling operations and areas (e.g., fueling, paint and solvent mixing, disposal of process wastewater streams from vessels) through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering fueling areas, using spill and overflow protection, mixing paints and solvents in a designated area (preferably indoors or under a shed), and minimizing stormwater run-on to material handling areas.

8.R.3.1.6 ***Drydock Activities.*** Routinely maintain and clean the drydock to minimize pollutants in stormwater runoff. Clean accessible areas of the drydock prior to flooding and final cleanup following removal of the vessel and raising the dock. Include procedures for cleaning up oil, grease, or fuel spills occurring on the drydock. To minimize discharges of pollutants in stormwater from drydock activities, implement control measures such as the following, where determined to be feasible (list not exclusive): sweeping rather than hosing off debris and spent blasting material from accessible areas of the drydock prior to flooding; and having absorbent materials and oil containment booms readily available to clean up and contain any spills.

8.R.3.2 ***Employee Training.*** (See also Part 2.1.2.8) As part of your employee training program, address, at a minimum, the following activities (as applicable): used oil management, spent solvent management, disposal of spent abrasives, disposal of vessel wastewaters, spill prevention and control, fueling procedures, general good housekeeping practices, painting and blasting procedures, and used battery management.

8.R.3.4 ***Preventive Maintenance.*** (See also Part 2.1.2.3) As part of your preventive maintenance program, perform timely inspection and maintenance of stormwater management devices (e.g., cleaning oil and water separators and sediment traps to ensure that spent abrasives, paint chips, and solids will be intercepted and retained prior to entering the storm drainage system), as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters.

8.R.4 Additional SWPPP Requirements.

8.R.4.1 ***Drainage Area Site Map.*** (See also Part 5.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or surface runoff: fueling; engine maintenance or repair; vessel maintenance or repair; pressure washing; painting; sanding; blasting; welding; metal fabrication; loading and unloading areas; treatment, storage, and waste disposal areas; liquid storage tanks; liquid storage areas (e.g., paint, solvents, resins); and material storage areas (e.g., blasting media, aluminum, steel, scrap iron).

8.R.4.2 ***Potential Pollutant Sources.*** (See also Part 5.2.3) Document in your SWPPP the following additional sources and activities that have potential pollutants associated with them (if applicable): outdoor manufacturing or processing activities (e.g., welding, metal fabricating) and significant dust or particulate generating processes (e.g., abrasive blasting, sanding, and painting).

8.R.4.3 ***Documentation of Good Housekeeping Measures.*** Document in your SWPPP any good housekeeping measures implemented to meet the effluent limits in Part 8.R.3.

8.R.4.3.1 ***Blasting and Painting Areas.*** Document in the SWPPP any standard operating practices relating to blasting and painting (e.g., prohibiting uncontained blasting and painting over open water or prohibiting blasting and painting during windy conditions, which can render containment ineffective).

8.R.4.3.2 ***Storage Areas.*** Specify in your SWPPP which materials are stored indoors, and contain or enclose or use other measures for those stored outdoors.

8.R.5 Additional Inspection Requirements. (See also Part 3.1)

Include the following in all quarterly routine facility inspections: pressure washing areas; blasting, sanding, and painting areas; material storage areas; engine maintenance and repair areas; material handling areas; drydock area; and general yard area.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart S – Sector S – Air Transportation.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.S.1 Covered Stormwater Discharges.

The requirements in Subpart S apply to stormwater discharges associated with industrial activity from Air Transportation facilities identified by the SIC Codes specified under Sector S in Table D-1 of Appendix D of the permit.

8.S.2 Limitation on Coverage.

8.S.2.1 ***Limitations on Coverage.*** This permit authorizes stormwater discharges from only those portions of the air transportation facility that are involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling and lubrication), equipment cleaning operations or deicing operations.

Note: the term "deicing" in this permit will generally be used to mean both deicing (removing frost, snow or ice) and anti-icing (preventing accumulation of frost, snow or ice) activities, unless specific mention is made otherwise.

8.S.2.2 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.4 and Part 8.S.5.3) This permit does not authorize the discharge of aircraft, ground vehicle, runway and equipment wash waters; nor the dry weather discharge of deicing chemicals. Such discharges must be covered by separate NPDES permit(s). Note that a discharge resulting from snowmelt is not a dry weather discharge. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.1.3.)

8.S.3 Multiple Operators at Air Transportation Facilities.

Air transportation facilities often have more than one operator who could discharge stormwater associated with industrial activity. Operators include the airport authority and airport tenants, including air passenger or cargo companies, fixed based operators, and other parties who routinely perform industrial activities on airport property.

8.S.3.1 ***Permit Coverage/Submittal of NOIs.*** Where an airport transportation facility has multiple industrial operators that discharge stormwater, each individual operator must obtain coverage under an NPDES stormwater permit. To obtain coverage under the MSGP, all such operators must meet the eligibility requirements in Part 1 and must submit an NOI, per Part 1.2.1.1 (or, if appropriate, a no exposure certification per Part 1.4).

8.S.3.2 ***MSGP Implementation Responsibilities for Airport Authority and Tenants.*** The airport authority, in collaboration with its tenants, may choose to implement certain MSGP requirements on behalf of its tenants in order to increase efficiency and eliminate redundancy or duplication of effort. Options available to the airport authority and its tenants for implementation of MSGP requirements include:

- The airport authority performs certain activities on behalf of itself and its tenants and reports on its activities;
- Tenants provide the airport authority with relevant inputs about tenants' activities, including deicing chemical usage*, and the airport authority compiles and reports on tenants' and its own activities;

- Tenants independently perform, document and submit required information on their activities.

*Tenants who report their deicing chemical usage to the airport authority and rely on the airport authority to perform monitoring should not check the glycol and urea use box on their NOI forms.

8.S.3.3 ***SWPPP Requirements.*** A single comprehensive SWPPP must be developed for all stormwater discharges associated with industrial activity at the airport before submittal of any NOIs. The comprehensive SWPPP should be developed collaboratively by the airport authority and tenants. If any operator develops a SWPPP for discharges from its own areas of the airport, that SWPPP must be coordinated and integrated with the comprehensive SWPPP. All operators and their separate SWPPP contributions and compliance responsibilities must be clearly identified in the comprehensive SWPPP, which all operators must sign and certify per Part 5.2.7. As applicable, the SWPPP must clearly specify the MSGP requirements to be complied with by:

- The airport authority for itself;
- The airport authority on behalf of its tenants;
- Tenants for themselves.

For each activity that an operator (e.g., the airport authority) conducts on behalf of another operator (e.g., a tenant), the SWPPP must describe a process for reporting results to the latter operator and for ensuring appropriate follow-up, if necessary, by all affected operators. This is to ensure all actions are taken to correct any potential deficiencies or permit violations. For example, where the airport authority is conducting monitoring for itself and its tenants, the SWPPP must identify how the airport authority will share the monitoring results with its tenants, and then follow-up with its tenants where there are any exceedances of benchmarks, effluent limits, or water quality standards. In turn, the SWPPP must describe how the tenants will also follow-up to ensure permit compliance.

8.S.3.4 ***Duty to Comply.*** All individual operators are responsible for implementing their assigned portion of the comprehensive SWPPP, and operators must ensure that their individual activities do not render another operator's stormwater controls ineffective. In addition, the standard permit conditions found in Appendix B apply to each individual operator, including B.1 Duty to Comply (which states, in part, "You [each individual operator] must comply with all conditions of this permit."). For multiple operators at an airport this means that each individual operator remains responsible for ensuring all requirements of its own MSGP coverage are met regardless of whether the comprehensive SWPPP allocates the actual implementation of any of those responsibilities to another entity. That is, the failure of the entity allocated responsibility in the SWPPP to implement an MSGP requirement on behalf of other operators does not negate the other operators' ultimate liability.

8.S.4 Additional Technology-Based Effluent Limits.

8.S.4.1 ***Good Housekeeping Measures.*** (See also Part 2.1.2.2)

8.S.4.1.1 ***Aircraft, Ground Vehicle and Equipment Maintenance Areas.*** Minimize the contamination of stormwater runoff from all areas used for aircraft, ground vehicle and equipment maintenance (including the maintenance conducted on the terminal apron and in dedicated hangers) through implementation of control measures such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive):

performing maintenance activities indoors; maintaining an organized inventory of material used in the maintenance areas; draining all parts of fluids prior to disposal; prohibiting the practice of hosing down the apron or hanger floor; using dry cleanup methods; and collecting the stormwater runoff from the maintenance area and providing treatment or recycling.

8.S.4.1.2 ***Aircraft, Ground Vehicle and Equipment Cleaning Areas.*** (See also Part 8.S.4.6) Clearly demarcate these areas on the ground using signage or other appropriate means. Minimize the contamination of stormwater runoff from cleaning areas.

8.S.4.1.3 ***Aircraft, Ground Vehicle and Equipment Storage Areas.*** Store all aircraft, ground vehicles and equipment awaiting maintenance in designated areas only and implement control measures to minimize the discharge of pollutants in stormwater from these storage areas such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): storing aircraft and ground vehicles indoors; using drip pans for the collection of fluid leaks; and perimeter drains, dikes or berms surrounding the storage areas.

8.S.4.1.4 ***Material Storage Areas.*** Maintain the vessels of stored materials (e.g., used oils, hydraulic fluids, spent solvents, and waste aircraft fuel) in good condition to prevent or minimize contamination of stormwater. Also plainly label the vessels (e.g., "used oil," "Contaminated Jet A"). To minimize contamination of precipitation/runoff from these areas, implement control measures such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): storing materials indoors; storing waste materials in a centralized location; and installing berms/dikes around storage areas.

8.S.4.1.5 ***Airport Fuel System and Fueling Areas.*** Minimize the discharge of pollutants in stormwater from airport fuel system and fueling areas through implementation of control measures such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): implementing spill and overflow practices (e.g., placing absorptive materials beneath aircraft during fueling operations); using only dry cleanup methods; and collecting stormwater runoff. If you have implemented a SPCC plan developed in accordance with the 2006 amendments to the SPCC rule, you may cite the relevant aspects from your SPCC plan that comply with the requirements of this section in your SWPPP.

8.S.4.1.6 ***Source Reduction.*** Consistent with safety considerations, minimize the use of urea and glycol-based deicing chemicals to reduce the aggregate amount of deicing chemicals used that could add pollutants to stormwater discharges. Chemical options to replace pavement deicers (urea or glycol) include (list not exclusive): potassium acetate; magnesium acetate; calcium acetate; and anhydrous sodium acetate.

8.S.4.1.6.1 ***Runway Deicing Operations.*** To minimize the discharge of pollutants in stormwater from runway deicing operations, implement source reduction control measures such as the following, where determined to be feasible and that

accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): metered application of chemicals; pre-wetting dry chemical constituents prior to application; installing a runway ice detection system; implementing anti-icing operations as a preventive measure against ice buildup; heating sand; and product substitution.

8.S.4.1.6.2 ***Aircraft Deicing Operations.*** Minimize the discharge of pollutants in stormwater from aircraft deicing operations. Determine whether excessive application of deicing chemicals occurs and adjust as necessary, consistent with considerations of flight safety. Determine whether alternatives to glycol and whether containment measures for applied chemicals are feasible. Implement control measures for reducing deicing fluid such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): forced-air deicing systems, computer-controlled fixed-gantry systems, infrared technology, hot water, varying glycol content to air temperature, enclosed-basket deicing trucks, mechanical methods, solar radiation, hangar storage, aircraft covers, and thermal blankets for MD-80s and DC-9s. Consider using ice-detection systems and airport traffic flow strategies and departure slot allocation systems where feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations. The evaluations and determinations required by this Part should be carried out by the personnel most familiar with the particular aircraft and flight operations and related systems in question (versus an outside entity such as the airport authority).

8.S.4.1.7 ***Management of Runoff.*** (See also Part 2.1.2.6) Minimize the discharge of pollutants in stormwater from deicing chemicals in runoff. To minimize discharges of pollutants in stormwater from aircraft deicing, implement runoff management control measures such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): installing a centralized deicing pad to recover deicing fluid following application; plug-and-pump (PnP); using vacuum/collection trucks (glycol recovery vehicles); storing contaminated stormwater/deicing fluids in tanks; recycling collected deicing fluid where feasible; releasing controlled amounts to a publicly owned treatment works; separation of contaminated snow; conveying contaminated runoff into a stormwater impoundment for biochemical decomposition (be aware of attracting wildlife that may prove hazardous to flight operations); and directing runoff into vegetative swales or other infiltration measures. To minimize discharges of pollutants in stormwater from runway deicing, implement runoff management control measures such as the following, where determined to be feasible and that accommodate considerations of safety, space, operational constraints, and flight considerations (list not exclusive): mechanical systems (snow plows, brushes); conveying contaminated runoff into swales and/or a stormwater impoundment; and pollution prevention practices such as ice detection systems, and airfield prewetting.

When applying deicing fluids during non-precipitation events (also referred to as "clear ice deicing"), implement control measures to prevent unauthorized discharge of pollutants (dry-weather discharges of pollutants would need coverage under an NPDES wastewater permit), or to minimize the discharge of pollutants from deicing fluids in later stormwater discharges, implement control measures such as the following, where determined to be feasible and that accommodate considerations safety, space, operational constraints, and flight considerations (list not exclusive): recovering deicing fluids; preventing the fluids from entering storm sewers or other stormwater discharge conveyances (e.g., covering storm sewer inlets, using booms, installing absorptive interceptors in the drains); releasing controlled amounts to a publicly owned treatment works Used deicing fluid should be recycled whenever practicable.

8.S.4.2 ***Deicing Season.*** You must determine the seasonal timeframe (e.g., December-February, October - March) during which deicing activities typically occur at the facility. Implementation of control measures, including any BMPs, facility inspections and monitoring must be conducted with particular emphasis throughout the defined deicing season. If you meet the deicing chemical usage thresholds of 100,000 gallons glycol and/or 100 tons of urea, the deicing season you identified is the timeframe during which you must obtain the four required benchmark monitoring event results for deicing-related parameters, i.e., BOD, COD, ammonia and pH. See also Part 8.S.7.

8.S.5 Additional SWPPP Requirements.

8.S.5.1 ***Drainage Area Site Map.*** (See also Part 5.2.2) Document in the SWPPP the following areas of the facility and indicate whether activities occurring there may be exposed to precipitation/surface runoff: aircraft and runway deicing operations; fueling stations; aircraft, ground vehicle and equipment maintenance/cleaning areas; and storage areas for aircraft, ground vehicles and equipment awaiting maintenance.

8.S.5.2 ***Potential Pollutant Sources.*** (See also Part 5.2.3) In the inventory of exposed materials, describe in the SWPPP the potential for the following activities and facility areas to contribute pollutants to stormwater discharges: aircraft, runway, ground vehicle and equipment maintenance and cleaning; and aircraft and runway deicing operations (including apron and centralized aircraft deicing stations, runways, taxiways and ramps). If deicing chemicals are used, a record of the types (including the Safety Data Sheets [SDS]) used and the monthly quantities, either as measured or, in the absence of metering, using best estimates, must be maintained. This includes all deicing chemicals, not just glycols and urea (e.g., potassium acetate), because large quantities of these other chemicals can still have an adverse impact on receiving waters. Deicing operators must provide the above information to the airport authority for inclusion with any comprehensive airport SWPPPs.

8.S.5.3 ***Vehicle and Equipment Wash Water Requirements.*** If wash water is handled in a manner that does not involve separate NPDES permitting or local pretreatment requirements (e.g., hauled offsite, retained onsite), describe the disposal method and include all pertinent information (e.g., frequency, volume, destination) in your SWPPP. Discharges of vehicle and equipment wash water are not authorized by this permit for this sector.

8.S.5.4 ***Documentation of Control Measures Used for Management of Runoff.*** Document in your SWPPP the control measures used for collecting or containing contaminated melt water from collection areas used for disposal of contaminated snow.

8.S.6 Additional Inspection Requirements.

At a minimum conduct facility inspections at least monthly during the deicing season (e.g., October through April for most mid-latitude airports). If your facility needs to deice before or after this period, expand the monthly inspections to include all months during which deicing chemicals may be used. The Director may specifically require you to increase inspection frequencies.

8.S.7 Sector-Specific Benchmarks. (See also Part 6)

Table 8.S-1 identifies benchmarks that apply to Sector S. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.S-1.

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
For airports where a single permittee, or a combination of permitted facilities use more than 100,000 gallons of pure glycol in glycol-based deicing fluids and/or 100 tons or more of urea on an average annual basis, monitor the first four parameters in ONLY those outfalls that collect runoff from areas where deicing activities occur (SIC 4512-4581).	Biochemical Oxygen Demand (BOD_5)[1]	30 mg/L
	Chemical Oxygen Demand (COD)[1]	120 mg/L
	Ammonia[1]	2.14 mg/L
	pH[1]	6.0 - 9.0 s.u.

[1] These are deicing-related parameters. Collect the four benchmark samples, and any required follow-up benchmark samples, during the timeframe defined in Part 8.S.4.2 when deicing activities are occurring.

8.S.8 Effluent Limitations Based on Effluent Limitations Guidelines and New Source Performance Standards. (See also Part 6.2.2.1)

8.S.8.1 ***Airfield Pavement Deicing.*** For both existing and new "primary airports" (as defined at 40 CFR 449.2) with 1,000 or more annual non-propeller aircraft departures that discharge stormwater from airfield pavement deicing activities, there shall be no discharge of airfield pavement deicers containing urea. To comply with this limitation, such airports must do one of the following: (1) certify annually on the annual report that you do not use pavement deicers containing urea, or (2) meet the effluent limitation in Table 8.S-2.

8.S.8.2 ***Aircraft Deicing.*** Airports that are both "primary airports" (as defined at 40 CFR 449.2) and new sources ("new airports") with 1,000 or more annual non-propeller aircraft departures must meet the applicable requirements for aircraft deicing at 40 CFR 449.11(a). Discharges of the collected aircraft deicing fluid directly to waters of the U.S. are not eligible for coverage under this permit.

8.S.8.3 ***Monitoring, Reporting and Recordkeeping.*** For new and existing airports subject to the effluent limitations in Part 8.S.8.1 or 8.S.8.2 of this permit, you must comply with the applicable monitoring, reporting and recordkeeping requirements outlined in 40 CFR 449.20.

Table 8.S-2		
Industrial Activity	**Parameter**	**Effluent Limitation**
Runoff containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures	Ammonia as Nitrogen	14.7 mg/L, daily maximum

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart T – Sector T – Treatment Works.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.T.1 Covered Stormwater Discharges.

The requirements in Subpart T apply to stormwater discharges associated with industrial activity from Treatment Works as identified by the Activity Code specified under Sector T in Table D-1 of Appendix D of the permit.

8.T.2 Industrial Activities Covered by Sector T.

The requirements listed under this part apply to all existing point source stormwater discharges associated with the following activities:

8.T.2.1 ***Treatment works treating domestic sewage, or any other sewage sludge or wastewater treatment device or system used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge; that are located within the confines of a facility with a design flow of 1.0 million gallons per day (MGD) or more; or are required to have an approved pretreatment program under 40 CFR Part 403.***

8.T.2.2 ***The following are not required to have permit coverage: farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located within the facility, or areas that are in compliance with Section 405 of the CWA.***

8.T.3 Limitations on Coverage.

8.T.3.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.4) Sanitary and industrial wastewater and equipment and vehicle wash water are not authorized by this permit. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.1.3.)

8.T.4 Additional Technology-Based Effluent Limits.

8.T.4.1 ***Control Measures.*** (See also Part 2.1.2) To minimize the discharge of pollutants in stormwater, implement control measures such as the following, where determined to be feasible (list not exclusive): routing stormwater to the treatment works; or covering exposed materials (i.e., from the following areas: grit, screenings and other solids handling, storage or disposal areas; sludge drying beds; dried sludge piles; compost piles; and septage or hauled waste receiving station).

8.T.4.2 ***Employee Training.*** (See also Part 2.1.2.8) At a minimum, training must address the following areas when applicable to a facility: petroleum product management; process chemical management; spill prevention and controls; fueling procedures; general good housekeeping practices; and proper procedures for using fertilizer, herbicides, and pesticides.

8.T.5 Additional SWPPP Requirements.

8.T.5.1 ***Site Map.*** (See also Part 5.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or surface runoff: grit, screenings, and other solids handling, storage, or disposal areas; sludge drying beds; dried sludge piles; compost piles; septage or hauled waste receiving station; and storage areas for process chemicals, petroleum products, solvents, fertilizers, herbicides, and pesticides.

8.T.5.2 ***Potential Pollutant Sources.*** (See also Part 5.2.3) Document in your SWPPP the following additional sources and activities that have potential pollutants associated with them, as applicable: grit, screenings, and other solids handling, storage, or disposal areas; sludge drying beds; dried sludge piles; compost piles; septage or hauled waste receiving station; and access roads and rail lines.

8.T.5.3 ***Wastewater and Wash Water Requirements.*** If wastewater and/or vehicle and equipment wash water is not covered by another NPDES permit but is handled in another manner (e.g., hauled offsite, retained onsite), the disposal method must be described and all pertinent information (e.g., frequency, volume, destination) must be included in your SWPPP. Discharges of vehicle and equipment wash water, including tank cleaning operations, are not authorized by this permit for this sector.

8.T.6 Additional Inspection Requirements. (See also Part 3.1)

Include the following areas in all inspections: access roads and rail lines; grit, screenings, and other solids handling, storage, or disposal areas; sludge drying beds; dried sludge piles; compost piles; and septage or hauled waste receiving station.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart U – Sector U – Food and Kindred Products.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.U.1 Covered Stormwater Discharges.

The requirements in Subpart U apply to stormwater discharges associated with industrial activity from Food and Kindred Products facilities as identified by the SIC Codes specified in Table D-1 of Appendix D of the permit.

8.U.2 Limitations on Coverage.

8.U.2.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.4) The following discharges are not authorized by this permit: discharges containing boiler blowdown, cooling tower overflow and blowdown, ammonia refrigeration purging, and vehicle washing and clean-out operations. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.1.3.)

8.U.3 Additional Technology-Based Limitations.

8.U.3.1 ***Employee Training.*** (See also Part 2.1.2.8) Address pest control in your employee training program.

8.U.4 Additional SWPPP Requirements.

8.U.4.1 ***Drainage Area Site Map.*** (See also Part 5.2.2) Document in your SWPPP the locations of the following activities if they are exposed to precipitation or runoff: vents and stacks from cooking, drying, and similar operations; dry product vacuum transfer lines; animal holding pens; spoiled product; and broken product container storage areas.

8.U.4.2 ***Potential Pollutant Sources.*** (See also Part 5.2.3) Document in your SWPPP, in addition to food and kindred products processing-related industrial activities, application and storage of pest control chemicals (e.g., rodenticides, insecticides, fungicides) used on plant grounds.

8.U.5 Additional Inspection Requirements. (See also Part 3.1)

Inspect on a quarterly basis, at a minimum, the following areas where the potential for exposure to stormwater exists: loading and unloading areas for all significant materials; storage areas, including associated containment areas; waste management units; vents and stacks emanating from industrial activities; spoiled product and broken product container holding areas; animal holding pens; staging areas; and air pollution control equipment.

8.U.6 Sector-Specific Benchmarks. (See also Part 6)

Table 8.U-1 identifies benchmarks that apply to the specific subsectors of Sector U. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.U-1.		
Subsector (You may be subject to requirements for more than one Sector / Subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector U1. Grain Mill Products (SIC 2041-2048)	Total Suspended Solids (TSS)	100 mg/L
Subsector U2. Fats and Oils Products (SIC 2074-2079)	Biochemical Oxygen Demand (BOD_5)	30 mg/L
	Chemical Oxygen Demand (COD)	120 mg/L
	Nitrate plus Nitrite Nitrogen	0.68 mg/L
	Total Suspended Solids (TSS)	100 mg/L

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart V – Sector V – Textile Mills, Apparel, and Other Fabric Products.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.V.1 Covered Stormwater Discharges.

The requirements in Subpart V apply to stormwater discharges associated with industrial activity from Textile Mills, Apparel, and Other Fabric Product manufacturing as identified by the SIC Codes specified under Sector V in Table D-1 of Appendix D of the permit.

8.V.2 Limitations on Coverage.

8.V.2.1 ***Prohibition of Non-Stormwater Discharges.*** (See also Part 1.1.4) The following are not authorized by this permit: discharges of wastewater (e.g., wastewater resulting from wet processing or from any processes relating to the production process), reused or recycled water, and waters used in cooling towers. If you have these types of discharges from your facility, you must cover them under a separate NPDES permit. (EPA includes these prohibited non-stormwater discharges here solely as a helpful reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.1.3.)

8.V.3 Additional Technology-Based Limitations.

8.V.3.1 ***Good Housekeeping Measures.*** (See also Part 2.1.2.2)

8.V.3.1.1 ***Material Storage Areas.*** Plainly label and store all containerized materials (e.g., fuels, petroleum products, solvents, and dyes) in a protected area, away from drains. Minimize contamination of the stormwater runoff from such storage areas. Also consider an inventory control plan to prevent excessive purchasing of potentially hazardous substances. For storing empty chemical drums or containers, ensure that the drums and containers are clean (consider triple-rinsing) and that there is no contact of residuals with precipitation or runoff. Collect and dispose of wash water from these cleanings properly.

8.V.3.1.2 ***Material Handling Areas.*** Minimize contamination of stormwater runoff from material handling operations and areas through implementation of control measures such as the following, where determined to be feasible: using spill and overflow protection; covering fueling areas; and covering or enclosing areas where the transfer of material may occur. When applicable, address the replacement or repair of leaking connections, valves, transfer lines and pipes that may carry chemicals, dyes or wastewater.

8.V.3.1.3 ***Fueling Areas.*** Minimize contamination of stormwater runoff from fueling areas through implementation of control measures such as the following, where determined to be feasible: covering the fueling area; using spill and overflow protection; minimizing run-on of stormwater to the fueling areas; using dry cleanup methods; and treating and/or recycling stormwater runoff collected from the fueling area.

8.V.3.1.4 ***Above-Ground Storage Tank Area.*** Minimize contamination of stormwater runoff from above-ground storage tank areas, including the associated piping and valves, through implementation of control measures such as the following, where determined to be feasible (list not exclusive): regular cleanup of these areas; including measures for tanks, piping and valves explicitly in your SPCC program; minimizing runoff of stormwater from adjacent areas; restricting access to the area; inserting filters in adjacent catch basins; providing absorbent booms in unbermed fueling areas; using dry cleanup methods; and permanently sealing drains within critical areas that may discharge to a storm drain.

8.V.3.2 ***Employee Training.*** (See also Part 2.1.2.8) As part of your employee training program, address, at a minimum, the following activities (as applicable): use of reused and recycled waters, solvents management, proper disposal of dyes, proper disposal of petroleum products and spent lubricants, spill prevention and control, fueling procedures, and general good housekeeping practices.

8.V.4 Additional SWPPP Requirements.

8.V.4.1 ***Potential Pollutant Sources.*** (See also Part 5.2.3) Document in your SWPPP the following additional sources and activities that have potential pollutants associated with them: industry-specific significant materials and industrial activities (e.g., backwinding, beaming, bleaching, backing bonding, carbonizing, carding, cut and sew operations, desizing, drawing, dyeing locking, fulling, knitting, mercerizing, opening, packing, plying, scouring, slashing, spinning, synthetic-felt processing, textile waste processing, tufting, turning, weaving, web forming, winging, yarn spinning, and yarn texturing).

8.V.4.2 ***Description of Good Housekeeping Measures for Material Storage Areas.*** Document in the SWPPP your containment area or enclosure for materials stored outdoors in connection with Part 8.V.3.1.1 above.

8.V.5 Additional Inspection Requirements.

Inspect, at least monthly, the following activities and areas (at a minimum): transfer and transmission lines, spill prevention, good housekeeping practices, management of process waste products, and all structural and nonstructural management practices.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart W – Sector W – Furniture and Fixtures.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.W.1 Covered Stormwater Discharges.

The requirements in Subpart W apply to stormwater discharges associated with industrial activity from Furniture and Fixtures facilities as identified by the SIC Codes specified under Sector W in Table D-1 of Appendix D of the permit.

8.W.2 Additional SWPPP Requirements.

8.W.2.1 ***Drainage Area Site Map.*** (See also Part 5.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or surface runoff: material storage (including tanks or other vessels used for liquid or waste storage) areas; outdoor material processing areas; areas where wastes are treated, stored, or disposed of; access roads; and rail spurs.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart X – Sector X – Printing and Publishing.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.X.1 Covered Stormwater Discharges.

The requirements in Subpart X apply to stormwater discharges associated with industrial activity from Printing and Publishing facilities as identified by the SIC Codes specified under Sector X in Table D-1 of Appendix D of the permit.

8.X.2 Additional Technology-Based Effluent Limits.

8.X.2.1 ***Good Housekeeping Measures.*** (See also Part 2.1.2.2)

8.X.2.1.1 ***Material Storage Areas.*** Plainly label and store all containerized materials (e.g., skids, pallets, solvents, bulk inks, hazardous waste, empty drums, portable and mobile containers of plant debris, wood crates, steel racks, and fuel oil) in a protected area, away from drains. Minimize contamination of the stormwater runoff from such storage areas. Also consider an inventory control plan to prevent excessive purchasing of potentially hazardous substances.

8.X.2.1.2 ***Material Handling Area.*** Minimize contamination of stormwater runoff from material handling operations and areas (e.g., blanket wash, mixing solvents, loading and unloading materials) through implementation of control measures such as the following, where determined to be feasible (list not exclusive): using spill and overflow protection; covering fueling areas; and covering or enclosing areas where the transfer of materials may occur. When applicable, address the replacement or repair of leaking connections, valves, transfer lines, and pipes that may carry chemicals or wastewater.

8.X.2.1.3 ***Fueling Areas.*** Minimize contamination of stormwater runoff from fueling areas through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering the fueling area; using spill and overflow protection; minimizing runoff of stormwater to the fueling areas; using dry cleanup methods; and treating and/or recycling stormwater runoff collected from the fueling area.

8.X.2.1.4 ***Above Ground Storage Tank Area.*** Minimize contamination of the stormwater runoff from above-ground storage tank areas, including the associated piping and valves, through implementation of control measures such as the following, where determined to be feasible (list not exclusive): regularly cleaning these areas; explicitly addressing tanks; piping and valves in the SPCC program; minimizing stormwater runoff from adjacent areas; restricting access to the area; inserting filters in adjacent catch basins; providing absorbent booms in unbermed fueling areas; using dry cleanup methods; and permanently sealing drains within critical areas that may discharge to a storm drain.

8.X.2.2 ***Employee Training.*** (See also Part 2.1.2.8) As part of your employee training program, address, at a minimum, the following activities (as applicable): spent solvent management, spill prevention and control, used oil management, fueling procedures, and general good housekeeping practices.

8.X.3 Additional SWPPP Requirements.

8.X.3.1 ***Description of Good Housekeeping Measures for Material Storage Areas.*** In connection with Part 8.X.2.1.1, describe in the SWPPP the containment area or enclosure for materials stored outdoors.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart Y – Sector Y – Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.Y.1 Covered Stormwater Discharges.

The requirements in Subpart Y apply to stormwater discharges associated with industrial activity from Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries facilities as identified by the SIC Codes specified under Sector Y in Table D-1 of Appendix D of the permit.

8.Y.2 Additional Technology-Based Effluent Limits.

8.Y.2.1 ***Controls for Rubber Manufacturers.*** (See also Part 2.1.2) Minimize the discharge of zinc in your stormwater discharges. Parts 8.Y.2.1.1 to 8.Y.2.1.5 give possible sources of zinc to be reviewed and list control measures to be implemented where determined to be feasible. Implement additional control measures such as the following, where determined to be feasible (list not exclusive): using chemicals purchased in pre-weighed, sealed polyethylene bags; storing in-use materials in sealable containers, ensuring an airspace between the container and the cover to minimize "puffing" losses when the container is opened; and using automatic dispensing and weighing equipment.

8.Y.2.1.1 ***Zinc Bags.*** Ensure proper handling and storage of zinc bags at your facility through implementation of control measures such as the following, where determined to be feasible (list not exclusive): employee training on the handling and storage of zinc bags; indoor storage of zinc bags; cleanup of zinc spills without washing the zinc into the storm drain; and the use of 2,500-pound sacks of zinc rather than 50- to 100-pound sacks.

8.Y.2.1.2 ***Dumpsters.*** Minimize discharges of zinc from dumpsters through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering the dumpster; moving the dumpster indoors; and providing a lining for the dumpster.

8.Y.2.1.3 ***Dust Collectors and Baghouses.*** Minimize contributions of zinc to stormwater from dust collectors and baghouses. Replace or repair, as appropriate, improperly operating dust collectors and baghouses.

8.Y.2.1.4 ***Grinding Operations.*** Minimize contamination of stormwater as a result of dust generation from rubber grinding operations. Where determined to be feasible, install a dust collection system.

8.Y.2.1.5 ***Zinc Stearate Coating Operations.*** Minimize the potential for stormwater contamination from drips and spills of zinc stearate slurry that may be released to the storm drain. Where determined to be feasible, use alternative compounds to zinc stearate.

8.Y.2.2 ***Controls for Plastic Products Manufacturers.*** Minimize the discharge of plastic resin pellets in your stormwater discharges through implementation of control measures such as the following, where determined to be feasible (list not exclusive): minimizing spills; cleaning up of spills promptly and thoroughly; sweeping thoroughly; pellet capturing; employee education; and disposal precautions.

8.Y.3 Additional SWPPP Requirements.

8.Y.3.1 ***Potential Pollutant Sources for Rubber Manufacturers.*** (See also Part 5.2.3) Document in your SWPPP the use of zinc at your facility and the possible pathways through which zinc may be discharged in stormwater runoff.

8.Y.4 Sector-Specific Benchmarks. (See also Part 6)

Table 8.Y-1 identifies benchmarks that apply to Sector Y. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.Y-1.

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector Y1. Rubber Products Manufacturing (SIC 3011, 3021, 3052, 3053, 3061, 3069)	Total Zinc (freshwater)[2] Total Zinc (saltwater)[1]	Hardness Dependent 0.09 mg/L

[1]Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.
[2] The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 6.2.1.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	Zinc (mg/L)
0-24.99 mg/L	0.04
25-49.99 mg/L	0.05
50-74.99 mg/L	0.08
75-99.99 mg/L	0.11
100-124.99 mg/L	0.13
125-149.99 mg/L	0.16
150-174.99 mg/L	0.18
175-199.99 mg/L	0.20
200-224.99 mg/L	0.23
225-249.99 mg/L	0.25
250+ mg/L	0.26

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart Z – Sector Z – Leather Tanning and Finishing.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.Z.1 Covered Stormwater Discharges.

The requirements in Subpart Z apply to stormwater discharges associated with industrial activity from Leather Tanning and Finishing facilities as identified by the SIC Code specified under Sector Z in Table D-1 of Appendix D of the permit.

8.Z.2 Additional Technology-Based Effluent Limits.

8.Z.2.3 ***Good Housekeeping Measures.*** (See also Part 2.1.2.2)

8.Z.2.3.1 ***Storage Areas for Raw, Semiprocessed, or Finished Tannery By-products.*** Minimize contamination of stormwater runoff from pallets and bales of raw, semiprocessed, or finished tannery by-products (e.g., splits, trimmings, shavings). Store or protect indoors with polyethylene wrapping, tarpaulins, roofed storage, etc. where practicable. Place materials on an impermeable surface and enclose or put berms (or equivalent measures) around the area to prevent stormwater run-on and runoff where practicable.

8.Z.2.3.2 ***Material Storage Areas.*** Label storage containers of all materials (e.g., specific chemicals, hazardous materials, spent solvents, waste materials) and minimize contact of such materials with stormwater.

8.Z.2.3.3 ***Buffing and Shaving Areas.*** Minimize contamination of stormwater runoff with leather dust from buffing and shaving areas through implementation of control measures such as the following, where determined to be feasible (list not exclusive): implementing dust collection enclosures; implementing preventive inspection and maintenance programs; or other appropriate preventive measures.

8.Z.2.3.4 ***Receiving, Unloading, and Storage Areas.*** Minimize contamination of stormwater runoff from receiving, unloading, and storage areas. If these areas are exposed, implement control measures such as the following, where determined to be feasible (list not exclusive): covering all hides and chemical supplies; diverting drainage to the process sewer; or grade berming or curbing the area to prevent stormwater runoff.

8.Z.2.3.5 ***Outdoor Storage of Contaminated Equipment.*** Minimize contact of stormwater with contaminated equipment through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering equipment, diverting drainage to the process sewer, and cleaning thoroughly prior to storage.

8.Z.2.3.6 ***Waste Management.*** Minimize contamination of stormwater runoff from waste storage areas through implementation of control measures such as the following, where determined to be feasible (list not exclusive): covering dumpsters; moving waste management activities indoors; covering waste piles with temporary covering material such as tarpaulins or polyethylene; and

minimizing stormwater runoff by enclosing the area or building berms around the area.

8.Z.3 Additional SWPPP Requirements.

8.Z.3.1 ***Drainage Area Site Map.*** (See also Part 5.2.2) Identify in your SWPPP where any of the following may be exposed to precipitation or surface runoff: processing and storage areas of the beamhouse, tanyard, and re-tan wet finishing and dry finishing operations.

8.Z.3.2 ***Potential Pollutant Sources.*** (See also Part 5.2.3) Document in your SWPPP the following sources and activities that have potential pollutants associated with them (as appropriate): temporary or permanent storage of fresh and brine-cured hides; extraneous hide substances and hair; leather dust, scraps, trimmings, and shavings.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart AA – Sector AA – Fabricated Metal Products

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.AA.1 Covered Stormwater Discharges.

The requirements in Subpart AA apply to stormwater discharges associated with industrial activity from Fabricated Metal Products facilities as identified by the SIC Codes specified under Sector AA in Table D-1 of Appendix D of the permit.

8.AA.2 Additional Technology-Based Effluent Limits.

8.AA.2.1 ***Good Housekeeping Measures.*** (See also Part 2.1.2.2)

8.AA.2.1.1 ***Raw Steel Handling Storage.*** Minimize the generation of and/or recover and properly manage scrap metals, fines, and iron dust. Include measures for containing materials within storage handling areas.

8.AA.2.1.2 ***Paints and Painting Equipment.*** Minimize exposure of paint and painting equipment to stormwater.

8.AA.2.2 ***Spill Prevention and Response Procedures.*** (See also Part 2.1.2.4) Ensure that the necessary equipment to implement a cleanup is available to personnel. The following areas should be addressed:

8.AA.2.2.1 ***Metal Fabricating Areas.*** Maintain clean, dry, orderly conditions in these areas. Use dry clean-up techniques where practicable.

8.AA.2.2.2 ***Storage Areas for Raw Metal.*** Keep these areas free of conditions that could cause, or impede appropriate and timely response to, spills or leakage of materials through implementation of control measures such as the following, where determined to be feasible (list not exclusive): maintaining storage areas so that there is easy access in the event of a spill, and labeling stored materials to aid in identifying spill contents.

8.AA.2.2.3 ***Metal Working Fluid Storage Areas.*** Minimize the potential for stormwater contamination from storage areas for metal working fluids.

8.AA.2.2.4 ***Cleaners and Rinse Water.*** Control and clean up spills of solvents and other liquid cleaners, control sand buildup and disbursement from sand-blasting operations, and prevent exposure of recyclable wastes. Substitute environmentally benign cleaners when possible.

8.AA.2.2.5 ***Lubricating Oil and Hydraulic Fluid Operations.*** Minimize the potential for stormwater contamination from lubricating oil and hydraulic fluid operations. Use monitoring equipment or other devices to detect and control leaks and overflows where feasible. Install perimeter controls such as dikes, curbs, grass filter strips, or equivalent measures where feasible.

8.AA.2.2.6 ***Chemical Storage Areas.*** Minimize stormwater contamination and accidental spillage in chemical storage areas. Include a program to inspect containers and identify proper disposal methods.

8.AA.2.3 ***Spills and Leaks.*** (See also Part 5.2.3.3) In your spill prevention and response procedures, required by Part 2.1.2.4, pay attention to the following materials (at a minimum): chromium, toluene, pickle liquor, sulfuric acid, zinc and other water priority chemicals, and hazardous chemicals and wastes.

8.AA.3 Additional SWPPP Requirements.

8.AA.3.1 ***Drainage Area Site Map.*** (See also Part 5.2.2) Document in your SWPPP where any of the following may be exposed to precipitation or surface runoff: raw metal storage areas; finished metal storage areas; scrap disposal collection sites; equipment storage areas; retention and detention basins; temporary and permanent diversion dikes or berms; right-of-way or perimeter diversion devices; sediment traps and barriers; processing areas, including outside painting areas; wood preparation; recycling; and raw material storage.

8.AA.3.2 ***Potential Pollutant Sources.*** (See also Part 5.2.3) Document in your SWPPP the following additional sources and activities that have potential pollutants associated with them: loading and unloading operations for paints, chemicals, and raw materials; outdoor storage activities for raw materials, paints, empty containers, corn cobs, chemicals, and scrap metals; outdoor manufacturing or processing activities such as grinding, cutting, degreasing, buffing, and brazing; onsite waste disposal practices for spent solvents, sludge, pickling baths, shavings, ingot pieces, and refuse and waste piles.

8.AA.4 Additional Inspection Requirements.

8.AA.4.1 ***Inspections.*** (See also Part 3.1) At a minimum, include the following areas in all inspections: raw metal storage areas, finished product storage areas, material and chemical storage areas, spent solvents and chemical storage areas, recycling areas, loading and unloading areas, equipment storage areas, paint areas, drainage from roof and vehicle fueling and maintenance areas. Potential pollutants include chromium, zinc, lubricating oil, solvents, aluminum, oil and grease, methyl ethyl ketone, steel, and related materials.

8.AA.5 Sector-Specific Benchmarks. (See also Part 6)

Table 8.AA-1 identifies benchmarks that apply to the specific subsectors of Sector AA. These benchmarks apply to both your primary industrial activity and any co-located industrial activities.

Table 8.AA-1

Subsector (You may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector AA1. Fabricated Metal Products, except Coating (SIC 3411-3499; 3911-3915)	Total Aluminum	0.75 mg/L
	Total Iron	1.0 mg/L
	Total Zinc (freshwater)[2] Total Zinc (saltwater)[1]	Hardness Dependent 0.09 mg/L
	Nitrate plus Nitrite Nitrogen	0.68 mg/L
Subsector AA2. Fabricated Metal Coating and Engraving (SIC 3479)	Total Zinc (freshwater)[2] Total Zinc (saltwater)[1]	Hardness Dependent 0.09 mg/L
	Nitrate plus Nitrite Nitrogen	0.68 mg/L

[1]Saltwater benchmark values apply to stormwater discharges into saline waters where indicated.
[2] The freshwater benchmark values of some metals are dependent on water hardness. For these parameters, permittees must determine the hardness of the receiving water (see Appendix J, "Calculating Hardness in Receiving Waters for Hardness Dependent Metals," for methodology), in accordance with Part 6.2.1.1, to identify the applicable 'hardness range' for determining their benchmark value applicable to their facility. Hardness Dependent Benchmarks follow in the table below:

Freshwater Hardness Range	**Zinc** (mg/L)
0-24.99 mg/L	0.04
25-49.99 mg/L	0.05
50-74.99 mg/L	0.08
75-99.99 mg/L	0.11
100-124.99 mg/L	0.13
125-149.99 mg/L	0.16
150-174.99 mg/L	0.18
175-199.99 mg/L	0.20
200-224.99 mg/L	0.23
225-249.99 mg/L	0.25
250+ mg/L	0.26

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart AB – Sector AB – Transportation Equipment, Industrial or Commercial Machinery Facilities.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.AB.1 Covered Stormwater Discharges.

The requirements in Subpart AB apply to stormwater discharges associated with industrial activity from Transportation Equipment, Industrial or Commercial Machinery facilities as identified by the SIC Codes specified under Sector AB in Table D-1 of Appendix D of the permit.

8.AB.2 Additional SWPPP Requirements.

8.AB.2.1 ***Drainage Area Site Map.*** (See also Part 5.2.2) Identify in your SWPPP where any of the following may be exposed to precipitation or surface runoff: vents and stacks from metal processing and similar operations.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart AC– Sector AC – Electronic and Electrical Equipment and Components, Photographic and Optical Goods.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.AC.1 Covered Stormwater Discharges.

The requirements in Subpart AC apply to stormwater discharges associated with industrial activity from facilities that manufacture Electronic and Electrical Equipment and Components, Photographic and Optical goods as identified by the SIC Codes specified in Table D-1 of Appendix D of the permit.

8.AC.2 Additional Requirements.

No additional sector-specific requirements apply.

Part 8 – Sector-Specific Requirements for Industrial Activity

Subpart AD – Sector AD – Stormwater Discharges Designated by the Director as Requiring Permits.

You must comply with Part 8 sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Appendix A. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

8.AD.1 Covered Stormwater Discharges.

Sector AD is used to provide permit coverage for facilities designated by the Director as needing a stormwater permit, and any discharges of stormwater associated with industrial activity that do not meet the description of an industrial activity covered by Sectors A-AC.

8.AD.1.1 ***Eligibility for Permit Coverage.*** Because this sector is primarily intended for use by discharges designated by the Director as needing a stormwater permit (which is an atypical circumstance), and your facility may or may not normally be discharging stormwater associated with industrial activity, you must obtain the Director's written permission to use this permit prior to submitting an NOI. If you are authorized to use this permit, you will still be required to ensure that your discharges meet the basic eligibility provisions of this permit at Part 1.1.

8.AD.2 Sector-Specific Benchmarks and Effluent Limits. (See also Part 6)

The Director will establish any additional monitoring and reporting requirements for your facility prior to authorizing you to be covered by this permit. Additional monitoring requirements would be based on the nature of activities at your facility and your stormwater discharges.

Attachment D
SWPPP Amendments

Revision History

Name and Number	Date of Revision	History of Revision
Stormwater Pollution Prevention Plan for TA54 Maintenance Facility West EP-TA54-PLAN-1307 Revision 0	August 2015	New Stormwater Prevention Plan for TA54 Maintenance Facility West to 2015 MSGP and new Template. New LA-UR number was issued, LA-UR-15-26722
Stormwater Pollution Prevention Plan for TA54 Maintenance Facility West TA54-PLAN-1307 Revision 0	February 2016	Revise plan to incorporate annual update information. Additional information was added; organizational names and personnel, Control Values information in Section 4.7, and Attachment N-Training. Added Attachment E Quarterly Visual Assessments template s and completed assessments. Attachment F Routine Facility Inspections added template and completed inspection. New LA-UR number was issued, LA-UR-16-20470.

Attachment E

Quarterly Visual Assessments
MSGP Quarterly Visual Assessment Form

MSGP Quarterly Visual Assessment Form

Complete a separate form for each outfall you assess. When adverse weather conditions prevent the collection of a sample during the quarter, a substitute sample must be taken during the next qualifying storm event. Maintain this document in your SWPPP).

Name/Location of Facility:	Permit Number: NMR05GB21	Inspection Quarter: ☐Apr-May ☐Jun-July ☐Aug-Sep ☐ Oct-Nov

Outfall ID:	"Substantially Identical Outfall"? ☐ Yes ☐ No	If YES identify other Outfalls in the Group:

Person(s) collecting sample (PRINT): Signature :

PPT Member? ☐ Yes ☐ No

Person(s) examining sample (PRINT): Signature :

PPT Member? ☐ Yes ☐ No

Date & Time Discharge Began:	Date & Time Sample Collected:	Date & Time Sample Examined:

Substitute Sample? ☐ Yes ☐ No	If YES, identify quarter/year when sample was originally scheduled to be collected:

Was the sample collected in the first 30 minutes? ☐ Yes ☐ No If No, explain why not:

Nature of Discharge: ☐ Rainfall. Amount_____inches ☐ Snowmelt. Amount_____inches

Previous Storm Ended > 72 hours Before Start of This Storm? ☐Yes ☐ No	If No, Explain: *

PARAMETERS

Color	☐ None ☐ Other	If Other describe:

Odor ☐ None ☐ Musty ☐ Sewage ☐ Sulfur ☐ Sour ☐ Solvents ☐Petroleum/Gas ☐ Other	If Other, describe the odor:

Clarity:

☐ Clear ☐ Slightly Cloudy ☐ Cloudy ☐ Opaque ☐ Other (describe):

Floating Solids: ☐ Yes ☐ No	If YES, describe if raw or waste materials(s):
Settled Solids:** ☐ Yes ☐ No	If YES, are solids Fine ☐ Coarse ☐ If Other describe:
Suspended Solids: ☐ Yes ☐ No	If YES, are solids Fine ☐ Coarse ☐ If Other describe:
Foam (gently shake sample): ☐ Yes☐ No	If YES, on the surface ☐or ☐ in the water. Describe color:
Oil Sheen ☐ Yes ☐ No Color of Sheen:	Thickness: Flecks ☐ Globs ☐ Describe if other:
Other Obvious Indicators of Pollution Present in the sample? Yes☐ No☐	If YES describe:

SITE OBSERVATIONS

Potential pollutants found during visual examination? ☐ Yes ☐ No If Yes, list pollutant(s)and if possible indicate the source: If source is identified during collection of sample, please

notify Holly Wheeler @ 667-1312

Pollutant	Source	Pollutant	Source

NOTE: A clean up of the site should be conducted if the pollutant source is known. Was proper Notification made? ☐ Yes ☐ No

If Yes, indicate who was notified:

CORRECTIVE ACTION

If storm water contamination was identified in this sample through visual assessment, was a Corrective Action Form filled out within 24 hrs of observation? Yes☐ No☐ If No, explain why not:

Was a Corrective Action Plan identified within 14 days of the observation? Yes☐ No☐ If No, explain why not:

Other Relevant Information: Yes☐ No☐

Use the back of this form to list any concerns, comments, and/or descriptions of pictures taken, (attach additional sheets as necessary).

* The 72-hour interval can be waived when the previous storm did not yield a measurable discharge or if you are able to document (attach applicable documentation) that less than a 72-hour interval is representative of local storm events during the sampling period.

** Observe for settled solids after allowing the sample to sit for approximately one-half hour.

Attachment F
Routine Facility Inspections
MSGP Stormwater Industrial Routine Facility Inspection Report

Stormwater Industrial Routine Facility Inspection Report

General Information			
Facility Name	TA54 Area L		
NPDES Tracking No.	NMR 050000		
Date of Inspection		**Start/End Time**	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications			

Weather Information
Weather at time of this inspection? ❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snow ❑ High Winds ❑ Other: Temperature:
Have any previously unidentified discharges of pollutants occurred since the last inspection? ❑Yes ❑No **If yes, describe:**
Are there any discharges occurring at the time of inspection? ❑Yes ❑No **If yes, describe:**

Control Measures

- *Number the structural stormwater control measures identified in your SWPPP on your site map and list them below (add as many control measures as are implemented on-site). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required control measures at your facility.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	Structural Control Measure	**Control Measure is Operating Effectively?**	**If No, In Need of Maintenance, Repair, or Replacement?**	**Corrective Action Needed and Notes** (identify needed maintenance and repairs, or any failed control measures that need replacement)
1	Concrete swale along the west and north sides to the	❑Yes ❑No	❑ Maintenance ❑ Repair	

	Structural Control Measure	Control Measure is Operating Effectively?	If No, In Need of Maintenance, Repair, or Replacement?	Corrective Action Needed and Notes (identify needed maintenance and repairs, or any failed control measures that need replacement)
	CMP inlet		❑ Replacement	
2	CMP inlet along the north side	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
3	Asphalt berm north of Dome 215	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
4	Standpipe at the NE corner	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
5	Asphalt berm east of Dome 215	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
6	Asphalt swale east of Dome 215	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	
7	Trench drain NW of 54-39	❑Yes ❑No	❑ Maintenance ❑ Repair ❑ Replacement	

Areas of Industrial Materials or Activities exposed to stormwater

Below are some general areas that should be assessed during routine inspections. Customize this list as needed for the specific types of industrial materials or activities at your facility.

	Area/Activity	Inspected?	Controls Adequate (appropriate, effective, and operating)?	Corrective Action Needed and Notes
1	**Material loading/unloading and storage areas**	**❑Yes ❑No ❑ N/A**	**❑Yes ❑No**	
2	**Equipment operations and maintenance areas**	**❑Yes ❑No ❑ N/A**	**❑Yes ❑No**	
3	**Fueling areas**	**❑Yes ❑No ❑ N/A**	**❑Yes ❑No**	
4	**Outdoor vehicle and equipment washing areas**	**❑Yes ❑No ❑ N/A**	**❑Yes ❑No**	
5	**Waste handling and disposal areas**	**❑Yes ❑No ❑ N/A**	**❑Yes ❑No**	
6	**Erodible areas/construction**	**❑Yes ❑No ❑ N/A**	**❑Yes ❑No**	
7	**Non-stormwater/ illicit**	**❑Yes ❑No ❑ N/A**	**❑Yes ❑No**	

	Area/Activity	Inspected?	Controls Adequate (appropriate, effective, and operating)?	Corrective Action Needed and Notes
	connections			
8	**Salt storage piles or pile containing salt**	❑**Yes** ❑**No** ❑ **N/A**	❑**Yes** ❑**No**	
9	**Dust generation and vehicle tracking**	❑**Yes** ❑**No** ❑ **N/A**	❑**Yes** ❑**No**	
10	**(Other)**	❑**Yes** ❑**No** ❑ **N/A**	❑**Yes** ❑**No**	
11	**(Other)**	❑**Yes** ❑**No** ❑ **N/A**	❑**Yes** ❑**No**	
12	**(Other)**	❑**Yes** ❑**No** ❑ **N/A**	❑**Yes** ❑**No**	

Non-Compliance

Describe any incidents of non-compliance observed and not described above:

Additional Control Measures

Describe any additional control measures needed to comply with the permit requirements:

Notes

Use this space for any additional notes or observations from the inspection:

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my

knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print name and title: _____

Signature:_____Date:_____

Stormwater Industrial Routine Facility Inspection Report

General Information			
Facility Name	TA54 Maintenance Facility West (MFW)		
NPDES Tracking No.	NMR 050000		
Date of Inspection	12/17/2015	**Start/End Time**	11:15 / 11:37 hrs
Inspector's Name(s)	David Schrock		
Inspector's Title(s)	DSESH-EWMO DEP		
Inspector's Contact Information	505-665-6547		
Inspector's Qualifications	CISEC #1762		

Weather Information

Weather at time of this inspection?
☑ Clear ☐ Cloudy ☐ Rain ☐ Sleet ☐ Fog ☐ Snow ☐ High Winds
☐ Other: Temperature: 28 F

Have any previously unidentified discharges of pollutants occurred since the last inspection? ☐ Yes ☑ No
If yes, describe:

Are there any discharges occurring at the time of inspection? ☐ Yes ☑ No
If yes, describe:

Control Measures

- *Number the structural stormwater control measures identified in your SWPPP on your site map and list them below (add as many control measures as are implemented on-site). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required control measures at your facility.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	Structural Control Measure	Control Measure is Operating Effectively?	If No, In Need of Maintenance, Repair, or Replacement?	Corrective Action Needed and Notes (identify needed maintenance and repairs, or any failed control measures that need replacement)
1	Vegetative swale along the north side	☑ Yes ☐ No	☐ Maintenance ☐ Repair ☐ Replacement	
2	Culverts along the north side	☑ Yes ☐ No	☐ Maintenance ☐ Repair ☐ Replacement	
3	Earthen berm along the south & west sides	☑ Yes ☐ No	☐ Maintenance ☐ Repair ☐ Replacement	

Areas of Industrial Materials or Activities exposed to stormwater
Below are some general areas that should be assessed during routine inspections. Customize this list as needed for the specific types of industrial materials or activities at your facility.

	Area/Activity	Inspected?	Controls Adequate (appropriate, effective, and operating)?	Corrective Action Needed and Notes
1	**Material loading/unloading and storage areas**	☑Yes ☐No ☐ N/A	☑Yes ☐No	
2	**Equipment operations and maintenance areas**	☑Yes ☐No ☐ N/A	☑Yes ☐No	
3	**Fueling areas**	☑Yes ☐No ☐ N/A	☑Yes ☐No	
4	**Outdoor vehicle and equipment washing areas**	☐Yes ☐No ☑ N/A	☐Yes ☐No	
5	**Waste handling and disposal areas**	☑Yes ☐No ☐ N/A	☑Yes ☐No	
6	**Erodible areas/construction**	☑Yes ☐No ☐ N/A	☑Yes ☐No	
7	**Non-stormwater/ illicit connections**	☑Yes ☐No ☐ N/A	☑Yes ☐No	
8	**Salt storage piles or pile containing salt**	☐Yes ☐No ☑ N/A	☐Yes ☐No	
9	**Dust generation and vehicle tracking**	☑Yes ☐No ☐ N/A	☑Yes ☐No	
10	**(Other)**	☐Yes ☐No ☐ N/A	☐Yes ☐No	
11	**(Other)**	☐Yes ☐No ☐ N/A	☐Yes ☐No	
12	**(Other)**	☐Yes ☐No ☐ N/A	☐Yes ☐No	

DS
1-4-16

Non-Compliance

Describe any incidents of non-compliance observed and not described above:

No non-compliance incidences observed.

Additional Control Measures

Describe any additional control measures needed to comply with the permit requirements:

No additional control measures needed to comply with the permit.

Notes

Use this space for any additional notes or observations from the inspection:

Outstanding housekeeping practices observed.

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print name and title: Gail Helm Operations Manager

Signature: Gail Helm **Date:** 1/4/16

Stormwater Industrial Routine Facility Inspection Report

General Information			
Facility Name	TA54 Maintenance Facility West (MFW)		
NPDES Tracking No.	NMR 050000		
Date of Inspection	12/22/2015	**Start/End Time**	14:05 / 14:26 hrs
Inspector's Name(s)	David Schrock		
Inspector's Title(s)	DSESH-EWMO DEP		
Inspector's Contact Information	505-665-6547		
Inspector's Qualifications	CISEC #1762		

Weather Information

Weather at time of this inspection?
☑ Clear ☐Cloudy ☐ Rain ☐ Sleet ☐ Fog ☐ Snow ☐ High Winds
☐ Other: Temperature: 34 F

Have any previously unidentified discharges of pollutants occurred since the last inspection? ☐Yes ☑No
If yes, describe:

Are there any discharges occurring at the time of inspection? ☐Yes ☑No
If yes, describe:

Control Measures

- *Number the structural stormwater control measures identified in your SWPPP on your site map and list them below (add as many control measures as are implemented on-site). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required control measures at your facility.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	Structural Control Measure	Control Measure is Operating Effectively?	If No, In Need of Maintenance, Repair, or Replacement?	Corrective Action Needed and Notes (identify needed maintenance and repairs, or any failed control measures that need replacement)
1	Vegetative swale along the north side	☑Yes ☐No	☐ Maintenance ☐ Repair ☐ Replacement	
2	Culverts along the north side	☑Yes ☐No	☐ Maintenance ☐ Repair ☐ Replacement	
3	Earthen berm along the south & west sides	☑Yes ☐No	☐ Maintenance ☐ Repair ☐ Replacement	

Areas of Industrial Materials or Activities exposed to stormwater

Below are some general areas that should be assessed during routine inspections. Customize this list as needed for the specific types of industrial materials or activities at your facility.

	Area/Activity	Inspected?	Controls Adequate (appropriate, effective, and operating)?	Corrective Action Needed and Notes
1	**Material loading/unloading and storage areas**	☑Yes ☐No ☐ N/A	☑Yes ☐No	
2	**Equipment operations and maintenance areas**	☑Yes ☐No ☐ N/A	☑Yes ☐No	
3	**Fueling areas**	☑Yes ☐No ☐ N/A	☑Yes ☐No	
4	**Outdoor vehicle and equipment washing areas**	☐Yes ☐No ☑ N/A	☐Yes ☐No	
5	**Waste handling and disposal areas**	☑Yes ☐No ☐ N/A	☑Yes ☐No	
6	**Erodible areas/construction**	☑Yes ☐No ☐ N/A	☑Yes ☐No	
7	**Non-stormwater/ illicit connections**	☑Yes ☐No ☐ N/A	☑Yes ☐No	
8	**Salt storage piles or pile containing salt**	☐Yes ☐No ☑ N/A	☐Yes ☐No	
9	**Dust generation and vehicle tracking**	☑Yes ☐No ☐ N/A	☑Yes ☐No	

Non-Compliance

Describe any incidents of non-compliance observed and not described above:

No non-compliance incidences observed.

Additional Control Measures

Describe any additional control measures needed to comply with the permit requirements:

No additional control measures needed to comply with the permit.

Notes

Use this space for any additional notes or observations from the inspection:

Outstanding housekeeping practices observed.

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print name and title: Gail Helm Ops. Manager

Signature: Gail Helm **Date:** 1/21/16

Attachment G
Annual Reports and Corrective Actions

Internal Certification - 2015 Corrective Action Report(s)

(TA54 Sector P documentation to the 2015 MSGP Annual Report)

Per this SWPPP Section 3.1.3 requirement, 2015 MSGP Comprehensive Corrective Action Report(s) dated 10/3/2015 through 1/25/2015 were Identified and documented in accordance with the ENV-RCRA-QP-022, MSGP Corrective Actions.

I certify under penalty of law that this document and Corrective Action Report(s) were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information attached. Based on my inquiry of the person or persons who manage the system, or these persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Barry Walker

Environmental and Waste Management, Maintenance Manager

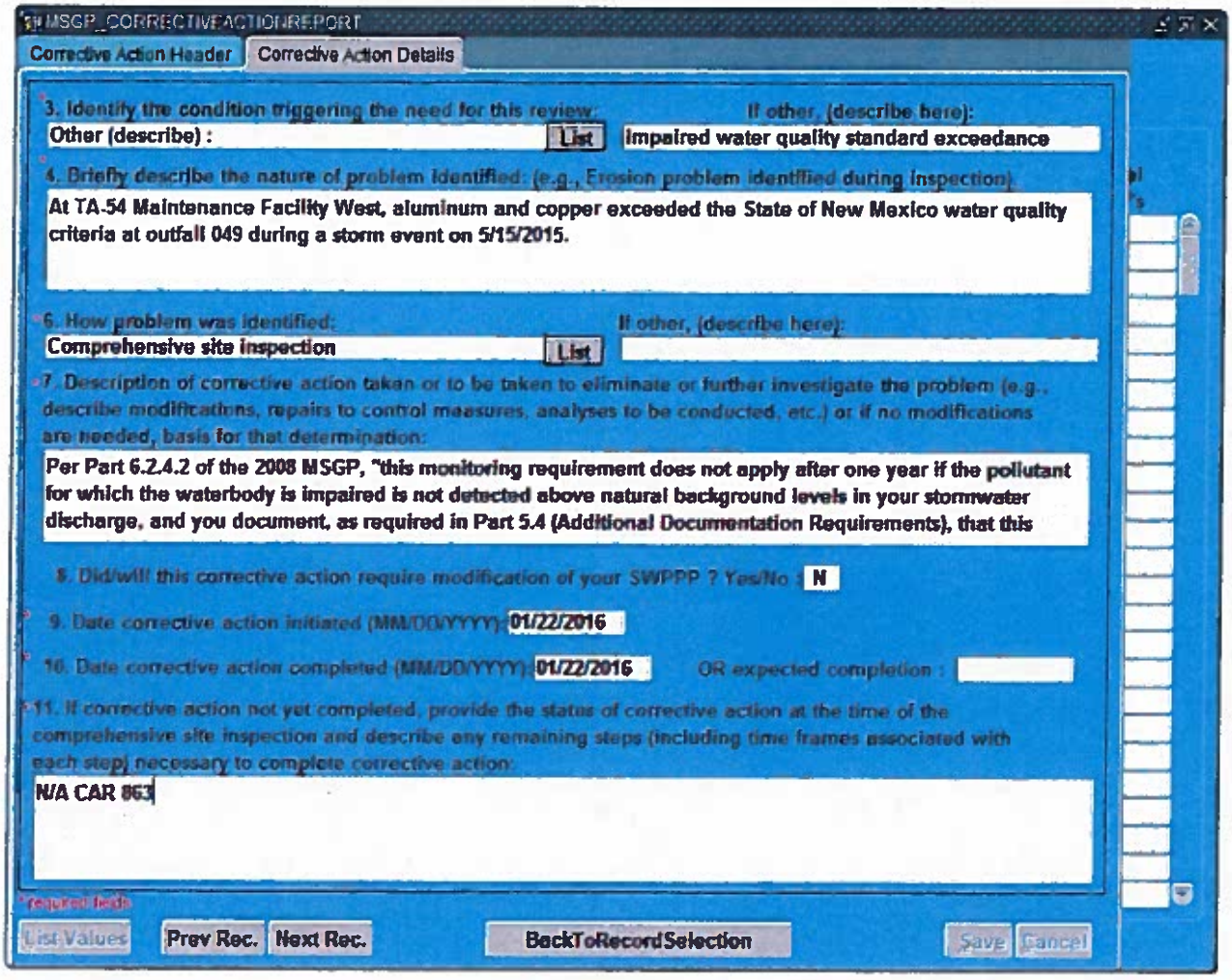
Los Alamos National Laboratory



Manager Signature

1/27/16

Date



Continuation 7. Description:

Per Part 6.2.4.2 of the 2008 MSGP, "this monitoring requirement does not apply after one year if the pollutant for which the waterbody is impaired is not detected above natural background levels in your stormwater discharge, and you document, as required in Part 5.4 (Additional Documentation Requirements), that this pollutant is not expected to be present above natural background levels in your discharge." Therefore, LANL will no longer monitor for aluminum or copper at outfall 049. A background study was provided as part of the 2010 Annual Report submitted to EPA on November 4, 2010 (ENV-RCRA-10-215, LA-UR # 10-07291, Storm Water Background Concentrations for MSGP Pollutants of Concern).

Attachment H
Sampling Data

Attachment I
Standard Operating and Maintenance Procedures

Title	Name	Modified
DOP EWMO INDUSTRIAL TRUCK AND EQUIPMENT REFUELING AND RECHARGING	EP-DIV-DOP-20085	9/30/2013
DOP EWMO DIVISION SPECIFIC FORKLIFT AND DRUM HANDLER EQUIPMENT OPERATIONS	EP-DIV-DOP-20086	4/15/2015
AOP DISCOVERY OF AN AIRBORNE, LIQUID, AND/OR SOLID MATERIAL RELEASE OR SPILL	EP-DIV-RM-AOP-20201	12/9/2013
AOP SEVERE WEATHER	EP-DIV-RM-AOP-20203	12/9/2013
AOP WASTE CONTAINER QUESTIONABLE INTEGRITY	EP-DIV-RM-AOP-20204	12/9/2013
AOP EWMO AREA EMERGENCY RESPONSE	EP-DIV-RM-ERP-20200	10/8/2015
ENVIRONMENTAL PROGRAMS DIRECTORATE TRAINING PROGRAM PLAN	EP-DIR-PLAN-10008	4/8/2015
EWMO DIVISION BUILDING EMERGENCY PLAN (BEP)	EP-DIV-BEP-20048	9/22/2015
EWMO SNOW REMOVAL PLAN	EP-DIV-PLAN-20036	11/22/2013
PLAN SEASONAL FACILITY PRESERVATION PLAN	EP-DIV-PLAN-20191	10/1/2015
F-SMA-2 STORM WATER CONTROLS	EP-DIV-PLAN-20195	7/7/2015
TA-54 Maintenance Facility STORMWATER POLLUTION PREVENTION PLAN	TA54-PLAN-1307	02/04/2016
IWD TA-50-54 All Labor Support To Spray Micro Blaze	WO 00512757-01	FY 15
DESHS-EWMO-WMC-IWD	Waste Management Coordinator daily activities	FY 15
LANL Waste Management (Tools)	P409	7/30/15

EWMO Industrial Truck and Equipment Refueling and Recharging

Effective Date: 09/30/13

Hazard Class: ☐ Low ☒ Moderate ☐ High/Complex

Usage Mode: ☐ Reference ☐ UET ☒ Both UET & Reference

The Responsible Manager has determined that the following organizations' review/concurrence is required for the initial document, and for major revisions, a same type and level review is required. Review documentation is contained in the Document History File:

Engineering
Fire Protection Engineer
Industrial Hygiene and Safety
LTP SOS
LTP SSS Operations Manager
Quality Assurance
RP-1
Site Support Contractor
SOM

Responsible Manager, EWMO Facility Operations Director

Steven M. Henry	/ 219172	/ /s/ Steven Henry	/ 09/19/13
Name (print)	Z#	Signature	Date

Classification Review: ☐ N/A ☐ Unclassified ☐ UCNI ☐ Classified _____

Teri Tingey	/ 200975	/ /s/ Teri Tingey	/ 09/17/13
Name (print)	Z#	Signature	Date

Working Copy / Information Only (circle one)

Initials / Date: _____ /_____

This document fully satisfies the requirements of P300, Integrated Work Management, in order to systematically describe the work activity, the associated hazards, and the controls that **MUST** be employed to mitigate the risks.

REVISION HISTORY

Document No./Revision No.	Issue Date	Action	Description
SWO-POLICY-0101, R.0	April 2005	Revision 2	Refueling requirements for Area G and L
EP-AREAG-FO-DOP-0603, R.0	Approved for Training	Major Revision	Document has been revised from the previous policy for use in Area G and L. Incorporated are steps for refueling and recharging (Gas diesel, LP, electric Industrial Trucks and Equipment). This procedure supersedes SWO-POLICY-0101.
EP-AREAG-FO-DOP-0603, R.1	Approved for Training	Minor Revision	Language added to capture Set-Up of a Designated Refueling area in Area G. New Attachment for documenting set-up of designated refueling area. Minor editorial changes.
EP-AREAG-FO-DOP-0603, R.2	Approved for Training	Minor Revision	Update recharging area requirements, references, and editorial updates.
EP-AREAG-FO-DOP-0603, R.3	April 21, 2010	Major Revision	This revision contains revised refueling area requirements. Rev bar are omitted total rewrite. Hazards from pre existing IWD have been incorporated into this procedure through Precautions, limitations, Warnings, and Cautions.
EP-DIV-DOP-20085, R.0	February 12, 2013	Major Revision	This revision contains additional recharging area requirements. Added RANT and WCRRF requirements for electric forklifts. Procedure elevated to a Division level. Added additional attachment for establishing designated charging areas. Revised statement that operators are trained in accordance with LANL P101-4, Forklifts and Powered Industrial Trucks. Deleted Appendix 2 and renumbered remaining Appendices. Reformatted to new procedure template and new number. This procedure will supersede EP-AREAG-FO-DOP-0603.
EP-DIV-DOP-20085, R.1	May 14, 2013	Major Revision	Revise procedure to remove the instructions for Emergency Refueling in Area G. Make editorial corrections as necessary. This revision does not introduce any new hazards.

REVISION HISTORY (continued)

Document No./Revision No.	Issue Date	Action	Description
EP-DIV-DOP-20085, R.2	September 30, 2013	Major Revision	Revise procedure to incorporate requirements of ABD-WFM-002 Rev 2.0 Technical Safety Requirements (TSRs) for Technical Area 54, Area G. No new hazards are introduced by this revision. This revision is a Total Rewrite - Revision bars are not included.

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1. PURPOSE

The procedure contains instructions and requirements for the proper and safe refueling of industrial trucks and equipment (e.g., earth movers, high and low-lift industrial trucks, All Terrain Vehicles, generators, aerial lifts, and small combustion engine equipment), removal and replacement of portable Liquefied Petroleum (LP) tanks on forklifts, and the recharging process for electric industrial trucks (high-lift and low-lift), in Environmental and Waste Management Facility Operations (EWMO) facilities: 1) Radioassay and Non-destructive Testing Facility (RANT), 2) Waste Characterization, Reduction and Repackaging Facility (WCRR), and 3) Technical Area (TA)-54 G, L and Administrative areas.

2. SCOPE

This procedure applies to personnel who supervise, schedule, and perform refueling, LP tank removal, replacement and recharging evolutions.

This procedure applies to industrial trucks and equipment, regardless of size or application, designed with an internal combustion engine using diesel, gasoline, or LP. In addition, this procedure establishes the charging requirements for electrical industrial trucks (high-lift, low-lift) powered with industrial batteries. This procedure does <u>not</u> cover the requirements for recharging the electric trailer jockey in the RANT facility.

This procedure ensures that vehicles requiring refueling and recharging are performed in designated refueling and recharging locations in accordance with the Technical Safety Requirements (TSRs) for TA-54, Area G, RANT, WCRRF, and P101-4, Forklifts and Powered Industrial Trucks.

3. PRECAUTIONS AND LIMITATIONS

3.1 <u>General</u>

- When a worker observes an unsafe condition or act that may pose an imminent danger or other safety concern/hazard, the worker has the authority and responsibility to inform the worker engaged in the work and request that the work activity be paused and/or stopped based on the risk posed to the individual, the employees, the environment, or the facility in accordance with P101-18, Procedure for Pause/Stop Work

- Activities, items, and containers **SHALL** satisfy approved design specifications, regulatory requirements, process-specific parameters, and procedural requirements. Activities, items, or containers that do not conform to the approved specifications and requirements are considered nonconforming and Nonconformance Reports (NCRs)

3.1 General (continued)

- NCRs **SHALL** be generated in accordance with P330-6, Nonconformance Reporting, as required

- Personal protective equipment (PPE) **SHALL** be worn in accordance with the radiological work permit (RWP) and this procedure.

- Personnel **SHALL** comply with facility access requirements, including those established by Health, Safety, and Radiological Protection

- Do not disturb or touch wild animals, dead animals, nesting areas, or droppings to avoid biological threats (e.g., snakes, rodents, rodent droppings, Hanta virus, Bubonic plague, spiders, West Nile virus and molds)

- If exposed to inclement weather (lightning or thunder storm), stop, and seek shelter in a building, structure or vehicle, and/or crouching on the ground

- Refueling **SHALL** not be conducted during inclement weather (lightning or thunder storm)

- Supervision **SHALL** be notified if this procedure cannot be performed as written.

- To comply with the intent of the As Low As Reasonably Achievable (ALARA) Program, all personnel **SHALL** apply the principles of time, distance, and shielding when working with/near radiological materials.

- When freezing temperatures exist outdoors, precautions should be taken (proper PPE, gloves) to protect hands from being exposed to steel surfaces and/or when handling LP containers.

- Avoid slips, trips, and falls by wearing the proper footwear with slip-resistant soles.

- Use handrails when ascending or descending stairs.

- Refueling personnel may respond to incipient stage fire associated with refueling activities if trained and competent in performing the task.

- All personnel involved in this procedure are trained to the requirements of this procedure.

3.1 General (continued)

- All personnel operating power industrial trucks and/or equipment are trained in accordance with LANL P101-4, Forklifts and Powered Industrial Trucks.

- Conduct forklift operations in accordance with LANL P101-4, Forklifts and Powered Industrial Trucks and EP-DIV-DOP-20086, EWMO Division Specific Forklift and Drum Handler Equipment Operations.

- This procedure contains special procedure step markings. **($)** symbol is used to identify steps that implement Safety Basis requirements. Steps containing **($)** may not be changed without Engineering approval to ensure the safety envelope is maintained.

- When refueling is conducted with liquid fuels (gas) minimize static conditions by ensuring vehicle is grounded and the person refueling should assure that they stay in contact with dispensing nozzles, especially when atmospheric conditions are dry and cool. Personnel should touch vehicle frame metal to eliminate potential static charge prior to handling and dispensing fuel from nozzle. If a tingling sensation is detected, i.e. the hair begins to stand on one's arms, then stop dispensing and leave the nozzle inside the vapor space for at least thirty seconds after the fuel flow stops.

- Not Applicable (N/A) is documented on the attachments during the performance of this procedure indicating information that is <u>not</u> required to be recorded.

3.2 <u>TA-54 Area G Specific Requirements</u>

- ABD-WFM-002, Technical Safety Requirements (TSRs) for Technical Area 54, Area G, applies for TSR cited for Technical Area 54, Area G.

- **($)** Periodic inspection/maintenance of LANL vehicles/equipment is current. [AC 5.6.6(1)]

- Refueling vehicle (Gas & Diesel) **SHALL** be limited to 500 gal. capacity of fuel in zone 4 for refueling in TA-54 Area G (see Appendix 5, Depiction of Zones and Designated Refueling Locations in Zone 4).

- Attachment 1, TA-54 Area G Criteria for Establishing a Designated Refueling Location, **SHALL** be generated prior to establishing designated refueling locations and **SHALL** be evaluated through the Unreviewed Safety Question process with concurrence from the Fire Protection Engineer (FPE) and the Environmental and Waste Management Operation Facility Operations Director (EWMO- FOD) or designee on Attachment 1.

3.2 TA-54 Area G Specific Requirements (continued)

NOTE *LCO 3.5.1 is not applicable to refueling locations involving only propane cylinders. The LCO separation distance is not applicable to the hose between the refueling vehicle and the vehicle/equipment undergoing refueling, or to refueling vehicles located downhill from the RETRIEVAL AREAS.*

- **($)** Minimum Refueling Separation Distances between vehicle/equipment refueling locations and DEFINED AREAs **SHALL** meet the following criteria: [LCO 3.5.1]

Capacity of Refueling Vehicle at Refueling Location	Minimum Refueling Separation Distance to DEFINED AREA with non-metal waste containers (ft)	Minimum Refueling Separation Distance to DEFINED AREA with only METAL CONTAINERS (ft)
> 7 gal. and ≤100 gal.	43	22
> 100 gal. and ≤ 500 gal.	71	45
> 500 gal. and ≤ 5,000 gal.	203	141

- Minimum Refueling Separation Distances **SHALL** be VERIFIED per EP-AREAG-FO-DOP-1179, TA-54 Area G Defined Area Verification Requirements.

- **($)** Refueling vehicles with an inventory of greater than 100 gal. of flammable liquid **SHALL** be escorted and follow a designated route per EP-AREAG-FO-AP-1068, TA-54 Area G Vehicle Access, Controls, and Escort Requirements. [SAC 5.7.6]

  ($) With the exception of propane-fueled forklifts, TRANSPORTATION VEHICLES **SHALL NOT** have Material at Risk (MAR) in/on the vehicle during refueling. [SAC 5.7.2]

- No refueling **SHALL** be conducted inside domes, buildings or structures.

- During refueling, the engine **SHALL** be stopped and the operator **SHALL NOT** occupy the industrial truck or equipment.

- Open flame or ignition source is prohibited at a minimum of 25 ft from any refueling locations.

- Personnel conducting refueling must have readily available, an approved fire extinguisher that has passed current inspection.

3.3 TA-54 West RANT Specific Requirements

- ABD-WFM-008, Technical Safety Requirements (TSRs) for the Radioassay and Nondestructive Testing (RANT) Site, applies for TSR cited for RANT.

- A refueling service truck visits the site on a routine schedule to supply diesel fuel. Service to vehicles requiring diesel fuel is performed away from facilities and container storage areas.

- No propane is used at or delivered to the RANT Facility.

- **($)** Refueling operations are conducted in a designated area that has been selected to minimize the effects of a refueling accident on the container storage area, Building TA-54-38, and MLU operations, including fuel spills that may flow into these areas because of grade. This designated area is in consonance with the refueling prohibition within 30 ft of Building TA-54-38, the container storage area, and MLU operations. This control is credited for fire and explosion events. This control was determined to perform a safety function for the public and collocated worker and is protected in the TSRs as a SMP element. (AC 5.6.5)

- **($)** Only electric powered forklifts are allowed at the RANT Site when TRU waste is present outside of sealed Type B containers. An exception to this control is allowed for vehicles or equipment necessary to support non-emergency, off-normal conditions addressed in LCO 3.3, and for those vehicles described in SAC 5.7.3.B. (SAC 5.7.1.A)

- **($)** Propane, gasoline, or diesel fueled vehicles SHALL not be used inside Building TA-54-38 except when necessary to put facility in COLD STANDBY. (LCO 3.3.3)

3.4 WCRRF Specific Requirements

- ABD-WFM-006, Technical Safety Requirements (TSRs) for Waste Characterization, Reduction, and Repackaging Facility (WCRRF), applies for TSR cited for WCRRF.

- **($)** Propane, gasoline, or diesel-fueled vehicles **SHALL** not be used anywhere at the WCRRF when INVENTORY is present at the WCRRF. Exceptions: (1) Emergency vehicles in the case of any emergency. (2) Equipment with less than 5 gal. of fuel may be used for grounds maintenance and for snow and ice removal. (SAC 5.10.1.1)

- Electric forklift recharging takes place outside the building.

3.5 Gasoline and Diesel-Powered Vehicles and Equipment (TA-54 G, L, J, Admin only)

- Fuel tanks **SHALL** not be overfilled to prevent spills or fuel expanding in tank due to temperature.

- Refueling locations **SHALL** be established to ensure a minimum of 20 ft from all other combustible materials.

- Cell phones **SHALL** be turned off and **SHALL** not be used during any refueling operations.

3.6 LP Powered Vehicles and Equipment (TA-54 G, L, J, Admin only)

- LP tanks, that are removable U.S. Department of Transportation (DOT)-type LP tanks, **SHALL** not be refilled by a bulk cylinder truck within the boundary of TA-54, Area G or L. However, exchange of the tanks may take place at designated LP exchange and storage locations.

NOTE *Appendix 1 provides the Area 54 map displaying LP locations.*

- **($)** Compressed gas cylinders in storage, in transport, or in use **SHALL** be secured. [AC 5.6.11(9)]

- **($)** Compressed gas cylinders **SHALL** be stored in designated locations when not in use. [AC 5.6.11(9)]

- All full reserve and empty LP tanks **SHALL** be stored in UL-listed cabinets in one of the following locations:
  - one cabinet at the TA-54, Area G gate just north of Building 375
  - one cabinet at TA-54 Area G, Pad 10 at a minimum of 20 ft from any building
  - two cabinets each at TA-54, Area G, at a minimum of 20 ft east of Building 8 and 20 ft setback from road

- LP exchange and storage locations **SHALL** be equipped with at least one approved portable fire extinguisher having a minimum capacity of 18 lb (8.2 kg) of dry chemical with A-B-C rating. The required fire extinguisher **SHALL** be located no more than 50 ft (15 m) from the storage location

- LP tanks **SHALL** not be exchanged within any structure unless authorized by the SOM

- LP tanks **SHALL** not be exchanged near sources of heat or open flame or similar sources of ignition or near open pits, underground entrances, shafts, or similar areas

- Leak tests **SHALL** be conducted on LP service valves and LP connection coupler using a leak detection solution when exchanging LP tanks

- **($)** All reserve LP tanks **SHALL** be stored and transported with the service valve closed and protective plastic cap cover installed if equipped [AC 5.6.11(9)]

- LP forklift tanks weigh 54 lb and therefore fall under the requirements of EP-DIV-Policy-20057, Health and Safety, Manual Lift. This procedure provides all the necessary steps, warnings, precautions and approvals for proper and safe handling of LP cylinders as stated in EP-DIV-POLICY 20057 and therefore will not require additional approvals and documentation for the changing LP cylinders on forklifts in TA-54 Area G.

3.7 Battery Powered Vehicles and Equipment

- Only trained and authorized personnel **SHALL** replace industrial batteries.
- Operators **SHALL** contact the applicable Operations Center to obtain approval to relocate any forklift battery charging equipment.
- **($)** Charging locations **SHALL** be in an area where hydrogen gas does not accumulate and be kept free of combustible materials. [AC 5.6.9(2)]
- Batteries **SHALL** not be removed within any facility or structure.
- Wherever on-board equipment chargers are used, charging **SHALL** be accomplished in locations taking into account the electrical requirements of the charger and designated locations.
- When charging batteries, the battery vent caps **SHALL** not be removed.
- Industrial trucks **SHALL** be properly parked; parking brake **SHALL** be applied and key placed in the off position.
- If equipment is not equipped with a parking brake system, wheel chocks are required and **SHALL** be used.
- The battery compartment covers **SHALL** be opened to dissipate gas and heat.
- Open flame or spark is prohibited at battery charging locations.
- Metal objects (i.e., tools) **SHALL** be kept away from the battery terminals to prevent arching or sparking.
- Metal objects such as personal watches and rings **SHALL** be kept away from uncovered batteries.
- Only trained and authorized personnel **SHALL** perform maintenance service to batteries that contain liquids or gels.
- “No Smoking” in locations where battery charging is being conducted.

3.8 Hybrid (LP and Gasoline) Powered Industrial Trucks and Equipment (TA-54 G, L, J, Admin only)

- Hybrid Powered Industrial Trucks are limited to LP in Area G.

- Equipment LP bottle change out will be performed at designated LP exchange and storage locations.

4. PREREQUISITE ACTIONS

NOTE *The listed prerequisite actions may be completed in any order.*

4.1 Planning and Coordination

Supervisor

[1] **ENSURE** that the current revision of this document is available, and **IDENTIFY** the document as a Working Copy or Information Only Copy on the Title Page.

[2] **ENSURE** that the performance of this procedure is listed on the facility area schedule.

[3] **ENSURE** that a Radiological Work Permit (RWP) for the planned activity has been issued.

[4] **ENSURE** that a pre-evolution briefing is conducted for all personnel involved in the performance of this procedure, in accordance with EP-DIV-AP-0112, EWMO Pre-Job Briefings.

Operations Center

[5] **NOTIFY** personnel (e.g., PA announcement, e pagers, two-way radios) when and where refueling activity is being conducted.

4.2 Materials and Equipment

4.2.1 Special Tools and Equipment

Operator

[1] **IF** performing Section 5.3, Industrial Truck (Forklift) LP Tank Removal and Replacement (TA-54 G, L. J, Admin. Only),
THEN ENSURE that a leak test solution is available, as required:

5. PERFORMANCE—INDUSTRIAL TRUCK AND EQUIPMENT REFUELING AND RECHARGING

5.1 Refueling (TA-54 G, L, J, Admin only)

This sub-section is a stand-alone sub-section and may performed independent of or in conjunction with other Performance sections.

WARNING

Operators are prohibited from having vehicles refueled while handling and/or transporting MAR to prevent the potential of a fire or explosion, which may cause an uncontrolled release of radiological materials to the personnel and to the environment.

Operator

[1] **DETERMINE** whether vehicle requires fuel by observing fuel gauge.

[2] **OPERATE** vehicle to designated refueling location.

[3] **IF** waiting to receive fuel,
THEN TURN-OFF vehicle until directed by refueling attendant to proceed to the immediate refueling location.

WARNING

Operators are prohibited from using cell phones and are required to shut-down cell phones during refueling. Failure to comply with this requirement could lead to serious personnel injury.

[4] **WHEN** at the immediate fueling location,
THEN PERFORM a complete shutdown of the vehicle.

[5] **EXIT** the vehicle during the fueling process.

Refueling Personnel

[6] **CHECK-IN** at the applicable TA-54 Operations Center to receive locations approved for designated refueling for the vehicle/equipment type.

[7] **($) IF** the refueling vehicle has an inventory of greater than 100 gal. of fuel
THEN OBTAIN an escort and follow a designated route per EP-AREAG-FO-AP-1068. [SAC 5.7.6]

5.1 Refueling (TA-54 G, L, J, Admin only) (continued)

[8] **DISCUSS** any additional requirements before performing any refueling activities with the TA-54 Operation Center.

[9] **ENSURE** the following before refueling:

- **($)** Minimum Refueling Separation Distances per Table 5.1-1 below are met. [LCO 3.5.1]
- **($)** With the exception of forklifts, TRANSPORTATION VEHICLES have **no** Material at Risk (MAR) in/on the vehicle. [SAC 5.7.2]
- Fire extinguisher is readily available (on service truck or within 50 ft of designated refueling location)
- Refueling location **SHALL** be posted (Refueling Location) during the refueling process
- Fuel spill tray is placed under the fueling connection point
- "No Smoking" signs are posted in designated refueling locations

NOTE 1 *Normal refueling activities involve a refueling truck with a capacity of 500 gal.*

NOTE 2 **($)** *LCO 3.5.1 is not applicable to refueling locations involving only propane cylinders. The LCO separation distance is not applicable to the hose between the refueling vehicle and the vehicle/equipment undergoing refueling, or to refueling vehicles located downhill from the RETRIEVAL AREAS.* [LCO 3.5.1]

($) Table 5.1-1, Minimum Refueling Separation Distances [LCO 3.5.1]

Capacity of Refueling Vehicle at Refueling Location	Minimum Refueling Separation Distance to DEFINED AREA with non-metal waste containers (ft)	Minimum Refueling Separation Distance to DEFINED AREA with only METAL CONTAINERS (ft)
> 7 gal. and ≤ 100 gal.	43	22
> 100 gal. and ≤ 500 gal.	71	45
> 500 gal. and ≤ 5,000 gal.	203	141

5.1 Refueling (TA-54 G, L, J, Admin only) (continued)

[10] **ENSURE** that the refueling vehicle is grounded.

[11] **NOTIFY** all equipment operators to properly park, shut-down vehicle and exit the vehicle during refueling.

[12] **DETERMINE** the type of fuel the vehicle requires.

WARNING

1. **Fuel tanks SHALL <u>not</u> be overfilled to prevent spills or fuel expanding in tank due to warmer temperature.**

2. **Personnel should touch the vehicle frame metal in order to eliminate potential static charge before handling and dispensing fuel from nozzle. Failure to comply with this practice could increase the potential for static conditions and ignition or explosion of fuel vapor.**

[13] **REFUEL** vehicle.

5.2 Industrial Truck (Forklift) LP Tank Removal and Replacement (TA-54 G, L, J, Admin only)

This sub-section is a stand-alone sub-section and may be performed independently of or in conjunction with other Performance Sections.

Operator

[1] **IF** the LP fuel gauge indicator displays less than 25 %,
THEN OPERATE the vehicle to a designated LP tank exchange and storage location see Appendix 1, TA-54 G Designated LP Exchange and Storage Locations.

[2] **VERIFY** that at least one approved portable fire extinguisher having a minimum capacity of 18 lb (8.2 kg) of dry chemical with an A-B-C rating is present and operable no further than 50 ft (15 m) from the LP Tank Exchange location.

[3] **LOWER** the forks to the ground with the tines tilted forward.

[4] **TURN** the ignition switch key to the OFF position.

[5] **EXIT** the operator's cab, **PERFORM** one of the following:
- Apply the vehicle parking or hand brake
- Chock wheels to prevent inadvertent movement

WARNING

Personnel SHALL wear leather glove while performing LP tank exchange to prevent injury to hands.

CAUTION

Do not over tighten the service valve once seated. Failure to comply with this requirement will impose excessive wear on the valve seal.

[6] **TURN** the service valve on the LP tank clockwise to shutoff the LP supply, (i.e., until valve is seated and will not turn anymore).

[7] **ENTER** the equipment operator cab and START the vehicle to purge and depressurize LP fuel line.

[8] **TURN** the ignition switch to the OFF position.

5.2 Industrial Truck (Forklift) LP Tank Removal and Replacement (TA-54 G, L, J, Admin only) (continued)

[9] **TURN** the supply line coupler counter-clockwise by hand in order to loosen and remove the supply line from LP tank.

[10] **INSPECT** the rubber O-ring seal inside the coupler end for cracks and damage.

[11] **IF** the rubber seal is damaged,
THEN CONTACT supervision for guidance.

NOTE *Some trucks are equipped with a cradle swivel device that allows swinging the tank to the edge of fork truck for easy removal and replacement.*

[12] **REMOVE** the LP fastening strap securing the LP tank.

[13] **IF** equipped with a swivel cradle,
THEN UNLATCH the gate latch and swing the cradle until the LP tank is parallel with forklift.

[14] **LIFT** and **REMOVE** the empty LP tank, and **PLACE** the LP tank into the designated LP exchange/ storage location.

WARNING

1. **Maintain proper lifting position when physically handling LP tanks to avoid a back injury.**
2. **Care SHALL be exercised when handling LP tanks to prevent tanks from being dropped, thrown, rolled, or dragged. Mishandling of LP tanks may cause serious personnel injury.**
3. **Full 30# LP cylinders weigh 54 lbs. Extreme caution must be exercised by the operator when removing full cylinders from LP supply cage and placing it on the forklift to prevent back injury. The use of proper PPE and safe lifting techniques SHALL be enforced, and if a worker feels they cannot safely handle the 30# LP cylinder alone, then the two-person rule should be used.**

[15] **REMOVE** a full LP tank from the LP storage, and **VERIFY** the full status by viewing the site glass attached to top of tank (greater than 90%/full).

[16] **PERFORM** a visual inspection of the replacement LP tank, (e.g., LP valve, labels/placards visible, gauge operable, damage to tank or valve guard).

5.2 Industrial Truck (Forklift) LP Tank Removal and Replacement (TA-54 G, L, J, Admin only) (continued)

[17] **IF** the LP tank is damaged,
THEN:

[A] **LABEL** the LP tank damaged (Caution tag).

[B] **CONTACT** supervision for direction.

[18] **PLACE** the new LP tank in the LP cradle on the forklift.

[19] **VERIFY** that the LP tank is positioned with the alignment pin as illustrated in Appendix 2, Propane Tank Configuration.

[20] **VERIFY** that the cradle gate latch is secured.

[21] **IF** equipped with a swivel cradle,
THEN LIFT the cradle pin and **ROTATE** the LP tank to storage position.

CAUTION

Do not over tighten the service valve once seated. Failure to comply with this requirement will impose excessive wear on the valve seal.

[22] **CONNECT** the supply line coupler turning clockwise by hand until snug. (hand tighten only).

[23] **($) ATTACH** the fastening strap in order to secure LP tank to equipment.
[AC 5.6.11(9)]

[24] **TURN** the LP service valve counterclockwise approximately 1 and 1/2 turns to pressurize the LP line.

[25] **IF** a LP leak is noticeable (hissing, rotten egg odor/stink, visible mist),
THEN IMMEDIATELY CLOSE the LP service valve, and **CONTACT** supervision for direction.

[26] **PERFORM** a leak test using a leak detection solution at the LP coupler and service valve.

5.2 Industrial Truck (Forklift) LP Tank Removal and Replacement (TA-54 G, L, J, Admin only) (continued)

[27] **IF** LP is observed leaking (soap bubbles are visible) at the coupler,
THEN:

[A] **CLOSE** the LP service valve.

[B] **NOTIFY** supervision for direction.

[C] **WHEN** the problem is remediated,
THEN GO to Step 5.2.[22].

5.3 Recharging Electric Industrial Trucks (Forklift)

This sub-section is a stand-alone sub-section and may be performed independently of or in conjunction with other Performance sections.

Operator

[1] **OPERATE** the forklift to the designated recharging station.

[A] **($) ENSURE** the charging location is in an area where hydrogen gas does not accumulate; e.g., domes, ventilated enclosures, outdoors. [AC 5.6.9(2)]

[2] **PLACE** the forklift in the park position with the parking brake applied and the ignition switch turned OFF.

[3] **LOCATE** the battery connector end on the forklift.

[4] **REVIEW** the manufacturer's tag and charger placard to ensure that the charger and forklift have compatible voltages (48, 36, 24-volt systems).

[5] **SEPARATE** the battery connector from the forklift using the quick disconnect handle located on the connector end.

[6] **REMOVE** or **OPEN** the battery service cover during charging operations to allow the Hydrogen gas to dissipate.

NOTE *Chargers equipped with an auto charging function will activate the battery charger upon connection to battery.*

[7] **CONNECT** the battery portion of the forklift battery connector (connector end fastened to the battery) to the charger.

[8] **IF** battery charger is equipped with an automatic charging function,
THEN:

[A] **VERIFY** that the charging light is illuminated on the battery charging panel.

[B] **GO** to Step 5.3 [11].

5.3 Recharging Electric Industrial Trucks (Forklift) (continued)

[9] **SET** the charger to daily, weekly, or weekend depending on need.

NOTE *The forklift chargers have a variety of power-on devices to energize the charger. (e.g., switch, push button, and auto start)*

[10] **POWER-UP** the charger and **OBSERVE** the charging gauge to ensure that a proper connection is performed.

NOTE 1 *Battery temperature will rise during charging process.*

NOTE 2 *Some chargers are equipped with automatic charging functions and shutdown after the battery charging is complete.*

[11] **WHEN** the charging is complete,
THEN DISCONNECT battery from charging connector.

[12] **REPLACE** or **CLOSE** the battery cover.

[13] **RECONNECT** the battery to the forklift.

6. PERFORMANCE—ESTABLISHING DESIGNATED REFUELING AND RECHARGING LOCATIONS

6.1 Designated Refueling Location Set Up (TA-54 Area G only)

This sub-section is a stand-alone sub-section and may performed independent of or in conjunction with other Performance sections.

Supervisor

[1] **RECORD** the date and location of the proposed designated refueling location in Attachment 1.

[2] **ESTABLISH** the refueling location set-up in accordance with Attachment 1, TA-54 AREA G Criteria for Establishing a Designated Refueling Location, ensuring the following:

- Fire extinguisher is readily available at the designated refueling site
- **($)** Minimum Refueling Separation Distances between vehicle/equipment refueling locations and DEFINED AREAs **SHALL** meet the criteria in Table 6.1-1.
- Refueling Location is posted (Refueling Location)
- Drip-pan with absorbent for secondary containment of incidental small spills during refueling evolution in place
- Signs ("No SMOKING") posted in the designated refueling locations
- Refueling location is <u>not</u> under electrical power lines

NOTE **($)** *LCO 3.5.1 is not applicable to refueling locations involving only propane cylinders. The LCO separation distance is not applicable to the hose between the refueling vehicle and the vehicle/equipment undergoing refueling, or to refueling vehicles located downhill from the RETRIEVAL AREAS.* [LCO 3.5.1]

($) Table 6.1-1, Minimum Refueling Separation Distances [LCO 3.5.1]

Capacity of Refueling Vehicle at Refueling Location	Minimum Refueling Separation Distance to DEFINED AREA with non-metal waste containers (ft)	Minimum Refueling Separation Distance to DEFINED AREA with only METAL CONTAINERS (ft)
> 7 gal. and ≤ 100 gal.	43	22
> 100 gal. and ≤ 500 gal.	71	45
> 500 gal. and ≤ 5,000 gal.	203	141

6.1 Designated Refueling Location Set Up (TA-54 Area G only) (continued)

[3] **NOTIFY** the Fire Protection Engineer (FPE) of proposed designated refueling location.

[4] **DOCUMENT** the establishment of permanent refueling location(s) in the applicable drawing(s) from the series C56065 per EP-AREAG-FO-AP-1174, TA-54 Area G Establishing Defined Areas.

[5] **DOCUMENT** additional requirements or restrictions in accordance with the FPE in Comments section of Attachment 1.

[6] **CHECK** (√) YES or NO for each of the items listed on Attachment 1.

[7] **IF** any of the criterion in Step 6.1[2] is checked (√) NO, on Attachment 1
THEN:

[A] **DOCUMENT** the deficiency in the Comments section on Attachment 1.

[B] **CONTACT** the TA-54 Operations Center, FPE, and the CSE for guidance.

[C] **GO TO** Step 6.1[1] and **REPEAT** this section after deficiency has been resolved.

6.2 Designated Recharging Location Set Up

This sub-section is a stand-alone sub-section and may performed independent of or in conjunction with other Performance sections.

Supervisor

[1] **RECORD** the date and location of the proposed designated recharging location in Attachment 2.

[2] **ESTABLISH** the recharging location in accordance with Attachment 2, Criteria for Establishing a Designated Recharging Location and **CHECK** (√) YES or NO on Attachment 2.

- Fire protection is adequate at the recharging location
- **($)** Recharging is outdoors or inside in an area with adequate natural or mechanical ventilation to limit the accumulation of hydrogen gas in air to less that 1% hydrogen [AC 5.6.9(2)]

[3] **DOCUMENT** additional requirements or restrictions in accordance with the FPE in Comments section Attachment 2.

[4] **IF** any of the criterion in Step 6.2[2] is checked (√) NO,
THEN:

[A] **DOCUMENT** the deficiency in the Comments section on Attachment 2.

[B] **CONTACT** the TA-54 Operations Center, FPE, and the IHS for guidance.

[C] **GO TO** Step 6.2[1] and **REPEAT** this section after deficiency has been resolved.

7. POST- PERFORMANCE ACTIVITY

7.1 Disposition

Supervisor

[1] **RECORD** name, signature, Z#, and date on the applicable attachments (Attachments 1, and/or, 2).

CSE

[2] **REVIEW** the applicable attachments (Attachment 1 and/or 2) for accuracy and completeness.

[3] **RECORD** name, signature, Z#, and date on the applicable attachments (Attachments 1, and/or, 2).

FPE

[4] **REVIEW** the applicable attachments (Attachment 1 and/or 2) for accuracy and completeness.

[5] **RECORD** name, signature, Z#, and date on the applicable attachments (Attachments 1, and/or, 2).

IHS

[6] **IF** a designated recharging location was established, **THEN:**

[A] **REVIEW** Attachment 2 for accuracy and completeness.

[B] **RECORD** name, signature, Z#, and date on Attachment 2).

Shift Operations Manager

[7] **REVIEW** the applicable attachments (Attachment 1 and/or 2) for accuracy and completeness.

[8] **SUBMIT** applicable attachments (Attachment 1 and/or 2) for USQ review and **RECORD** the evaluation (e.g., USQ number) number and date completed on the applicable attachments (Attachment 1 and/or 2).

[9] **RECORD** name, signature, Z#, and date on the applicable attachments (Attachments 1, and/or, 2).

[10] **DOCUMENT** designated refueling and recharging locations at TA-54 Operations Center Logbook, as applicable.

7.1 Disposition (continued)

EWMO- FOD or Designee

[11] **IF** a designated refueling location was established, **THEN**:

[A**]** **REVIEW** Attachment 1 for accuracy and completeness.

[B**]** **RECORD** name, signature, Z#, and date on Attachment 1 for concurrence.

PIC/Supervisor

[12] **IF** any deficiencies were identified,
THEN INITIATE actions to correct the deficiency [e.g., Facility Service Request (FSR) System], and **DOCUMENT** the actions taken (e.g., FSR Issue Number) in the Comments section of the applicable attachments.

NOTE *Completing a Post-Job Review may be accomplished using the applicable P300 form or online (the preferred method since the institution has access to feedback and lessons learned http://int.lanl.gov/safety/iwmc/ [Click on the Submit IWD Part 4 Post-Job Review]).*

[13] **IF** any of the following occur:
- A new activity was completed for the first time
- A request was made by anyone involved with the performance of this procedure to perform a post-job review
- An abnormal event occurred
- A revision to an existing procedure was issued and it has been determined by the procedure owner or designee that a Post-Job Review is required

THEN PERFORM a Post-Job Review in accordance with P300.

7.2 Records Processing

Record Identification	Record Type Determination	Protection/Storage Method	Processing Instructions
Attachment 1 TA-54 Area G Criteria for Establishing a Designated Refueling Location Attachment 2 Criteria for Establishing a Designated Recharging Location	Quality Assurance (QA) Record	Management must implement a reasonable level of protection to prevent loss and degradation. Records should be maintained in a one hour fire-rated metal file cabinet when not in use.	When the records are ready for final disposition, the record is transferred to Records Management in accordance with EP-DIR-AP-10003, Records Management Procedure For ADEP Employees.

8. REFERENCES

ABD-WFM-002, Technical Safety Requirements (TSRs) for Technical Area 54, Area G

ABD-WFM-006, Technical Safety Requirements (TSRs) for Waste Characterization, Reduction, and Repackaging Facility (WCRRF)

ABD-WFM-008, Technical Safety Requirements (TSRs) for the Radioassay and Nondestructive Testing (RANT) Site

EP-AREAG-FO-AP-1068, TA-54 Area G Vehicle Access, Controls, and Escort Requirements

EP-AREAG-FO-AP-1174, TA-54 Area G Establishing Defined Areas

EP-AREAG-FO-DOP-1179, TA-54 Area G Defined Area Verification Requirements

EP-DIV-AP-0112, EWMO Pre-Job Briefings

EP-DIV-DOP-20086, EWMO Division Specific Forklift and Drum Handler Equipment Operations

EP-DIV-POLICY-20057, Health and Safety

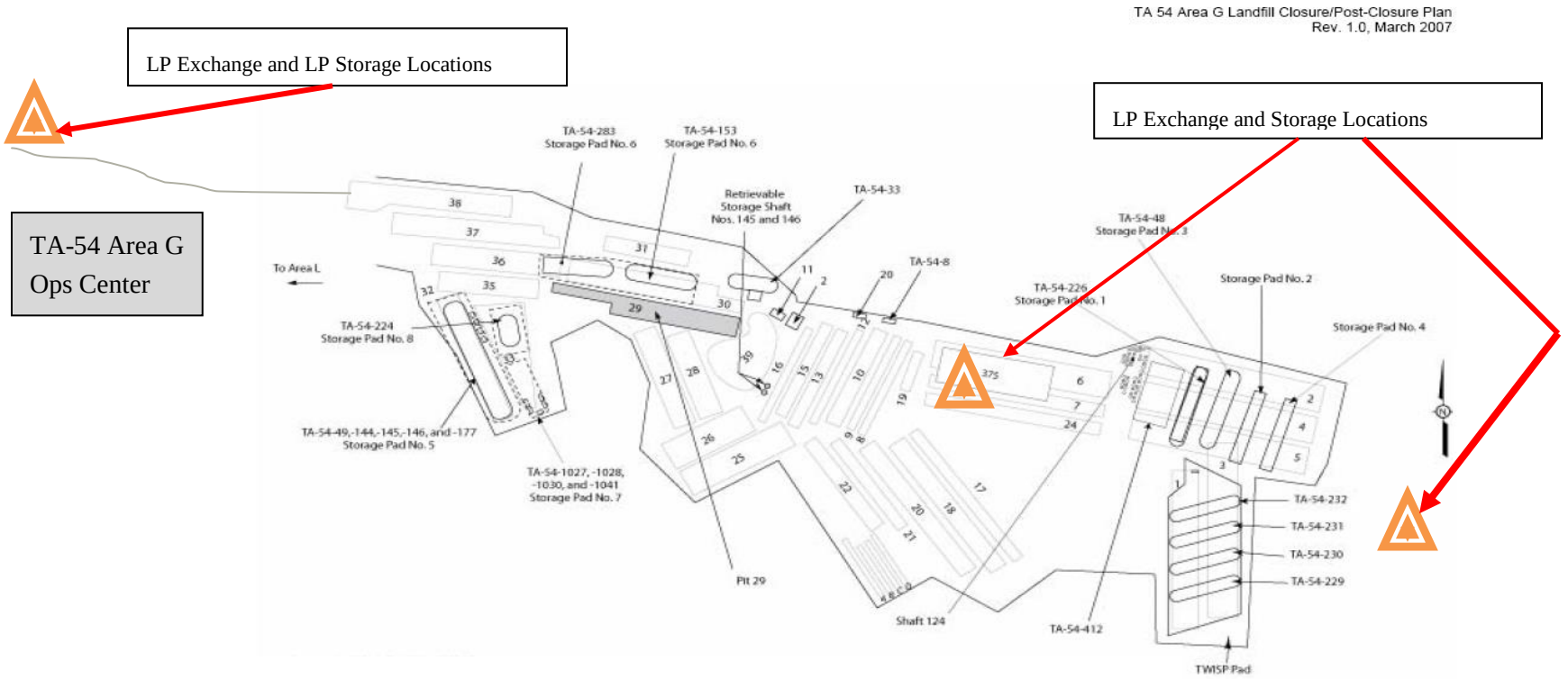
P101-4 Forklifts and Powered Industrial Trucks

P101-18, Procedure for Pause/Stop Work

P330-6, Nonconformance Reporting

APPENDIX 1
Page 1 of 1

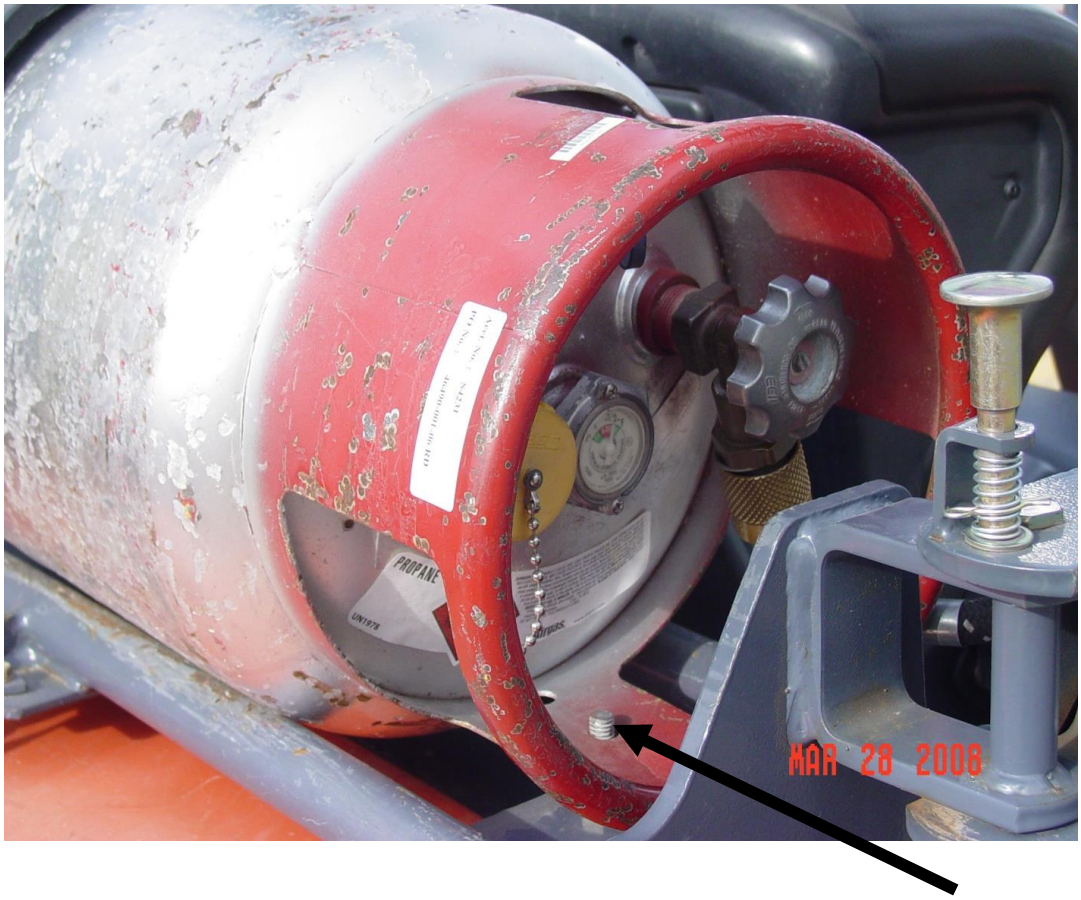
TA-54 G DESIGNATED LP EXCHANGE AND STORAGE LOCATIONS



APPENDIX 2
Page 1 of 2

PROPANE TANK CONFIGURATIONS

OLD SERIES LP TANK



NOTE *Arrow displays proper LP tank position to alignment pin*

APPENDIX 2
Page 2 of 2

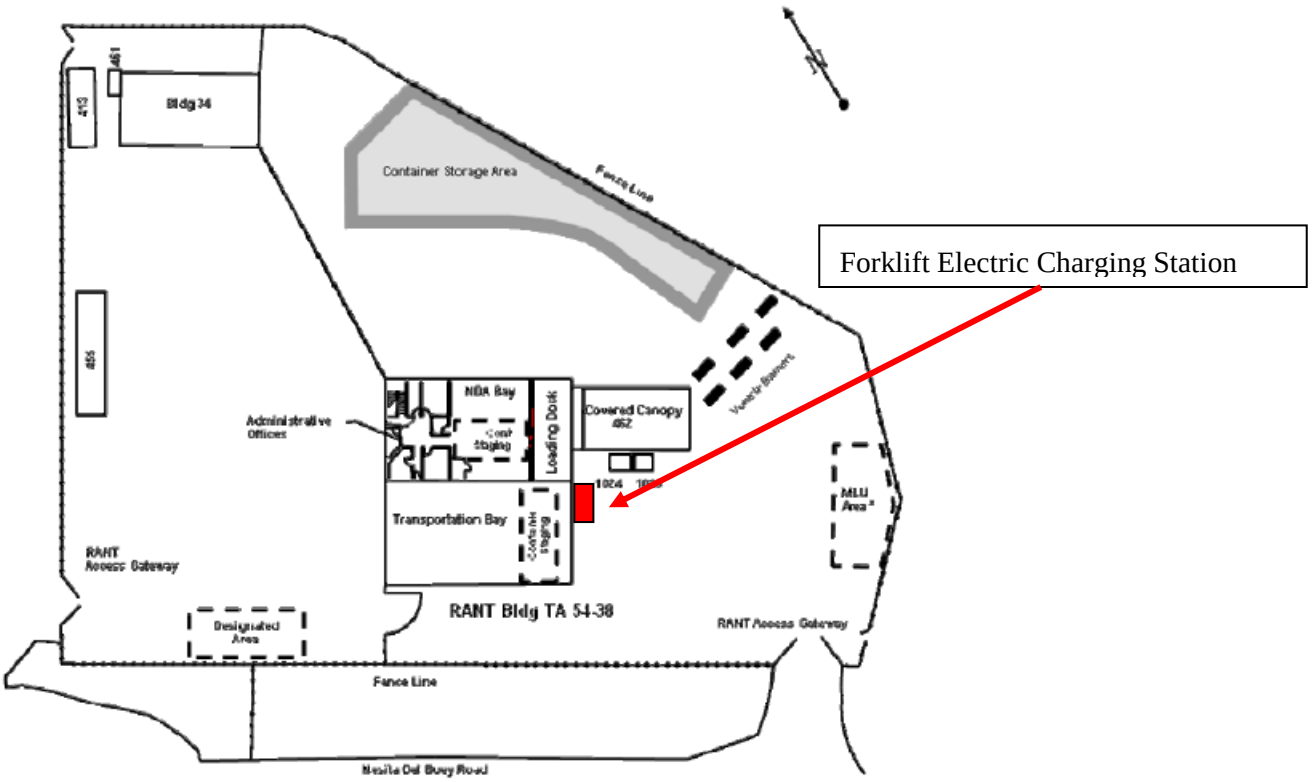
NEW SERIES LP TANK



NOTE *Arrow displays proper LP tank position to alignment pin*

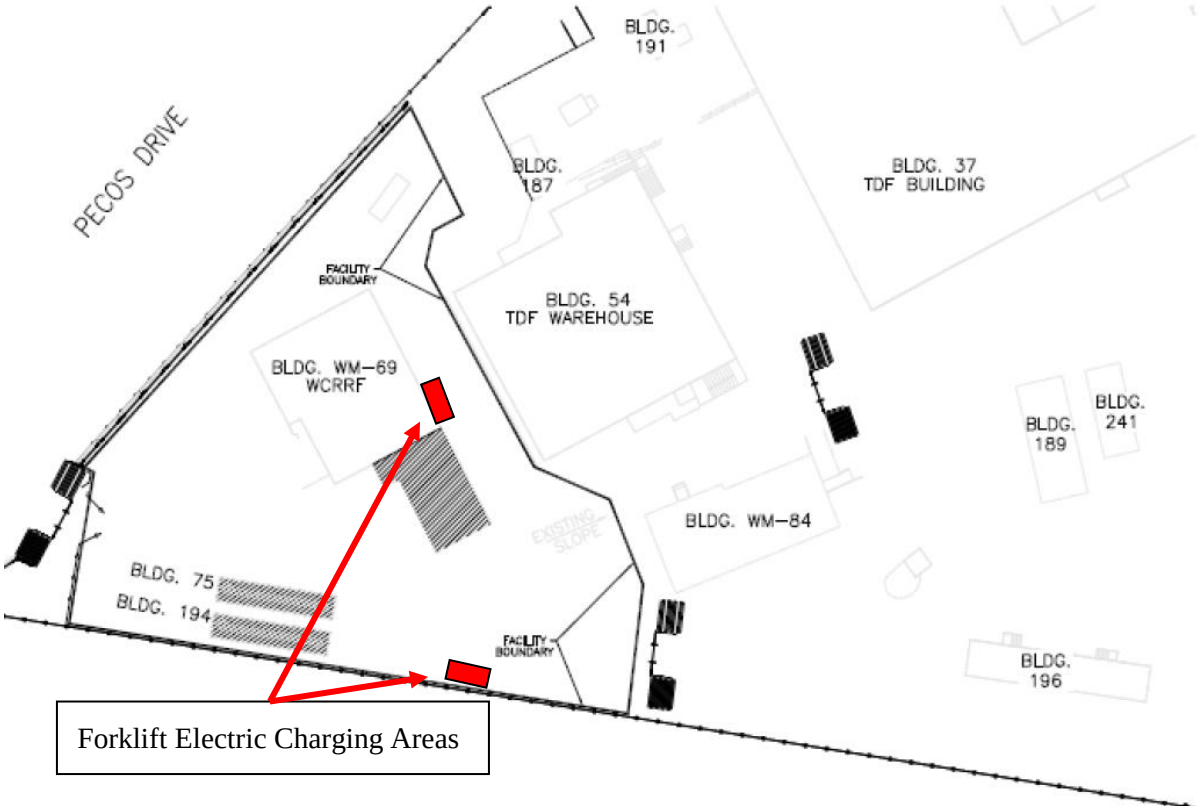
APPENDIX 3
Page 1 of 1

RANT FORKLIFT ELECTRIC CHARGING AREAS



APPENDIX 4
Page 1 of 1

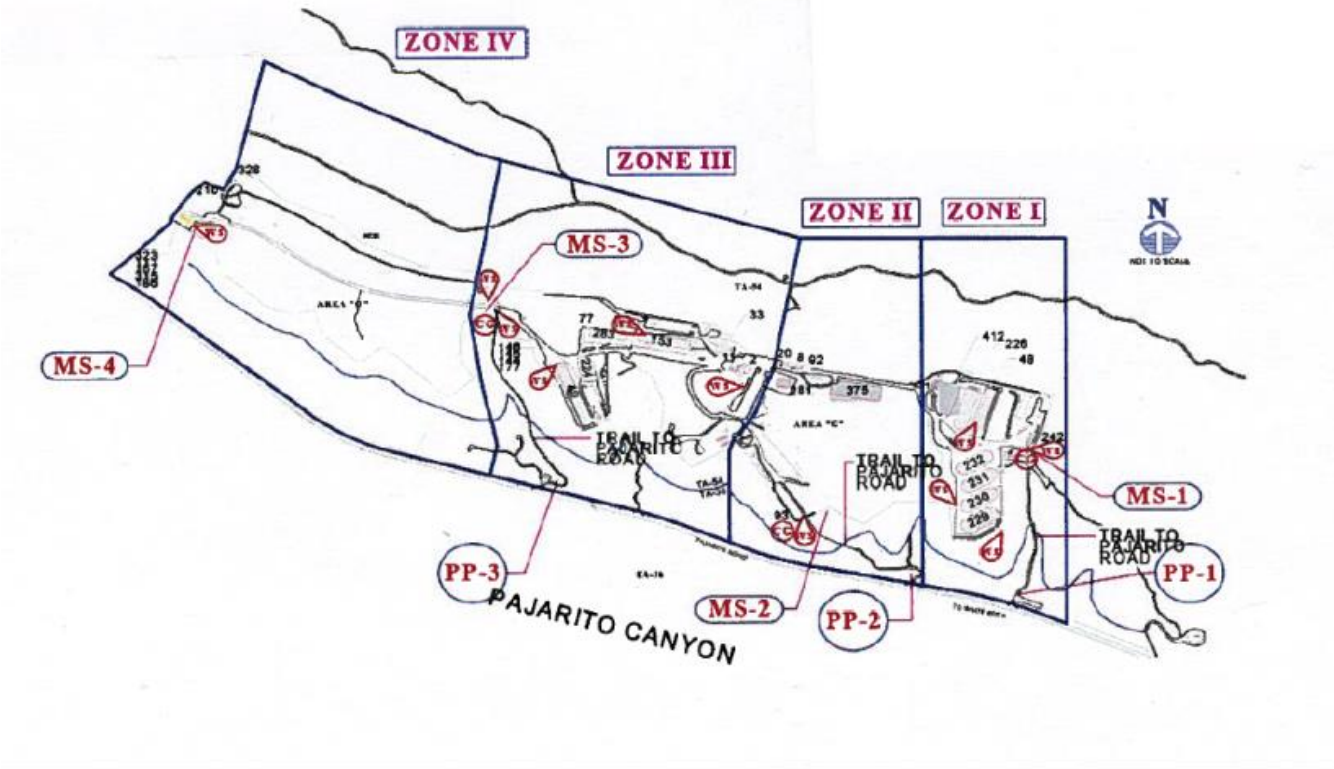
WCRRF FORKLIFT ELECTRIC CHARGING AREAS



APPENDIX 5

Page 1 of 2

DEPICTION OF ZONES AND DESIGNATED REFUELING LOCATIONS IN ZONE 4



APPENDIX 5

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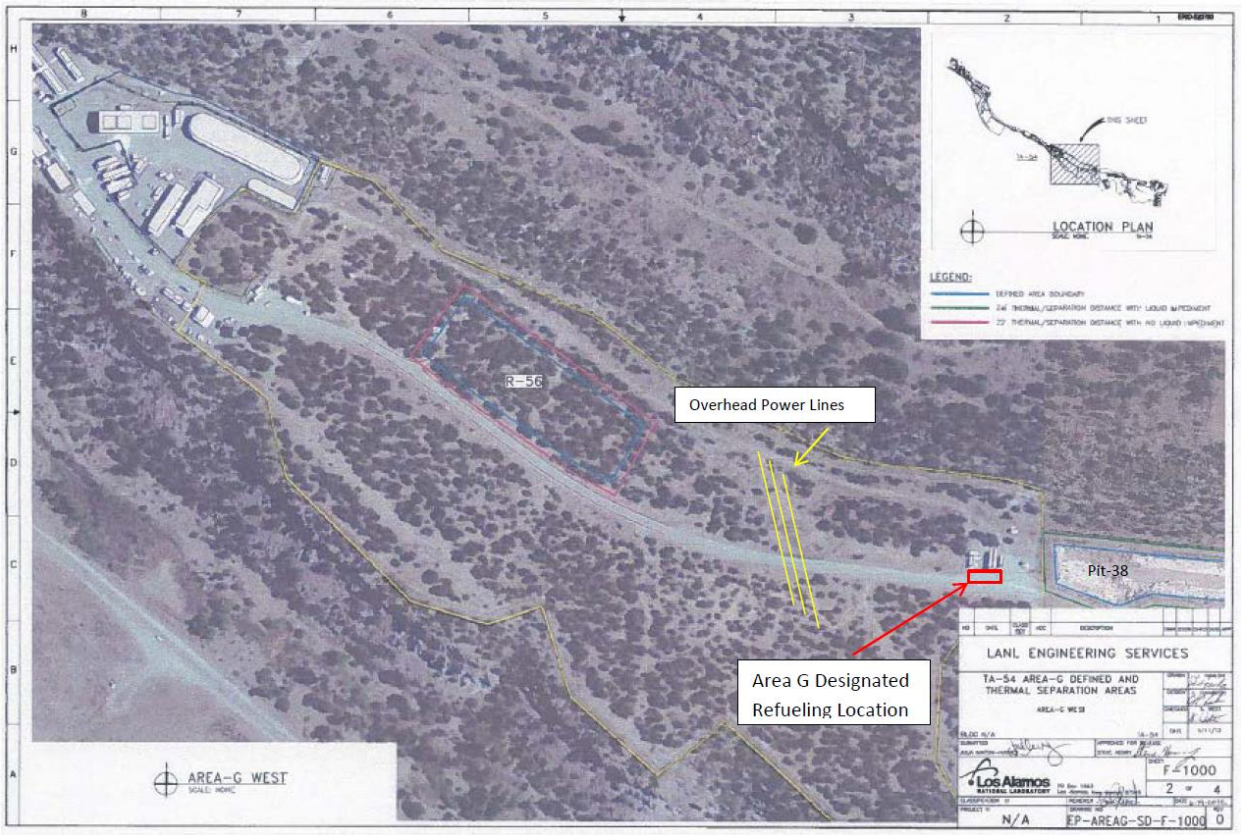

Depiction of relative location of Area G Refueling Location

ATTACHMENT 1
Page 1 of 2

TA-54 AREA G CRITERIA FOR ESTABLISHING A DESIGNATED REFUELING LOCATION

6.1[1] Date: _____ Location: _____

TA-54 AREA G Requirements	Location Satisfies Criteria YES/NO (6.1[6])	Comments
1. Fire extinguisher is readily available at designated refueling site.	☐ Yes ☐ No	
2. **($)** Minimum Refueling Separation Distances between vehicle/equipment refueling locations and DEFINED AREAs **SHALL** meet the criteria in Table 6.1-1. [LCO 3.5.1]	☐ Yes ☐ No	
3. Refueling Location is posted. (refueling location)	☐ Yes ☐ No	
4. Drip-pan with absorbent for secondary containment of incidental small spills during refueling evolution in place.	☐ Yes ☐ No	
5. Signs ("No SMOKING") posted in the designated refueling locations.	☐ Yes ☐ No	
6. No electrical overhead power lines in the vicinity.	☐ Yes ☐ No	
7. Additional Requirements/Instructions or Comments.	☐ Yes ☐ No	

ATTACHMENT 1
Page 2 of 2

6.1[1] Date: _____ Location: _____

7.1[1] Performed By: _____ / _____ / _____ / _____
Supervisor (Print) Signature Z # Date

Approvals:

7.1[3] Reviewed By: _____ / _____ / _____ / _____
CSE (Print) Signature Z # Date

7.1[5] Reviewed By: _____ / _____ / _____ / _____
FPE (Print) Signature Z # Date

7.1[8] USQ Number: _____ Date: _____

7.1[9] Reviewed By: _____ / _____ / _____ / _____
SOM (Print) Signature Z # Date

7.1[11][B] Concurrence: _____ / _____ / _____ / _____
EWMO- FOD or Designee (Print) Signature Z # Date

ATTACHMENT 2
Page 1 of 1

CRITERIA FOR ESTABLISHING A DESIGNATED RECHARGING LOCATION

6.2[1] Date: _____ Location: _____

Requirements	Location Satisfies Criteria YES/NO (6.2[4])	Comments
1. Fire protection is adequate at the recharging location.	☐ Yes ☐ No	
2. **($)** Recharging location is outdoors or inside in an area with adequate natural or mechanical ventilation to limit the accumulation of hydrogen gas in air to less than 1% hydrogen. [AC 5.6.9(2)]	☐ Yes ☐ No	

7.1[1] Performed By: _____ / _____ / ____ / ____
Supervisor (Print) Signature Z # Date

7.1[3] Reviewed By: _____ / _____ / ____ / ____
CSE (Print) Signature Z # Date

7.1[5] Reviewed By: _____ / _____ / ____ / ____
FPE (Print) Signature Z # Date

7.1[6][B] Reviewed By: _____ / _____ / ____ / ____
IHS Professional (Print) Signature Z # Date

7.1[8] USQ Number: _____ Date: _____

7.1[9] Approved By: _____ / _____ / ____ / ____
SOM (Print) Signature Z # Date

Immediate Procedure Change (IPC) Cover		
Section 1 – Originator Request		
Document No.: EP-DIV-DOP-20086	Revision No.: 5	IPC No.: 1
Title: EWMO Division Specific Forklift and Drum Handler Equipment Operations		
Description of need and requested action (Attach document mark-up and numbered additional sheets, if needed): Revise procedure to allow for SWBs to be loaded and unloaded from a transport vehicle without strapping in TA-54 Area G. This revision does not introduce any new hazards.		

Originator Name (print):	Organization:	Z#:	Date:
Ron Smart	EWMO-PRO	200480	03/31/14

Section 2 –Reviews

Discipline:	Name:	Signature:	Date:
LTP-SSS SOM	R. Harder / D. Ciocchetti	/s/ Bob Harder	04/07/14
LTP-SSS SME	Juan Garcia / Rick Martinez	/s/ Juan Garcia / /s/ Rick Martinez	04/07/14
QA	Robert Trujillo	/s/ Robert Trujillo	04/07/14
IHS	R. Stone / J. Smallwood	/s/ Johnny Smallwood	04/01/14

USQ/USI Number: EWMO-14-196-D, R.0 ☐ N/A

Section 3– Final Approvals

FOD Concurrence: Steve Henry	Print Name and Title: Steve Henry, EWMO-FOD	Z#: 219172	Date: 4/11/14
☒ Permanent ☐ Limited Use	Effective Date: 04/15/14 Expiration Date: N/A		
Comments:			
Responsible Line Manager Signature: Steve Henry	Print Name and Title: Steve Henry, EWMO-FOD	Z#: 219172	Date: 4/11/14

EWMO Division Specific Forklift and Drum Handler Equipment Operations

Effective Date: 03/21/14

Hazard Class:	☐	Low	☒	Moderate	☐	High/Complex	
Usage Mode:	☐	Reference	☐	UET	☒	Both UET & Reference	

The Responsible Manager has determined that the following organizations' review/concurrence is required for the initial document, and for major revisions, a same type and level review is required. Review documentation is contained in the Document History File:

Engineering
Industrial Hygiene and Safety
LTP Operations Managers
LTP SOS
Radiation Protection
Shift Operations Managers
Site Subcontractor Services
Quality Assurance

Responsible Manager, EWMO Facility Operations Director

Steve M. Henry	/ 219172	/ /s/ Steve Henry	/ 03/21/14
Name (print)	Z#	Signature	Date

Classification Review: ☐ N/A ☒ Unclassified ☐ UCNI ☐ Classified _____

Teri Tingey	/ 200975	/ /s/ Teri Tingey	/ 03/21/14
Name (print)	Z#	Signature	Date

Working Copy / Information Only (circle one)
Initials / Date: _____/_____

This document fully satisfies the requirements of P300, Integrated Work Management, in order to systematically describe the work activity, the associated hazards, and the controls that **MUST** be employed to mitigate the risks.

REVISION HISTORY

Document No./Revision No.	Issue Date	Action	Description
Procedure #DIV-DOP-0101, R.1	05/15/2007	Revision and change to new number system in Domino	Revision to procedure and number change
EP-DIV-DOP-02 EWMO Division Specific Forklift Operations Rev 0	1/22/2009	Revision and change to new number system in Domino	Revision to procedure and EWMO Area specific operations requirements associated with Safety Basis Documents. Supersedes DIV-DOP-0101.
EP-DIV-DOP-02 EWMO, R.1	March 19, 2009	Major Revision	Revise the procedure to incorporate process improvements and editorial corrections. SO-TA-54-SO-0102 will be canceled upon the effective date of this procedure.
EP-DIV-DOP-0111, R.0	March 28, 2010	Major Revision	Revised to correct Step 7.1[2] [D] to read, VERIFY that the safety seals and tamper indicators are not compromised. Cover Page update, clarification statement for transferring and moving palletized containers on unpaved surfaces. Removed RLW from requirements. Added additional information for calculating maximum lifting capacity for forklifts. Updated the inspection form Attachment 1. Information updates and corrections throughout the entire procedure. New Document Control number to align with Document Control scheme. Added information from EP-SO-2114 SO. No revision bars this is a total rewrite. No additional hazards were identified for this revision. This procedure will supersede standing Order EP-SO-2114.
EP-DIV-DOP-0111, R.0, IPC-1	April 27, 2011	IPC	This revision captures minor editorial changes to completing Inspection form. Rev bars and IPC notation display changes in the procedure.
EP-DIV-DOP-0111, R.1	May 24, 2011	Major Revision	Revise procedure to incorporate Revision 0.26 to the Area G TSRs. Incorporate editorial corrections as necessary. Delete reference to a Post-Job Review, this activity is a low hazard activity and therefore the requirements to have a post-job review in accordance with P300 do not apply. This revision does not introduce any new hazards.

REVISION HISTORY (continued)

Document No./Revision No.	Issue Date	Action	Description
EP-DIV-DOP-0111, R.2	July 21, 2011	Minor Revision	Revised to incorporate additional guidance under TA-54 AreaG for handling SWBs with approved lifting device, and safety precautions for handling FRPs. This revision does not introduce any new hazards. Rev bars in the left margin will display changes in the procedure.
EP-DIV-DOP-0111, R.3	December 23, 2011	Major Revision	Revise procedure as part of RANT TSR R.1.0 and TSR R.1.1 implementation. Revised TSR requirements. Made editorial corrections as necessary changing the title from WDP to EWMO. This revision does not introduce any new hazards. Since the document changes are limited to editorial corrections and RANT specific information the technical reviews have been limited to RANT.
EP-DIV-DOP-0111, R.4	February 15, 2012	Minor	Revised to incorporate additional TSR requirement for RANT, ($) RANT Critical Lift requirements apply for all payload lifts into TRUPACT II or HalfPACT containers, and for any lift of WASTE CONTAINERS requiring an elevation of greater than 4 feet. (SAC 5.7.4.A Basis). No additional hazards were identified for this revision. Rev bars in the left column display location of changes.
EP-DIV-DOP-0111, R.5	March 30, 2012	Major	Revised to update requirements for page change RANT 1.2. This procedure is considered a low hazard. Rev bars in the left column display location of changes in the procedure.
EP-DIV-DOP-20086, R.0	December 3, 2012	Major Revision	Revised procedure to incorporate additional steps for handling oversize waste containers (e.g., FRPs, Metal containers). Added requirements for operations and inspection requirements for drum lifters. Added section for Forklift Critical lifts, including Attachments 4 and 5. This procedure will cancel EP-DIV-SO-20038. A hazardous analysis was conducted for this procedure, and the controls were included in the procedure through the precautions and limitations, warnings and cautions. Number was updated to doc control numbering scheme. No rev bars total rewrite.

REVISION HISTORY (continued)

Document No./Revision No.	Issue Date	Action	Description
EP-DIV-DOP-20086, R.1	December 14, 2012	Major Revision	Revise procedure to incorporate requirement changes associated with the Area G TSR Page Change 0.33 and correct existing TSR references. Make editorial corrections as necessary. This revision does not introduce any new hazards.
EP-DIV-DOP-20086, R.1 IPC-1	January 22, 2013	IPC	Revised to correct history on Revision 0 EP-DIV-DOP-20086 to Cancel EP-DIV-SO-20063 instead of EP-DIV-SO 20038.
EP-DIV-DOP-20086, R.2	March 15, 2013	Major	Revised procedure to add additional controls for TA-54 Area G when moving and handling palletized drums. Changed word from mast to backrest carriage. Changed word from Center of Gravity to Load Center on Attachment 5. Revision Bars in left column display location of changes. No additional hazards were identified during this revision.
EP-DIV-DOP-20086, R.3	September 30, 2013	Major Revision	Revise procedure to incorporate requirements of ABD-WFM-002 Rev 2.0 Technical Safety Requirements (TSRs) for Technical Area 54, Area G. No new hazards are introduced by this revision.
EP-DIV-DOP-20086, R.4	January 29, 2014	Major Revision	Revised procedure to update requirements for critical lifts per P101-25. Revision bars in left column display location of changes. No additional hazards were identified during this revision.
EP-DIV-DOP-20086, R.5	March 21, 2014	Major Revision	Revise procedure to require securing SWBs per AC 5.6.11(8). No additional hazards were identified during this revision.
EP-DIV-DOP-20086, R.5 IPC-1	April 15, 2014	IPC	Revise procedure to allow for SWBs to be loaded and unloaded from a transport vehicle without strapping in TA-54 Area G. This revision does not introduce any new hazards.

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1. PURPOSE

This procedure provides the requirements and instructions for the proper and safe operations and inspections of forklifts and drum handlers at Environmental and Waste Management Operations (EWMO) facilities: 1) Radioassay and Nondestructive Testing Facility (RANT), 2) Waste Characterization, Reduction and Repackaging Facility (WCRRF), and 3) Technical Area (TA)-54 G, L and Administrative areas.

2. SCOPE

This procedure applies to personnel who supervise, operate, spot, and inspect forklifts and drum handlers. The procedure also identifies the operational requirements identified in EWMO area specific safety basis documents for the facilities listed above. Forklift and drum handler operations are a critical support activity and must be conducted in a safe manner to ensure the safe handling, placement, and movement of radioactive waste containers and other materials. This procedure applies to all types and sizes of powered industrial low lifts and high lifts industrial equipment used for the purpose of lifting and handling waste containers and other materials. This procedure works in conjunction with P101-4, Forklift and Powered Industrial Trucks and EP-DIV-DOP-20085, EWMO Industrial Truck and Equipment Refueling and Recharging. This procedure does not contain the instructions for conducting hoist and crane operations.

3. RESPONSIBILITIES

3.1 Forklift and Drum Handler Operator

- Performs daily forklift and drum handler inspection and documents completion on Attachment 1, EWMO Forklift Inspection Logsheet or Attachment 2, EWMO Drum Handler Inspection Logsheet
- Notifies Supervision, Person in Charge (PIC) and applicable Operations Center of deficiencies discovered during inspection or during operations
- Generates a Defective Equipment Report for Forklifts and Powered Industrial Trucks #1569 https://irm.lanl.gov/forms/Shared/1569.pdf, Attachment 3 of this procedure
- Tags equipment “Out of Service” in accordance with P315, Conduct of Operations Manual
- Inspects ancillary equipment (i.e., forklift attachments, straps, booms)
- Verifies annual inspection is current

3.1 Forklift and drum handler Operator (continued)

- Operates forklift in a safe manner in accordance with the requirements of P101-4 and additional requirements identified in this procedure

3.2 Spotter

- Authority over load operations in forklift critical lifts or large oversize loads and for Area G operations, transuranic (TRU) WASTE container lifts planned to exceed 4 ft. above the ground surface directly below the TRU WASTE container.

- Maintains line of sight and verbal communication with the forklift and drum handler operator at all times

- Provides clear direction to the forklift and drum handler operator during the performance of critical lifts and movement of oversize loads (see Appendix 1, Example Forklift and Drum Handler Spotter Hand Signals)

- Performs no other activity while assigned as a spotter

- Maintains a safe distance from the loads and forklift and drum handler while performing as a spotter

- Wears appropriate safety vest (orange or lime green color) while performing spotter duties associated with forklifts and drum handlers

3.3 PIC/Designee

- Prepares a forklift critical lift plan in accordance with Section 6.5

- Determines when a forklift critical lift is required

- Overall responsibility for forklift and drum handler operations

3.3 Responsible Line Manager/Designee

- Approves the critical lift plan

4. PRECAUTIONS AND LIMITATIONS

- Activities, items, and containers **SHALL** satisfy approved design specifications, regulatory requirements, process-specific parameters, and procedural requirements. Activities, items, or containers that do not conform to the approved specifications and requirements are considered nonconforming and Nonconformance Reports (NCRs) **SHALL** be generated in accordance with P330-6, Nonconformance Reporting, as required.

- All critical lift plans executed by LANL personnel SHALL be developed using Attachment B, LANL Critical Lift Plan, of P101-25, Cranes, Hoists, Lifting Devices, and Rigging Equipment.

- The instructions in this procedure satisfy the P101-25 ordinary lift requirements and the use of LANL Form 1611, Ordinary Lift Procedure, is not required. Not all of the items listed on Form 1611 are captured in this procedure because this procedure is performed using gantry cranes and forklifts in preapproved locations and lifts standard waste containers of a known size and volume.

- Forklift operations are governed by the LANL procedure P101-4, Forklift and Powered Industrial Trucks. P101-4 requires the completion of the applicable sections of a LANL procedure P101-25 Attachment B for critical lifts involving a forklift or powered industrial truck. lifts suspended below the forks Forklift operations not involving a critical lift of a (e.g., load suspended below the forks of the forklift) are not required to comply with the ordinary lift requirements of P101-25.

- Support Services Subcontractors executing this procedure SHALL comply with the safety and health requirements documented in contractual agreements with the LANL.

4. PRECAUTIONS AND LIMITATIONS (continued)

- When a worker observes an unsafe condition or act that may pose an imminent danger or other safety concern/hazard, the worker has the authority and responsibility to inform the worker engaged in the work and request that the work activity be paused and/or stopped based on the risk posed to the individual, the employees, the environment, or the facility in accordance with P101-18, Procedure for Pause/Stop Work.

- This procedure contains special procedure step markings. **($)** is used to identify steps that implement EWMO Safety Basis requirements. Steps containing **($)** may not be changed without Engineering approval to ensure the safety envelope is maintained.

- Not Applicable (N/A) is documented on the attachments during the performance of this procedure indicating information that is not required to be recorded.

- Forklift/drum handlers are not used as an employee man-lift, unless approved by the manufacturer and designed for that purpose.

- Personal protective equipment (PPE) **SHALL** be worn as required by Radiation Protection (RP) and by Industrial Hygiene personnel.

- Personnel **SHALL** comply with facility access requirements, including those established by Health, Safety, and Radiological Protection.

- Comply with the intent of the As Low As Reasonably Achievable (ALARA) Program; all personnel **SHALL** apply the principles of time, distance, and shielding when working with and around radiological materials.

- Do not disturb or touch wild animals, dead animals, nesting areas, or droppings to avoid biological threats (e.g., snakes, rodents, rodent droppings, Hanta virus, Bubonic Plague, spiders, West Nile virus, and molds) that may exist.

- High temperature and humidity; use of respirators and impermeable or multilayered work clothing, limited air movement; physical exertion; poor physical condition; certain medicines; and inadequate tolerance for hot workplaces may result in heat stress. In order to reduce the potential of heat stress the following activities should be practiced:
  - Allow sufficient time for proper acclimatization to heat
  - Increase fluid and electrolyte intake before and during work
  - Use an approved work/rest regimen per IHS personnel instructions
  - Recognize the early symptoms of heat stress
  - Consider heat stress when selecting personal protective equipment

4. PRECAUTIONS AND LIMITATIONS (continued)

- If exposed to inclement weather (e.g., lightning or thunderstorm), stop, and seek shelter in a grounded building, or vehicle, or by stooping close to the ground.

- When entering or exiting forklift operator cab, maintain at least three points of contact.

- Forklift operators **SHALL** be trained and qualified to operate forklifts in accordance with P101-4.

- Review radiation level postings and maps prior to crossing radiological boundaries. Limit forklift and drum handler operations inside Radiation Areas. Ensure Radiological boundary (e.g., rope, signage) is replaced after crossing the boundary. Do not drive over radiological postings.

- No person **SHALL** be allowed to stand or pass under the elevated portion (forks) of any truck, whether loaded or empty.

- Unauthorized personnel **SHALL** not be permitted to ride on powered industrial trucks.

- Forklift and drum handler operators **SHALL** be prohibited from placing arms or legs between the uprights of the mast or outside the confines of the operator cab while operating a forklift.

- Extreme care **SHALL** be used when tilting the load forward or backward, particularly when high tiering/stacking. Tilting forward while engaging an elevated load **SHALL** be prohibited except to pick up a load. An elevated load **SHALL** not be tilted forward except when the load is in a deposit position over a rack or stack. When stacking or tiering, only enough backward tilt to stabilize the load **SHALL** be used to prevent a loss of load.

4. PRECAUTIONS AND LIMITATIONS (continued)

- If any of the following criteria are met, a forklift critical lift plan must be prepared by the PIC in accordance with the requirements for critical lifts in P101-25, Cranes, Hoists, Lifting Devices, and Rigging Equipment:

- Forklift Critical Lift Criteria:
  - If the load item is damaged or upset, it would result in a release into the environment of radioactive or hazardous material exceeding the established permissible environmental limits.
  - The load item is unique and, if damaged, would be irreplaceable or not repairable, and it is vital to a system, facility, or project operation.
  - If the load item is damaged, the cost to replace or repair it or the delay in operations resulting from the damage would have a negative impact on facility, organizational, or DOE budgets to the extent that it would affect program commitments.
  - If the load were mishandled or dropped, the event would cause any of the above noted consequences to nearby installations or facilities.
  - The lift exceeds 75% of the manufacturer's rated capacity for the industrial truck or mechanized equipment to be used in the lift.
  - The load item requires special care in handling because of weight, size, asymmetrical shape, undetermined center of gravity, installation tolerances, or other unusual factors.
  - The lift is an otherwise non-critical lift that must be made in close proximity to critical or expensive items that could be damaged.
  - The lift uses two or more lift trucks or a combination of such equipment.
  - The lift truck or mechanized equipment could at any time come in contact with an energized high voltage power line.
  - The lift requires personnel to be lifted.

5. PREREQUISITE ACTIONS

5.1 Planning and Coordination

NOTE *A separate pre-job briefing is not required for this procedure when being performed in conjunction with other procedures that contain the requirements of an Integrated Work Document in accordance with P300, Integrated Work Management.*

Supervisor/SOS

[1] **ENSURE** that a pre-job briefing is conducted for all personnel involved in the performance of this procedure, in accordance with EP-DIV-AP-0112, EWMO Pre-Job Briefings.

[2] **ENSURE** that the procedure is the latest revision, and **IDENTIFY** this document as Working Copy or Information Only on the Title Page.

[3] **ENSURE** that a Radiological Work Permit (RWP) has been obtained and that workers are briefed on the RWP in accordance with P121, Radiation Protection, as applicable.

[4] **ENSURE** that the forklift and drum handler operators and spotters are proficient with the requirements of this procedure.

[5] **IF** activities involving any of the following are to be performed in a DEFINED AREA in Area G,

- Low Level Waste (LLW)
- Mixed LLW
- Hazardous Waste
- TRITIUM WASTE
- TRITIUM-CONTAMINATED WASTE
- TRU WASTE

THEN VERIFY the following with the TA-54 Operations Center:

- DEFINED AREA(s) involved in the work activity are in OPERATION MODE.
- Area G is in Staffing Condition 1 (one), as defined in EP-DIV-AP-20059, EWMO Watchbill Administration.

6. PERFORMANCE

6.1 Forklift Inspection

NOTE 1 *Forklifts that are used continuously (shift to shift) are re-inspected between shifts.*

NOTE 2 *Forklift inspections (Attachment 1) must be collected and maintained for record keeping. A process should be developed for collection and record keeping after the completion of the inspection with Person in Charge or Immediate Supervisor.*

Forklift Operator

[1] **RECORD** the following forklift information on Attachment 1:

- Forklift name
- Equipment number
- Technical Area
- Building/area
- Hour-meter reading (if applicable)
- Next PM Due Date (annual inspection)

[2] **CHECK** (√) the type of forklift being inspected (Gas, Diesel, LP, or Electric) on Attachment 1.

[3] **($) PERFORM** a daily inspection in accordance with Attachment 1. [AC 5.6.6(1)]

[4] **CHECK** (√) SAT or UNSAT to indicate whether the equipment satisfies the inspection criteria listed on Attachment 1.

[5] **IF** UNSAT was checked (√) in the previous step,
THEN:

[A] **DOCUMENT** discrepancies in the Comments section of Attachment 1.

[B] **NOTIFY** the area Shift Operations Supervisor (SOS) and the specific area Operations Center.

[C] **REQUEST** guidance and direction from the SOS.

6.1 Forklift Inspection (continued)

NOTE *In TA-54 Area G, the Operations Center will tag-out the forklift and initiate a Facility Service Request (FSR).*

[D] **COMPLETE** Attachment 3, Defective Equipment Report for Forklifts and Industrial Equipment.

[E] **SUBMIT** an FSR for maintenance along with a copy of Attachment 1.

[6] **DOCUMENT** the following information on Attachment 1:
- Shift (Days, PMs, or Mids)
- Forklift operator's name (print and signature)
- Forklift operator's Z number
- Inspection date

6.2 <u>Drum Handler Inspection</u>

NOTE 1 *Drum handlers that are used continuously (shift to shift) should be re-inspected between shifts.*

NOTE 2 *Drum handler inspections (Attachment 2) must be collected and maintained for record keeping. A process should be developed for collection and record keeping after the completion of the inspection with Person in Charge or Immediate Supervisor.*

Forklift Operator

[1] **RECORD** the following drum handler information on Attachment 2:
- Drum handler name/model number
- Equipment number
- Technical Area and building/area
- Hour-meter reading (if applicable)
- Next PM Due Date (annual inspection)

[2] **($) PERFORM** a daily inspection in accordance with Attachment 2. [AC 5.6.6(1)]

[3] **CHECK** (√) SAT or UNSAT to indicate whether the equipment satisfies the inspection criteria listed on Attachment 2.

6.2 Drum Handler Inspection (continued)

[4] **IF** UNSAT was checked (√) in the previous step,
THEN:

[A] **DOCUMENT** the discrepancies in the Comments section of Attachment 2.

[B] **NOTIFY** the area Shift Operations Supervisor (SOS) and the specific area Operations Center.

[C] **REQUEST** guidance and direction from the SOS.

NOTE *In TA-54 Area G, the Operations Center will tag-out the drum handler and initiate a FSR.*

[D] **COMPLETE** Attachment 3.

[E] **SUBMIT** an FSR for maintenance along with a copy of Attachment 2.

[5] **DOCUMENT** the following information on Attachment 2:
- Shift (Days, PMs, or Mids)
- Drum Handler operator name (print and signature)
- Drum Handler Operator's Z number
- Inspection date

6.3 <u>General Forklift Safe Operating Practices</u>

NOTE *Steps 6.3[1] through 6.3[14] may be performed out of sequence or concurrent with other steps in this section.*

Forklift Operator

[1] **REVIEW** the manufacturer's tag to <u>determine</u> the maximum lifting capacity of the forklift with and without attachments.

6.3 General Forklift Safe Operating Practices (continued)

CAUTION

Forklifts and powered industrial trucks SHALL not be altered or modified in a manner that affects their capacity or safe operation without written approval from the manufacturer.

[2] **IF** the forklift is equipped with attachments other than factory-installed attachments, **THEN ENSURE** the following information is available for the operator:
- Identification of the approved attachments
- Weight of the forklift
- The maximum lifting capacity of the forklift with the additional attachment and attachment combination at a maximum elevation with load laterally centered

[3] **REVIEW** surroundings for surface conditions, overhead clearance, and other activities to determine whether forklift operations can be conducted safely.

[4] **PLAN** the travel path before performing forklift operations.

[5] **ADJUST** the forklift tines to the maximum width while engaging the load for maximum stability of the load.

[6] **ENSURE** that the load is centered; the heaviest point is generally between the forks and closest to the backrest.

[7] **ENSURE** the forks are adjusted (height and tilt) prior to engaging a pallet/load for pickup.

6.3 General Forklift Safe Operating Practices (continued)

NOTE 1 *When calculating the maximum lifting capacity of the truck if the load center is increased, Table 6.3-1, Forklift Maximum Lifting Capacity at Various Load Centers, provides an example for reduction of maximum lifting capacity for a specified load center.*

NOTE 2 *Appendix 2, Maximum Lifting Capacity and Load Center Calculator Aid and Instructions, provides a generic table for determining your specific forklift reduced lifting capacity based upon manufactures maximum lifting capacity tag information.*

TABLE 6.3-1, FORKLIFT REDUCED MAXIMUM
LIFTING CAPACITY AT VARIOUS LOAD CENTERS (EXAMPLE)

Maximum Lifting Capacity on Manufacturer Tag	
5,000 lb **(Example only manufacturer's tag information)**	**24 in. X 5,000 lb = 120,000 in.-lb**
	Reduced Lifting Capacity
@ 30 in.	*120,000 in-lb / 30 in. = **4,000** lb*
@ 36 ins	*120,000 in-lb / 36 in. = **3,333** lb*
@48 in.	*120,000 in.-lb / 48 in. = **2,500** lb*
@60 in.	*120,000 in-lb / 60 in. = **2,000** lb*

[8] **DETERMINE** whether the load is within the safe lifting capacity of the forklift using Appendix 2 as necessary.

[9] **IF** the reduced lifting capacity for a specific load **CANNOT** be determined,
THEN NOTIFY SOS and Industrial Safety for guidance and assistance.

[10] **SLOWLY ENGAGE** the load, and **ENSURE** that the load is positioned so that the load is resting against the backrest/carriage.

[11] **IF** the load is awkward and has the potential of falling off the forks,
THEN SECURE the load to the forklift using approved fastening device (e.g., rope, chain, tie-down fastening strap).

[12] **LIFT** the load approximately 3 to 5 inches off the surface, slightly tilted back to obtain a safe travel position.

[13] **IF** view is obstructed,
THEN UTILIZE a spotter and/or **OPERATE** the forklift in reverse with load trailing.

6.3 General Forklift Safe Operating Practices (continued)

[14] **UTILIZE** a spotter when performing stacking, high lifts, racking, or load placement on truck flatbed/box van.

NOTE *Forklifts are considered unattended and **SHALL** be shut-down when the operator is more than 25 ft from the equipment.*

[15] **WHEN** the forklift operations are complete, or when the forklift is to be left unattended, **THEN PERFORM** a proper shutdown to include the following:

[A] **OPERATE** the forklift to an appropriate and/or designated parking area.

[B] **PLACE** the forks in park or down position (on the ground and tilted slightly forward).

[C] **TURN** the forklift off and remove the keys.

[D] **APPLY** the parking brake and/or chock the wheels.

[E] **LOCK** or **SECURE** the forklift as applicable.

[F] **IF** operating a LP type forklift,
THEN ENSURE that the service valve on the LP Tank is CLOSED (turning valve clockwise until seated).

[G] **PERFORM** a visual inspection for leaks or abnormalities.

[H] **IF** a visual inspection reveals signs of a leak or abnormalities,
THEN NOTIFY supervision for guidance.

6.4 General Drum Handler Operating Practices

This section applies to several models of drum handlers (e.g., Rotogrip, Easy Lift) designed for lifting, repositioning, and/or transporting drum type containers.

[1] **REVIEW** the manufacturer's tag to determine the maximum lifting capacity of the drum handler.

[2] **REVIEW** surroundings for surface conditions, overhead clearance, and other activities to determine whether drum handler operations can be conducted safely.

6.4 General Drum Handling Operating Practices (continued)

[3] **PLAN** the travel path before performing drum handler operations.

[4] **ALIGN** the drum handler to ensure the parrot beak/drum jaws are aligned with the center of the drum when negotiating the initial approach.

[5] **ATTACH OR FASTEN** the parrot beak/ drum jaws to the waste container.

[6] **PICK UP** load slightly (2 to 4 inches) to ensure drum is properly fastened to the drum handler.

[7] **IF** drum appears unstable or <u>not</u> properly attached,
THEN:

[A] **LOWER** drum and **REPOSITION** parrot beak/drum jaws.

[B] **GO TO** Step 6.4[6].

[8] **LIFT** the load approximately 3 to 5 inches travel height off the surface.

[9] **IF** view is obstructed,
THEN UTILIZE a spotter and/or **OPERATE** the drum handler in opposite direction (drum handler control arm side leading).

NOTE *Drum handlers are considered unattended and **SHALL** be shut-down when the operator is more than 25 ft from the equipment.*

[10] **WHEN** drum handler operations are complete,
THEN PERFORM a proper shutdown to include the following;

[A] **OPERATE** the drum handler to an appropriate and/or designated parking area.

[B] **PLACE** the drum handler to the lowest point (down).

[C] **TURN** the drum handler off and remove the keys.

[D] **LOCK** or **SECURE** the drum handler as applicable.

6.5 Forklift Critical Lift

This section is performed in conjunction with other performance sections of this procedure. This section applies to forklift critical lifts that are non-routine. Routine forklift critical lifts are captured in area specific procedures.

PIC

[1] **DETERMINE** whether a forklift critical lift is required based upon the following criteria and those identified for critical lifts in the Area Specific Forklift Operations Requirements, Sections 6.6, 6.7, and 6.8:

- If the load item is damaged or upset, it would result in a release into the environment of radioactive or hazardous material exceeding the established permissible environmental limits.
- The load item is unique and, if damaged, would be irreplaceable or not repairable, and it is vital to a system, facility or project operation.
- If the load item is damaged, the cost to replace or repair it or the delay in operations resulting from the damage would have a negative impact on facility, organizational, or DOE budgets to the extent that it would affect program commitments.
- If the load were mishandled or dropped, the event would cause any of the above noted consequences to nearby installations or facilities.
- The lift exceeds 75% of the manufacturer's rated capacity for the industrial truck or mechanized equipment to be used in the lift.
- The load item requires special care in handling because of weight, size, asymmetrical shape, undetermined center of gravity, installation tolerances, or other unusual factors.
- The lift is an otherwise non-critical lift that must be made in close proximity to critical or expensive items that could be damaged.
- The lift uses two or more lift trucks or a combination of such equipment.
- The lift truck or mechanized equipment could at any time come in contact with an energized high voltage power line.
- The lift requires personnel to be lifted.

6.5 Forklift Critical Lift (continued)

[2] **IF** one or more of the criteria listed in Step 6.5[1] is applicable,
THEN OBTAIN and **COMPLETE** an Attachment B , LANL Critical Lift Plan from P-101-25, Cranes, Hoists, Lifting Devices, and Rigging Equipment, prior to performing forklift critical lift.

6.6 TA-54 Area G Specific Forklift Operations Requirements

The following are forklift requirements and restrictions identified for TA-54 Area G. Minimum requirements for movement of palletized waste containers are provided in Table 6.6-1, below:

Forklift Operator

TABLE 6.6-1, WASTE CONTAINER FASTENING REQUIREMENTS FOR PAVED and UNPAVED SURFACES

Paved Surfaces					
4 Drums	3 Drums	2 Drums	1 Drum	Standard Waste Boxes (SWBs)	Other Containers (Fiber Reinforced Plywood (FPRs), Other Metal Containers)
*****2 metal bands around drums **OR** 1 nylon ratcheting strap around drums **OR** 1 nylon ratcheting strap secured to backrest/carriage***	Tight triangle array (two of three against backrest/carriage) **AND** 2 metal bands* **OR** 1 nylon ratcheting strap around drums **OR** Tight triangle array (two against backrest/carriage) **AND** 1 nylon ratcheting strap secured to backrest/carriage	Drums against backrest/carriage **AND** 1 nylon ratcheting strap secured to backrest/carriage	Drum centered against backrest/carriage **AND** 1 nylon ratcheting strap secured to backrest/carriage	Must be on a pallet **AND** 1 nylon ratcheting strap secured to backrest/carriage*** **OR** Handled using an approved rigging device (SWB lift fixture)	******1 nylon ratcheting strap around container to be secured to the backrest/carriage (as applicable)

IPC-1

***** Metal banding that currently exists on drum packs will continue to perform their safety function until the drum packs are disassembled.

****** FRPs and Metal containers vary in size (e.g., 10 L X 4 W, and 6 H) and may require special care in moving the container from point A to B. Strapping requirements may or may not apply in every application at the discretion of the Shift Operations Supervisor and Industrial Hygiene/Safety.

*** Moving, or relocating of TRU WASTE drums or SWBs outside domes/buildings that are palletized with a forklift **SHALL** require securing the drums or SWBs to the backrest/carriage using an approved fastening device (e.g., strap, chain). This requirement does not apply to loading or unloading of TRU WASTE drums or SWBs on and off transport vehicles (e.g., flatbed, stake bed)

IPC-1

Unpaved Surfaces
Any time a forklift is used as the primary transport vehicle for transporting or moving palletized waste containers in Area G on unpaved surfaces, the load **SHALL** be secured to the carriage/backrest of the forklift using approved fastening device (e.g.. strap, chain)

6.6 TA-54 Area G Specific Forklift Operations Requirements (continued)

- ABD-WFM-002, Technical Safety Requirements (TSRs) for Technical Area 54, Area G, applies for TSR cited for Technical Area 54, Area G.

- **($)** The posted speed limit for TA-54, Area G is less than or equal to 15 mph. [AC 5.6.9(1)]

- **($)** A spotter **SHALL** be present for TRU WASTE container lifts greater than 4 ft above the ground surface directly below the TRU WASTE container. [SAC 5.7.8(1)]

- **($)** A critical lift plan **SHALL** be used for planned lifts of the TRU WASTE container greater than 12 ft above the ground surface directly below the TRU WASTE container. [5.7.8(2)]

- **($)** A critical lift plan **SHALL** be used for planned lifts of FRPs with MAR greater than 150 PE-Ci. [5.7.8(3)]

- **($)** Personnel maintain applicable LANL qualifications for vehicle and equipment operation. [AC 5.9(1)]

- **($)** Personnel are trained to recognize specific job hazards and associated controls. [AC 5.9(2)]

- **($)** TRU WASTE containers on stacked pallets in the storage array **SHALL** be secured (e.g., banded). [AC 5.6.11(6)]

- **($)** TRU WASTE containers **SHALL** be secured during transport by motorized vehicle (e.g., forklift or truck). [AC 5.6.11(8)]

- **($)** Compressed gas cylinders in storage, in transport, or in use **SHALL** be secured. [AC 5.6.11(9)]

6.6 TA-54 Area G Specific Forklift Operations Requirements (continued)

NOTE 1 *TRU WASTE drums removed from Pit 9 or Trenches A-D are treated as UNVENTED TRU WASTE DRUMs until demonstrated to be vented or OVERPACKED.*

NOTE 2 *LCO 3.4.2 is not applicable during retrieval of below-ground waste or during MINOR MOVEMENTS.*

NOTE 3 *MINOR MOVEMENT is defined as: During HANDLING of UNVENTED TRU WASTE DRUMs, the movement of a drum to the extent necessary for attachment or removal of lid restraints and/or lifting devices; or the insertion or removal of a drum from an OVERPACK, DOUBLEPACK, or other blast-mitigation device.*

- **($)** After an UNVENTED TRU WASTE DRUM is removed from its underground storage configuration at a RETRIEVAL AREA, the UNVENTED TRU WASTE DRUM **SHALL NOT** be stacked, and **SHALL** be inserted into an OVERPACK/ DOUBLEPACK IMMEDIATELY, or placed in an ISOLATION AREA until inserted into an OVERPACK/ DOUBLEPACK, or until a lid restraint is applied for its transfer to an ISOLATION AREA within the above-ground STORAGE AREA, or the drum is VENTED. [SAC 5.7.7]

- **($)** During HANDLING (other than MINOR MOVEMENT) of UNVENTED TRU WASTE DRUMS, a lid restraining device **SHALL** be installed. UNVENTED TRU WASTE DRUMS being TRANSPORTED **SHALL** have a lid restraining device installed, AND one of the following: [LCO 3.4.2]
  - — Have a shielding/engineered barrier between the UNVENTED TRU WASTE DRUM and the worker
  - — Maintain safe standoff distance ≥ 30 ft. between the UNVENTED TRU WASTE DRUM and the worker

- Use of spotters is required during forklift operations involving an UNVENTED DRUM.

6.6 TA-54 Area G Specific Forklift Operations Requirements (continued)

- Before engaging loads, the forklift operator **SHALL** review the load for overweight TRU WASTE drums. Overweight TRU WASTE drums are defined as TRU WASTE drums weighing greater than 800 pounds. Overweight TRU WASTE drums have been identified and labeled (> 800 pounds). When forklift operators engage pallets with TRU WASTE drums greater than 800 pounds, they must ensure that the TRU WASTE drums are positioned closest to the forklift backrest. If a pallet is being negotiated for pickup and the overweight TRU WASTE drums are furthest away from forks, then the operator will need to reposition pallet to ensure the overweight TRU WASTE drums are closest to the load backrest. If the pallet contains four overweight TRU WASTE drums, the operator must ensure that the pallet is up against the backrest and the forklift lifting capacity is capable of lifting the load.

- Overweight TRU WASTE drums **SHALL** not be stacked or tiered.

- When, lifting, handling, moving, transferring, and stacking TRU WASTE containers, forklift operations **SHALL** be restricted to handling only one pallet at a time.

- When lifting, handling, moving, transferring oversize containers (i.e. FRPs, metal containers), the operator **SHALL** ensure the load is centered over the forks.

- All Remote-Handled waste canister lifts in Area G **SHALL** be performed according to critical lift requirements specified in P101-25, Cranes, Hoists, Lifting Devices, and Rigging Equipment, or successor document.

- Without prior approval from Industrial Hygiene, no more than two propane-fueled forklifts are to be operated at one time inside a tension support dome, and all tension support dome doors must be open to prevent an unacceptable carbon monoxide concentration inside tension support domes.

- No more than two propane-fueled combustion engine vehicles (e.g., forklift or man lift) may be operated in an unventilated TA-54 dome or building without TA-54 Shift Operations Manager approval.

6.6 TA-54 Area G Specific Forklift Operations Requirements (continued)

- When propane-fueled combustion engine vehicles (e.g. forklift or man lift) operations occur in an unventilated TA-54 dome or building the dome or building doors must be opened as follows. These requirements may be modified by IHS:
  - One forklift - open the exterior equipment access doors (e.g., clamshell doors) before starting work.
  - Two forklifts - open all exterior equipment doors (e.g., the exterior equipment doors and exterior side-hinged doors) before operating industrial equipment to maximize passive dome or building ventilation

- When TA-54 dome doors are to be closed due to high winds, forklift operations **SHALL NOT** occur without TA-54 Shift Operations Manager approval.

- **($)** No gasoline-fueled or diesel-fueled combustion engine vehicles (e.g., forklift) may be operated in a dome or building without TA-54 Shift Operations Manager approval. Prior to introducing gasoline-fueled or diesel-fueled combustion engine vehicles into a DEFINED AREA and the associated thermal separation distance, the requirements of LCO 3.3.1 **SHALL** be met and maintained. [LCO 3.3.1]

- **($)** Operators **SHALL** observe posted speed limit of less than or equal to 15 mph in Area G. [AC 5.6.9(1)]

- **($)** Periodic inspection and maintenance of LANL vehicles/equipment, as part of the maintenance program, **SHALL** be performed. [AC 5.6.6(1)]

6.7 RANT Specific Forklift Operations Requirements

The following are additional forklift requirements and restrictions identified from the RANT safety basis document, ABD-WFM-008, Technical Safety Requirements (TSRs) for the Radioassay and Nondestructive Testing (RANT) Site.

Forklift Operator

- **($)** No flammable liquids or gases, and no combustible liquids with NFPA Flammability Rating greater than 1, **SHALL** be used or stored within Building TA-54-38, with the exception of up to two 500-ml containers of ethanol or equivalent, which may be used when needed, and excluding P-10 gas. (LCO 3.3.1)

- **($)** Propane, gasoline, or diesel-fueled vehicles **SHALL** not be used inside Building TA-54-38, except when necessary to put facility in COLD STANDBY. (LCO 3.3.3)

- **($)** Vehicle refueling restrictions: refueling prohibited within 30 ft of Building TA-54-38, CONTAINER STORAGE AREA, and MLU operations. This element of the fire protection program applies only during OPERATION and WARM STANDBY MODE. (AC 5.6.5)

- **($)** A vehicle safety program will be established to ensure that the outside CONTAINER STORAGE AREA is protected from vehicles traversing and operating in TA-54-38 and to ensure these vehicles are maintained and operating in an effective manner. The following elements of are included in this program:
  - Vehicle and forklift maintenance and inspection program. This element of the vehicle safety program applies only during OPERATION and WARM STANDBY MODE.
  - Vehicle barriers to limit access to outside CONTAINER STORAGE AREA to only forklifts. This element of the vehicle safety program applies only during OPERATION AND WARM STANDBY. (AC 5.6.10)

- **($)** Use of spotters during TRU WASTE CONTAINER forklift operations. (AC 5.6.11)

- ($) Only electric powered forklifts are allowed at the RANT SITE when TRU-waste is present outside of sealed Type B containers. An exception to this control is allowed for vehicles or equipment necessary to support non-emergency, off-normal conditions addressed in LCO 3.3, and for those vehicles described in SAC 5.7.3.B. (SAC 5.7.1.A)

6.7 RANT Specific Forklift Operations Requirements (continued)

- **($)** Vehicle access control. The outdoor CONTAINER STORAGE AREA is protected by a combination of the Building TA-54-38 location, gates, and/or bollards fencing, and restrictions on vehicles allowed in the RANT SITE. Gates and/or bollards and fencing will control vehicle access into and out of the RANT SITE and will only allow electric powered forklifts, electric powered trailer jockey, TRUPACT II tractors, Transportation Safety Documents (TSD) approved vehicles, Department of Public Safety (DPS) vehicles, the diesel-fueled trailer jockey, and the MLU crane. Exceptions: (1) Emergency Vehicles in the case of any emergency; (2) Equipment with less than 5 gal of fuel may be used for grounds maintenance and for snow and ice removal; (3) Vehicles or equipment to support non-emergency, off-normal conditions addressed in LCO 3.3. (SAC 5.7.3.B)

- **($)** A Critical Lift Plan **SHALL** be used for all payload lifts involving a forklift for payload transfer or involving a crane for payload insertion into Type B containers. (SAC 5.7.4.A)

- **($)** Critical lifts **SHALL** not be performed outdoors during inclement weather conditions or winds above 25 mph. During high-winds or lightning, MLU crane lifting/loading operations **SHALL** be suspended IMMEDIATELY, all MLU payloads **SHALL** be secured on the ground away from the immediate area of the MLU cranes, or within the Type B container, and the MLU crane boom **SHALL** be lowered if previously extended. (SAC 5.7.4.C)

- **($)** Vehicle driver and forklift operator training and/or qualification. (AC 5.10)

6.8 WCRRF Specific Forklift Operations Requirements

The following are additional forklift requirements and restrictions identified from the WCRRF area specific safety basis document, ABD-WFM-006, Technical Safety Requirements (TSRs) for Waste Characterization, Reduction, and Repackaging Facility (WCRRF)

Forklift Operator

- **($)** Use of spotters is required during TRU WASTE CONTAINER forklift operations. (AC 5.6.10)

- **($)** TRU WASTE CONTAINERS **SHALL** not be stacked and **SHALL** not be lifted higher than 4 ft, excluding the WCG drum lift and lifts during loading or unloading from delivery trucks. (SAC 5.10.2.2)

- **($)** A critical lift plan **SHALL** be implemented for lifts and forklift movements involving DEGRADED or LOSS OF INTEGRITY TRU drums when not secured in a TRU WASTE CONTAINER. (SAC 5.10.3.1)

- **($)** Propane, gasoline, or diesel-fueled vehicles **SHALL** not be used anywhere at the WCRRF when INVENTORY is present at the WCRRF. Exceptions: (1) Emergency vehicles in the case of any emergency. (2) Equipment with less than 5 gal of fuel may be used for grounds maintenance and for snow and ice removal. (SAC 5.10.1.1)

6.9 Abnormal Operations

The following are abnormal conditions specific to forklift and drum handler operations that are not addressed in area specific emergency response procedures.

Forklift/Drum Handler Operator

- Loose strapping or insufficient banding if pallet is more than 4 feet above ground level:
  - **STOP** operations
  - **WARN** personnel in the immediate vicinity
  - **NOTIFY** Supervision and the Operations Center
  - **SAFELY** remove the pallet from the stack and lower the pallet to ground level
  - **REPAIR** the banding at ground level or **TIGHTEN** the nylon-ratcheting strap

- Forklift and drum handler failure (loss of hydraulics, brakes, power, etc.):
  - **PLACE** load in an "**at rest"** configuration
  - **WARN** others in the immediate area
  - **SECURE** the forklift and drum handler by shutting down, using wheel chocks, ropes, and barriers if available
  - **NOTIFY** Supervision and the Operations Center
  - **TAG OUT** forklift and drum handler with a "Danger Do Not Use" tag or an "Out of Service" tag

6.10 Mobile Loading Payload Lifts at TA-54 Area G

The following are requirements associated with mobile loading payload lifts for loading TRUPACT containers prior to shipment to WIPP, and are provided in accordance with ABD-WFM-002. These controls assist in preventing a mobile loading payload from dropping on top of another payload or a DEFINED AREA containing TRU WASTE, and to minimize consequences of a drop by limiting the MAR involved in the accident.

TA-54 Area G procedures developed to perform mobile loading payload lifts **SHALL**, at a minimum, include the following requirements.

- ($) Mobile loading payloads **SHALL** not be lifted over TRU WASTE, excluding another payload within the Type B container. (SAC 5.7.9.1)

- ($) Mobile loading payloads with MAR greater than 925 PE-Ci **SHALL** not be lifted more than 12 ft, measured from the bottom of the payload to the ground. (SAC 5.7.9.2)

- ($) Prior to loading of MAR into a TRUPACT II or HalfPACT, a verification **SHALL** be performed to ensure the containers have a current inspection sticker (provided by WIPP) or documentation of compliance provided by the manufacturer. (DF 6.1.3)

- **($)** A spotter **SHALL** be present for TRU WASTE container lifts greater than 4 ft above the ground surface directly below the TRU WASTE container. [SAC 5.7.8(1)]

- **($)** A critical lift plan **SHALL** be used for planned lifts of the TRU WASTE container greater than 12 ft above the ground surface directly below the TRU WASTE container. [5.7.8(2)]

7. POST-PERFORMANCE ACTIVITY

7.1 Disposition

Forklift/Drum Handler Operator

[1] **RECORD** name, signature, Z#, and date on the applicable attachments (Attachment 1 and/or 2).

[2] **IF** Attachment 3, Defective Equipment Report for Forklifts and Powered Industrial Equipment (Form #1569) was generated,
THEN FORWARD copies of the applicable attachments (Attachments 1, 2, and/or 3) to the applicable Operations Center and the EWMO Maintenance Manager.

7.2 Records Processing

SOS/PIC

[1] Ensure that documents generated by the performance of this procedure are processed as follows:

Record Identification	Record Type Determination	Protection/Storage Methods	Processing Instructions
Attachment 1, EWMO Forklift Inspection Logsheet Attachment 2, EWMO Drum Handler Inspection Logsheet Attachment 3, Defective Equipment Report for Forklifts and Powered Industrial Equipment #1569	QA Record	Supervision **SHALL** implement a reasonable level of protection to prevent loss and degradation. Records should be maintained in a one-hour fire rated metal cabinet when not in use.	When the records are ready for final disposition, the record is transferred to Records Management in accordance with EP-DIR-AP-10003, Records Management Procedure for ADEP Employees.

8. REFERENCES

ABD-WFM-002, Technical Safety Requirements (TSRs) for Technical Area 54, Area G

ABD-WFM-006, Technical Safety Requirements (TSRs) for Waste Characterization, Reduction, and Repackaging Facility (WCRRF)

ABD-WFM-008, Technical Safety Requirements for the Radioassay and Nondestructive Assay Testing (RANT) Site

EP-DIR-AP-10003, Records Management Procedure for ADEP Employees

EP-DIV-AP-0112, EWMO Pre-Job Briefings

EP-DIV-AP-20059, EWMO Watchbill Administration

EP-DIV-DOP-20085, EWMO Industrial Truck and Equipment Refueling and Recharging

P 101-4, Forklift and Powered Industrial Trucks

P101-18, Procedure for Pause/Stop Work

P 101-25, Cranes Hoists, Lifting Devices, and Rigging Equipment

P121, Radiation Protection

P300, Integrated Work Management

P 315, Conduct of Operations Manual

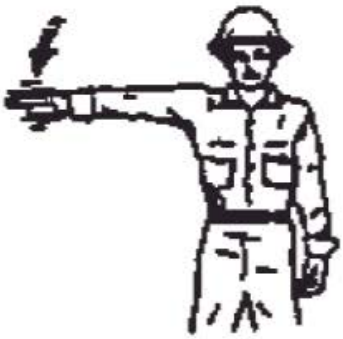
P330-6, Nonconformance Reporting

APPENDIX 1
Page 1 of 1

EXAMPLE FORKLIFT AND DRUM HANDLER SPOTTER HAND SIGNALS



Raise the Times. With forearm vertical, forefinger pointing up, move hand in small horizontal circle.



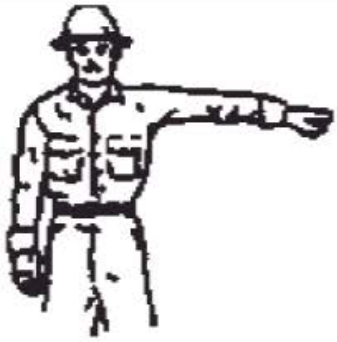
Lower the Times. With arm extended, palm down, lower arm vertically.



Tilt Mast Back. With forearm vertical, thumb extended, jerk thumb over shoulder.



Tilt Mast Forward. With arm extended, thumb down, lower arm vertically.



Move Tines in Direction Finger Points. With arm extended, palm down, point forefinger in direction of movement.



Stop. Extend both arms, palms down.

APPENDIX 2
Page 1 of 1

MAXIMUM LIFTING CAPACITY AND LOAD CENTER CALCULATOR AID AND INSTRUCTIONS

NOTE *This is an aid only and is not considered a quality record and can be discarded after use.*

1. **REVIEW** the Manufacturer's capacity plate to obtain the max lifting capacity at a given rated distance, and **RECORD** in the Worksheet below.

2. **MULTIPLY** the max lifting capacity by the rated distance, in inches, to obtain the inch pound total and, **RECORD** the information in the Worksheet below.

3. **USING** load center listed in the worksheet **DIVIDE** the extended load distances into the inch pounds established to obtain the decreased lifting capacity of forklift in pounds.

Forklift Reduced Maximum Lifting Capacity Worksheet

	Maximum Lifting capacity on Manufacturer Capacity Plate (Example: 5,000 lb X 24 in. = 120,000 in-lb)
Maximum Lifting Capacity _____ **X** _____ ***Rated Distance*** **=** _____ *in-lb*	
@ 30 inches	Inch pounds divided by rated distance =_____ pounds
@ 36 inches	Inch pounds divided by rated distance =_____ pounds
@ 48 inches	Inch pounds divided by rated distance =_____ pounds
@ 60 inches	Inch pounds divided by rated distance =_____ pounds

EXAMPLE Given a maximum lifting capacity of 4,000 pounds, AND
A rated distance of 30 inches, THEN
The maximum lifting capacity is (30 in. x 4,000 lb.) = 120,000 in-lb.
With a load center @ 48 inches, the Reduced Maximum Lifting Capacity is:

$$\frac{120{,}000 \text{ in-lb.}}{48 \text{ in.}} = 2{,}500 \text{ lb.}$$

ATTACHMENT 1
Page 1 of 1

EWMO FORKLIFT INSPECTION LOGSHEET

6.1[1] Forklift Name: _____ Equipment No.: _____ TA-: _____
TA/Bldg: _____ Hour-meter Reading: _____ (as applicable)
Next PM Due Date: _____

6.1[2] Forklift Type: ☐ Gas ☐ Diesel ☐ LP ☐ Electric

Section 1 Forklifts Visual Inspection (all forklifts) ($) [AC 5.6.6(1)]; **6.1[3]**	
Fork	No hairline cracks, broken, or cracked
	Fastening pins operable, no worn forks
Tires	No cracks in the side walls or tread
	No flat spots
	No separation from rim (hard rubber tires only)
	Proper air pressure (visual check for low or flat)
Mast	Backrest/Carriage in place
	No excessive wear, or damage on chains and pulleys
	Limit switches and/or mechanical stops in place and operable
	Hydraulics (no visual leaks or damaged seals)
Fire Extinguisher (If Equipped)	Inspection tag attached and current
	Displays fully charged (in green)
	Displays Hazardous Material Identification System Label (e.g., A,B,C type) or is listed on fire extinguisher manufacturer tag
Mirror (if equipped)	Exterior not cracked, broken or damaged
Cab Glass (if equipped)	Glass not broken, cracked, missing, or shattered
Cab Doors (if equipped)	Operable, shut, latches working properly
Roll Over Protection or Overhead guard	Not bent, or deformed
Seat Belts	Operable
Tags and Placards	Equipped with a Manufacturer's Tag for operation and safe lifting capacity of equipment
	If equipped with other than factory installed attachments, information is available to the operator through (label, placard or paper copy) that provides operator with information on maximum lifting capacity of forklift with add-on attachment
Annual Inspection Tag	Attached and current
Section 2 Forklifts Operational Checks (all forklifts)	
Mast Controls	Up, Down, Tilt, Side Shift are operable and default in a neutral position
Drive Controls	Forward, Reverse, Park are operable
Horn	Operable
Backup Alarm	Operable
Emergency & Service Brakes	Operable
Gauges and Control Console Components	Operable
Section 3 Gas, Diesel, LP (as applicable)	
Fluid Levels	Adequate Fuel (Gas, Diesel, LP)
Driving Lights	Headlights, turn signals, brake lights operable
LP Tanks (as applicable)	LP tank is properly secured and positioned in cradle with alignment notch down
Section 4 Electric (as applicable)	
Battery Charge	Sufficient charge for work activities
Warning Beacon	Yellow beacon for indoor use (as applicable) operational

6.1[4] Equipment satisfies the inspection criteria: ☐ SAT ☐ UNSAT

Comments: _____

6.1[6]/7.1[1] Shift: ☐ Days ☐ PMs ☐ Mids

Inspection Performed By: _____ / _____ / _____ / _____
Name (print) Signature Z# Inspection Date

ATTACHMENT 2
Page 1 of 1

EWMO DRUM HANDLER INSPECTION LOGSHEET

6.2[1] Drum Handler Name/Model: _____ Equipment No.: _____ TA-: _____
Bldg/Area: _____ Hour-meter Reading: _____ (if applicable)
Next PM Due Date: _____

Section 1 Drum Handler Visual Inspection (all drum handlers) ($) [AC 5.6.6(1)]; **6.2[2]**	
Tires	No cracks in the side walls or tread
	No flat spots
	No separation from rim (hard rubber tires only)
Mast	No excessive wear, or damage on chains and pulleys
	Limit switches and/or mechanical stops in place and operable
	Hydraulics (no visual leaks or damaged seals)
Fire Extinguisher (If Equipped)	Inspection tag attached (Current)
	Displays fully charged (in green)
	Displays Hazardous Material Identification System Label (e.g., A,B,C type) or is listed on fire extinguisher manufacturer tag
Tags and Placards	Equipped with a Manufacturer's Tag for operation and safe lifting capacity of Equipment
	If equipped with other than factory installed attachments, information is available to the operator through (label, placard or paper copy) that provides operator with information on maximum lifting capacity of forklift with add-on attachment
Annual Inspection Tag	Attached and current
Section 2 Drum Handler Operational Checks (all drum handlers)	
Mast Controls	Up, Down, Rotation are operable and default in a neutral position
Drive Controls	Forward, Reverse, Operable
Horn	Operable
Backup Alarm	Operable
Emergency & Service Brakes	Operable
Gauges and Control Console Components	Operable
Drum Jaws	Operable no signs of wear (as applicable)
Parrot Beak	Operable no signs of wear (as applicable)
Emergency Stop Switch reverse switch	Operable (changes direction away from the operator)
Section 3 Electric	
Battery Charge	Sufficient for work activities
Warning Beacon	Yellow beacon for indoor use (as applicable) operational

6.2[3] Equipment satisfies the inspection criteria: ☐ SAT ☐ UNSAT

Comments: _____

6.2[4]/7.1[1] Shift: ☐ Days ☐ PMs ☐ Mids

Inspection Performed By: _____ / _____ / _____ / _____
Name (print) Signature Z# Inspection Date

ATTACHMENT 3
Page 1 of 1

DEFECTIVE EQUIPMENT REPORT FOR FORKLIFTS AND POWERED INDUSTRIAL EQUIPMENT

6.1[5][D]/6.2[4]/7.1[2], as applicable, if found defective

Los Alamos
NATIONAL LABORATORY

DEFECTIVE EQUIPMENT REPORT FOR FORK LIFTS AND POWERED INDUSTRIAL TRUCKS

Use this form to inform the maintenance contractor of fork lift and powered industrial truck defects or symptoms of defects. The maintenance contractor must receive a copy of this form before submitting a repair cost estimate.

Type of equipment ☐ Fork lift ☐ Powered industrial truck		Hour meter reading	
Equipment assigned to (*Division, Group*)	Contact	Telephone number	Property number
Description of equipment			Serial number
Manufacturer's name			
Location (*Technical Area, Building, or Specific Area*)			
Specific location			
Defect or symptom			
Operating conditions under which defect or symptom was first observed			
Date defect or symptom was first observed			
Additional information			
Date report given to maintenance contractor			
Name of maintenance contractor representative		Given by	
Comments			

Form 1569 (1/93) LIR 402-1110-01.0 (ESH-5, OIC)

EWMO Area Emergency Response

Effective Date: October 8, 2015

The Responsible Manager has determined that the following organizations' review is required for initial procedure release as well as subsequent major revisions. Review documentation is contained in the Document History File:

EWMO Operations Manager
EWMO Shift Operations Manager
Operations Center SME
Emergency Operations
DSESH-EWMO Manager
Deployed IH&S Professional
Environmental Compliance Programs
Safety Basis
Radiation Protection
Engineering
Quality Assurance

Responsible Manager, EWMO Facility Operations Director

Les Sonnenberg	/ 290408	/ /s/ Les Sonnenberg	/ 10/07/15
Name (print)	Z#	Signature	Date

Classification Review: ☐ N/A ☒ Unclassified ☐ UCNI ☐ Classified _____

Teri Tingey	/ 200975	/ /s/ Teri Tingey	/ 10/07/15
Name (print)	Z#	Signature	Date

Working Copy / Information Only (circle one)
Initials / Date: _____ / _____

1.0 ENTRY CONDITIONS

- Request is made for Emergency Response Personnel in support of an emergency
- Visual observation of fire or smoke
- Audible fire alarm
- Manual fire pull station activated
- Utility (water, gas, electricity) outages or leaks (water, fuel, sewer, oil) with significant impact to the facility or the environment
- Situation with the likely potential for involvement of more than one emergency response element
- Chemical reaction, such as smoke, fire, or release of a waste container's internal contents to atmosphere
- A nitrate salt waste container temperature that is 15°F higher than ambient temperature

2.0 IMMEDIATE RESPONSE ACTIONS

√	Time/Date	#	ACTIONS
Operations Center			
		2.1	**ENSURE** personnel have completed the Emergency Response in accordance with EP-DIV-BEP-20048, Building Emergency Plan, and **OBTAIN** incident information from the caller. (e.g., location, entry condition, inside or outside of a structure). Narrative/Comments:
		2.2	**NOTIFY** personnel of incident and/or protective actions. (e.g., Public address, 2-way radio, E-Pagers, cell phones, and face to face)
		2.3	**NOTIFY** the Shift Operations Manager/Facility Lead (SOM/FL). Notify Backshift Name:_____
NOTE *Steps 2.4 through 2.8 may be performed out of sequence.*			
		2.4	**ENSURE** that Emergency Operations and Support Center (7-6211), Fire Department, and/or 911 are notified and contact information for the SOM/FL is provided.

2.0 IMMEDIATE RESPONSE ACTIONS (continued)

√	Time/Date	#	ACTIONS
		2.5	**PERFORM** accountability of personnel in affected area.
		2.6	**ENSURE** meteorological data is obtained and **COMMUNICATE** information to personnel (e.g., wind direction).
		2.7	**DISPATCH** a Nuclear Operator/Waste Handler to meet the Emergency Response vehicles if required, and **OPEN** access gates if safe to do so.
		2.8	**NOTIFY** additional support personnel to assist SOM/FL as needed. (e.g., Environmental, Safety, and Health [ES&H], Maintenance, Engineering, Criticality Safety, IH&S, RP)
Shift Operations Manager/Facility Lead			
NOTE *When the Operations Manager is not physically present and/or on shift, the SOM will conduct the minimum notifications up the chain of command (e.g., FOD, ES&H Manager, and Project Manager).*			
		2.9	**NOTIFY** the Operations Manager of the event, and **REQUEST** the Operations Manager to conduct the minimum notifications (e.g., FOD, ES&H Manager, and Project Manager).
		2.10	**BRIEF** support personnel and the emergency responders upon arrival to incident site.
		2.11	**CONDUCT** formal transfer of command and control to the Incident Commander (IC).
		2.12	**ENSURE** EWMO support team is available to assist IC as necessary.

3.0 SUBSEQUENT ACTIONS

Shift Operations Manager/Facility Lead			
√	Time/Date	#	**ACTIONS**
		3.1	**ENSURE** a formal transfer of command and control from IC is performed once the emergency has been downgraded.
Operations Center			
		3.2	**IF** actions were developed after transfer from IC, **THEN IMPLEMENT** actions to return area/operations to normal. Actions:
		3.3	**ATTACH** any notes or other documentation generated during the performance of this document to the Narrative/Comments page (e.g., photo of the white board).
		3.4	**PROCESS** the procedure as a quality record in accordance with EP-AP-10003, Records Management.

Narrative/Comments:

Completed By:

_____/_____/_____/_____
Printed Name Signature Z# Date/Time

Discovery of an Airborne, Liquid, and/or Solid Material Release or Spill

Effective Date: 12/9/2013

The Responsible Manager has determined that the following organizations' review/concurrence is required for the initial document, and for major revisions a same type and level review is required. Review documentation is contained in the Document History File:

Engineering
IH&S
Operations Managers
Quality Assurance
Radiation Protection
Shift Operations Managers

Responsible Manager, EWMO Facility Operations Director

Steve M. Henry	/ 219172	/ /s/ Andy Baumer 234651 for SMH	/ 12/3/13
Name (print)	Z#	Signature	Date

Classification Review: ☐ N/A ☒ Unclassified ☐ UCNI ☐ Classified _____

Teri Tingey	/ 200975	/ /s/ Teri Tingey	/ 12/3/13
Name (print)	Z#	Signature	Date

Working Copy / Information Only (circle one)
Initials / Date: _____/_____

1.0 ENTRY CONDITIONS

NOTE *Lightning response is captured in the EP-DIV-BEP-20048, EWMO Building Emergency Plan*

- Severe weather conditions such as hail, flooding, or high winds
- As directed by LANL EM&R

2.0 IMMEDIATE RESPONSE ACTIONS

√	Time/Date	#	ACTIONS
Operations Center			
		2.1	**ENSURE** personnel have completed the Notification Response in accordance with EWMO-DIV-BEP-20048, EWMO Building Emergency Plan. Narrative/Comments:
		2.2	**NOTIFY** personnel of incident. (e.g. Public address, 2-way radio, E-pagers, cell phones, and face to face)
		2.3	**NOTIFY** the Shift Operations Manager/Facility Lead (SOM/FL). Name:_____
NOTE *The following steps may be performed out of sequence.*			
		2.4	**NOTIFY** the support personnel to assist Shift Operations Manager. (e.g., Environment, Safety, and Health)

2.0 IMMEDIATE RESPONSE ACTIONS (continued)

√	Time/Date	#	ACTIONS
Shift Operations Manager/Facility Lead			
	NOTE		*When the Operations Manager is not physically present and/or on shift, the SOM will conduct the minimum notifications up the chain of command (e.g., FOD, ES&H Manager, and Project Manager).*
		2.5	**NOTIFY** the applicable Operations Manager of the event, and **REQUEST** the Operations Manager to conduct the minimum notifications (e.g., FOD, ES&H Manager and Project Manager).
		2.6	**CONDUCT** information gathering, such as the following applicable items: • Container handling and processing • Crane operations • Receipts • Shipments • Transfers
		2.7	**DETERMINE** and **EVALUATE** the incident to develop actions as applicable.

3.0 SUBSEQUENT ACTIONS

Operations Center			
		3.1	**IF** actions were developed, **THEN IMPLEMENT** actions to return area/operations to normal. Actions:
		3.2	**PROCESS** the procedure as a quality record in accordance with EP-DIR-AP-10003, Records Management Procedure For ADEP Employees.

Narrative/Comments:

Completed By:

_____/_____/_____/_____
Printed Name Signature Z# Date/Time

Waste Container Questionable Integrity

Effective Date: 12/9/2013

The Responsible Manager has determined that the following organizations' review/concurrence is required for the initial document, and for major revisions a same type and level review is required. Review documentation is contained in the Document History File:

Engineering
IH&S
Operations Managers
Quality Assurance
Radiation Protection
Shift Operations Managers

Responsible Manager, EWMO Facility Operations Director

Steve M. Henry	/ 219172	/ /s/ Andy Baumer 234651 for SMH	/ 12/3/13
Name (print)	Z#	Signature	Date

Classification Review: ☐ N/A ☒ Unclassified ☐ UCNI ☐ Classified _____

Teri Tingey	/ 200975	/ /s/ Teri Tingey	/ 12/3/13
Name (print)	Z#	Signature	Date

Working Copy / Information Only (circle one)
Initials / Date: _____/_____

1.0 ENTRY CONDITIONS

- Visual indication of a fallen/dropped waste container
- Visual inspection of a waste container indicates an unanticipated loss of waste container integrity (e.g., missing or broken filter, puncture, corrosion, missing drum locking ring, external contamination
- Visual indication of a bulging waste drum
- Visual indication of a bulging inner waste drum

2.0 IMMEDIATE RESPONSE ACTIONS

√	Time/Date	#	ACTIONS
Operations Center			
		2.1	**ENSURE** personnel have completed the Off-Normal Response in accordance with EWMO-DIV-BEP-20048, Building Emergency Plan and **OBTAIN** incident information from the caller (e.g., location, position, container information, visual damage to exterior of container, leaking, personnel injury, inside/outside building/structure). Narrative/Comments:
		2.2	**NOTIFY** personnel of incident. (e.g., Public address, 2-way radio, E-Pagers, cell phones, and face to face)
		2.3	**NOTIFY** the Shift Operations Manager/Facility Lead (SOM/FL). Name:_____

2.0 IMMEDIATE RESPONSE ACTIONS (continued)

√	Time/Date	#	ACTIONS
	NOTE *The following steps may be performed out of sequence.*		
		2.4	**NOTIFY** the support personnel to assist Shift Operations Manager. (e.g., Environmental, Safety and Health, Engineering, Waste Coordinator, and Security)
Shift Operations Manager/Facility Lead			
	NOTE *When the Operations Manager is not physically present and/or on shift, the SOM will conduct the minimum notifications up the chain of command (e.g., FOD, ES&H Manager, and Project Manager).*		
		2.5	**NOTIFY** the applicable Operations Manager of the event, and **REQUEST** the Operations Manager to conduct the minimum notifications (e.g., FOD, ES&H Manager and Project Manager).
		2.6	**CONDUCT** information gathering, such as the following applicable items: • Container number and contents • Spills/release • Temporary Limited Area • Weather conditions
		2.7	**DETERMINE** and **EVALUATE** the incident to develop actions in accordance with the applicable compliance documents (e.g., Safety Basis, RCRA, Radiation Protection).
		2.8	**IF** Emergency Response Personnel are required, **THEN GO** to EP-DIV-RM-ERP-20200, EWMO Area Emergency Response and **EXIT** this procedure as necessary.

3.0 SUBSEQUENT ACTIONS (continued)

√	Time/Date	#	ACTIONS
Operations Center			
		3.1	**IF** actions were developed, **THEN IMPLEMENT** actions to return area/operations to normal. Actions:
		3.2	**PROCESS** the procedure as a quality record in accordance with EP-DIR-AP-10003, Records Management Procedure For ADEP Employees.

Narrative/Comments:

Completed By:

_____/_____/_____/_____

Printed Name Signature Z# Date/Time

EWMO Area Emergency Response

Effective Date: October 8, 2015

The Responsible Manager has determined that the following organizations' review is required for initial procedure release as well as subsequent major revisions. Review documentation is contained in the Document History File:

EWMO Operations Manager
EWMO Shift Operations Manager
Operations Center SME
Emergency Operations
DSESH-EWMO Manager
Deployed IH&S Professional
Environmental Compliance Programs
Safety Basis
Radiation Protection
Engineering
Quality Assurance

Responsible Manager, EWMO Facility Operations Director

Les Sonnenberg	/ 290408	/ /s/ Les Sonnenberg	/ 10/07/15
Name (print)	Z#	Signature	Date

Classification Review: ☐ N/A ☒ Unclassified ☐ UCNI ☐ Classified _____

Teri Tingey	/ 200975	/ /s/ Teri Tingey	/ 10/07/15
Name (print)	Z#	Signature	Date

Working Copy / Information Only (circle one)
Initials / Date: _____ / _____

1.0 ENTRY CONDITIONS

- Request is made for Emergency Response Personnel in support of an emergency
- Visual observation of fire or smoke
- Audible fire alarm
- Manual fire pull station activated
- Utility (water, gas, electricity) outages or leaks (water, fuel, sewer, oil) with significant impact to the facility or the environment
- Situation with the likely potential for involvement of more than one emergency response element
- Chemical reaction, such as smoke, fire, or release of a waste container's internal contents to atmosphere
- A nitrate salt waste container temperature that is 15°F higher than ambient temperature

2.0 IMMEDIATE RESPONSE ACTIONS

√	Time/Date	#	ACTIONS
Operations Center			
		2.1	**ENSURE** personnel have completed the Emergency Response in accordance with EP-DIV-BEP-20048, Building Emergency Plan, and **OBTAIN** incident information from the caller. (e.g., location, entry condition, inside or outside of a structure). Narrative/Comments:
		2.2	**NOTIFY** personnel of incident and/or protective actions. (e.g., Public address, 2-way radio, E-Pagers, cell phones, and face to face)
		2.3	**NOTIFY** the Shift Operations Manager/Facility Lead (SOM/FL). Notify Backshift Name:_____
NOTE *Steps 2.4 through 2.8 may be performed out of sequence.*			
		2.4	**ENSURE** that Emergency Operations and Support Center (7-6211), Fire Department, and/or 911 are notified and contact information for the SOM/FL is provided.

2.0 IMMEDIATE RESPONSE ACTIONS (continued)

√	Time/Date	#	ACTIONS
		2.5	**PERFORM** accountability of personnel in affected area.
		2.6	**ENSURE** meteorological data is obtained and **COMMUNICATE** information to personnel (e.g., wind direction).
		2.7	**DISPATCH** a Nuclear Operator/Waste Handler to meet the Emergency Response vehicles if required, and **OPEN** access gates if safe to do so.
		2.8	**NOTIFY** additional support personnel to assist SOM/FL as needed. (e.g., Environmental, Safety, and Health [ES&H], Maintenance, Engineering, Criticality Safety, IH&S, RP)
Shift Operations Manager/Facility Lead			
NOTE *When the Operations Manager is not physically present and/or on shift, the SOM will conduct the minimum notifications up the chain of command (e.g., FOD, ES&H Manager, and Project Manager).*			
		2.9	**NOTIFY** the Operations Manager of the event, and **REQUEST** the Operations Manager to conduct the minimum notifications (e.g., FOD, ES&H Manager, and Project Manager).
		2.10	**BRIEF** support personnel and the emergency responders upon arrival to incident site.
		2.11	**CONDUCT** formal transfer of command and control to the Incident Commander (IC).
		2.12	**ENSURE** EWMO support team is available to assist IC as necessary.

3.0 SUBSEQUENT ACTIONS

Shift Operations Manager/Facility Lead			
√	Time/Date	#	**ACTIONS**
		3.1	**ENSURE** a formal transfer of command and control from IC is performed once the emergency has been downgraded.
Operations Center			
		3.2	**IF** actions were developed after transfer from IC, **THEN IMPLEMENT** actions to return area/operations to normal. Actions:
		3.3	**ATTACH** any notes or other documentation generated during the performance of this document to the Narrative/Comments page (e.g., photo of the white board).
		3.4	**PROCESS** the procedure as a quality record in accordance with EP-AP-10003, Records Management.

Narrative/Comments:

Completed By:

_____/_____/_____/_____
Printed Name Signature Z# Date/Time

Documentation of Periodic Review

Document Number: EP-DIR-PLAN-10008 Revision: 1

Title: Environmental Programs Directorate Training Program Plan

Due Date for Review: 3/31/2015 Responsible Line Manager: Enrique Torres Z#: 237468

Editorial Review and Validation are suggested methods of evaluation, but are not required.

Evaluation	YES	NO	N/A
1. Editorial Review performed?	☒	☐	☐
2. Validation performed?	☐	☒	☐

Evaluation Results	YES	NO	N/A
3. Is the document, in its entirety, still needed for operations at the facility? (If No, skip questions 4 – 7 and select "Cancellation" or "Revision."	☒	☐	☐
4. Is the document technically accurate?	☒	☐	☐
5. Is the document usable in its current form?	☒	☐	☐
6. Are the references current and complete? (If "No," a Minor revision should be considered)	☐	☒	☐
7. Does the document satisfy the format requirements?	☒	☐	☐

Integrated Work Document (IWD) – Equivalent Evaluation Results	YES	NO	N/A
8. Is the P300 Hazard Grading Matrix for this document still accurate?	☐	☐	☒
9. Is the document still acceptable as P300 Part 1, *Activity Specific Information*?	☐	☐	☒
10. Is this document still acceptable as P300 Part 2, *Work-Area Information*?	☐	☐	☒
11. Is this document still acceptable as P300 Part 3, *Validation and Work Release Information*?	☐	☐	☒
12. Is this document still acceptable as P300 Part 4, *Post-Job Review*?	☐	☐	☒

13. Based on this evaluation, the following action is required.

☐	None	The document is extended in accordance with its periodic review cycle.
☒	Revision	Initiate a revision in accordance with the governing procedure.
☐	Cancellation	Initiate cancellation in accordance with the governing procedure.

14. Periodic Review Evaluation Performed By:

Lisa Lattin / Lisa Lattin / 173664 / 3.31.15

Name (print) / Signature / Z number / Date

Comments: While technically accurate, this TTP does not reflect the current state of the Organization, nor dies it provide sufficient detail to meet the current requirements of P781-1 Conduct of Training.

Responsible Line Manager (RLM) Approval:

Enrique Torres / /s/ E. Torres / 237468 / 5/1/15

RLM/Representative (print) / Signature / Z number / Date

Facility Operations Director (FOD) Concurrence (if required):

Vicki Alexander / Vicki Alexander / 114624 / 05-31-2015

FOD/Representative (print) / Signature / Z number / Date

EP-DIR-PLAN-10008,R1
Training Program PLAN

Environmental Programs Directorate, ADEP

ADEP Organization Approval

Associate Director (*print*) Michael J. Graham	Signature /s/Bruce Schappell *for*	Z# 232832	Date 3/13/12

Revision Log

Revision No.	Date	Description of Change
0	8/31/11	New document.
1	3/16/12	Minor editorial changes; removed reference to EP-DIR-SOP-2011

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ATTACHMENTS:

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1.0 TPP Introduction and Organization

This Training Program Plan (TPP) defines training requirements for Environmental Programs Directorate, ADEP personnel who do not work in nuclear facilities and personnel working in nuclear facilities in positions not requiring a formal qualification standard. Each position existing within the directorate has specific training requirements that include Institutional mandatory courses and, where applicable, additional unique training expectations associated with a position.

This document provides the basis and expectations for implementing non-nuclear facility training requirements throughout the directorate. It describes the manner in which training is managed, monitored, and documented. Management and training positions requiring qualification are qualified via the Laboratory institutional qualification standards. Documentation of qualification is maintained in the Laboratory learning management systems. Nuclear facility workers' training and/or qualification requirements are addressed in the ADEP Training Implementation Matrices (TIM).

The implementation of the TPP and the TIM ensures ADEP personnel are fully trained and/or qualified to support the Laboratory mission. ADEP regularly monitors employee training to ensure Directorate personnel remain compliant in their assigned training.

1.1 Functional Assignments

ADEP identifies and remediates environmental hazards associated with past laboratory operations, manages and disposes of waste at Los Alamos National Laboratory (LANL), and conducts environmental surveillance to ensure the protection of the environment and the public. Specifically, ADEP manages a suite of institutional programs and services including the Corrective Actions Program (CAP); TA-21 Closure; Waste Projects and Services (WPS); LANL Tru Program (LTP); Business and Project Services (BPS); Engineering and Technology (ADEP-ET); Project Management and Field Services (PMFS); and Regulatory Management (REG-DO).

1.2 Organization

The ADEP organizational structure can be viewed the EP home page at: http://int.lanl.gov/orgs/adep/. ADEP workers may be deployed to support specific projects or facilities. Their EP division or home organizations are responsible for ensuring their employees have the core training necessary to perform required tasks, while the facilities or projects are responsible for ensuring that appropriate facility, project, and/or position-specific training is provided.

2.0 Roles and Responsibilities (R2)

Responsible Line Managers (RLMs) are accountable for their personal training and the training of their assigned workers. FODs are accountable to identify facility-specific training required to allow unescorted access to controlled facilities or for building emergency plans and training for administrative facilities. Training specialists and subject matter experts (SMEs) provide technical expertise and perform training tasks. This document further defines the R2 for ADEP to ensure the goals of the Training Program are met.

Associate Director for Environmental Programs

Serve as Program Owner for the TPP and delegate such responsibilities as deemed appropriate.

Provide direction to the ADEP management team and expectations for implementation of the TPP.

Division-level Managers

Ensure implementation of the TPP.

At least biannually review the TPP for changes to include identification of positions training requirements.

Review TPP and provide input regarding requirements for directorate positions.

Assign specific training courses/plans to workers and ensure assigned training is completed.

Functional Managers

Ensure implementation of the TPP.

When assigning job duties, ensure the appropriate/required training for the duties is assigned and completed by the individual.

Review the TPP and provide input regarding training requirements for directorate positions.

Assign specific training courses/plans to workers and ensure assigned training is completed.

Group Managers

Ensure implementation of the TPP.

When assigning job duties, ensure the appropriate/required training for the duties is assigned and completed by the individual.

Review periodic training reports and ensure workers are current with assigned courses and plans.

Review workers' training plans at least annually.

Review the TPP and provide input regarding training requirements for directorate positions.

Project Managers

Ensure project specific training requirements are identified and project members are trained.

Subcontractor Technical Representatives (STR)

Obtain training records from LANL learning management systems, as necessary, to demonstrate subcontractor compliance with LANL training requirements.

Ensure subcontractor personnel are properly trained and qualified to perform work.

ADEP Personnel

Complete assigned training courses/plans.

Ensure training requirements are kept current.

Deployed Training Services

Assist with development and maintenance of the TPP.

Develop and maintain TIMs.

Advise on position identification regarding training requirements.

Course development and implementation.

Manage the LANL learning management systems to include establishing courses/plans, assigning training to individuals as directed by organizational managers; providing periodic reports of training status.

Support managers in identification of training requirements and development of Qualification Standards in accordance with P781-1, *Conduct of Training Manual.*

Facility Operations Directors

Define facility specific training requirements.

Provide ADEP personnel, as necessary, facility specific training to allow them to work successfully under the FODs purview.

3.0 General Training Administration Requirements

3.1 Initial Training

Initial training requirements are analyzed, designed, developed, implemented, and evaluated using a graded approach and Systematic Approach to Training (SAT) methodology as described by the *Conduct* of *Training Manual* (P 781-1). Personnel may not be assigned to work independently on any position(s), job(s), and/or task(s) until they have met the necessary initial training requirements. Initial training programs consist of a combination of classroom, self-study, workshop, and on-the-job training (OJT). Personnel who are responsible for developing, approving, and delivering current and approved training are excused from initial and continuing training in the area for which they are designated an SME (as long as they continue to serve as SMEs). For example, an individual who prepares, instructs, and/or grades a written examination is not required to take the examination.

3.2 Continuing Training

Continuing training is designed to maintain job proficiency. Continuing training must be developed based on job or needs analysis commensurate with specific position /functions. Continuing training may include retraining on critical, complex, or infrequently performed tasks; or refreshers for safety, security, and regulatory requirements, and it is a means for personnel to remain current on such topics as:

- changes to regulatory requirements,
- changes to the job position,
- significant changes in procedures,
- changes in plant systems or equipment, and
- lessons learned.

Additionally, some continuing training is completed by personnel in order to maintain professional credentials and/or external certification requirements.

3.3 Selection and Qualification of Instructors

CT Division training staff and other Laboratory workers developing and implementing training must be qualified at a level commensurate with their assigned responsibilities. The education, experience, and qualification requirements for training staff are specified in P781-1, *Conduct of Training Manual.*

3.4 Subcontracted Training

Training by external providers is not anticipated to be widely employed by ADEP Directorate. If identified as a need, the subcontract organization and their specifically identified trainer(s) are evaluated by Central Training Division (CT) deployed resources and/or ADEP functional managers to ensure adequate knowledge of the field being presented and qualification in accordance with P781-1 are provided.

3.5 Training Program Budget

Budget resources for the ADEP Training Program are negotiated annually as part of the Customer Service Agreements (CSAs). For specific data about the budget, refer to the current CSA.

3.6 Training Program Assessments and Evaluations

The evaluation phase of training takes place to determine the effectiveness of training and training programs and to identify improvements that may be required. Assessments of the training program may be conducted by CT or ADEP managers. Evaluation tools may include observations, interviews, and/or questionnaires. If training-related worker performance problems exist, the solution may involve repeating portions of the analysis, design, and development activities and the revision of existing materials.

3.6.1 Course Evaluation

Evaluation of courses and/or other training activities are to be conducted at the conclusion of each session. Trainees will be provided with questionnaires measuring the learner's reaction to training content, presentation, and materials.

3.6.2 Trainee Evaluation

Trainees are assessed to determine the level of learning gleaned from training by written assessment and/or performance demonstration.

4.0 Records Management

Official training records are maintained in the LANL learning management system. When specific reports of training status are required to support workforce training and qualification, printouts from the system are provided. Such documents when deemed to be records are maintained by the organization or project in accordance with *EP-DIR-AP-10003 Records Management Procedure for ADEP Employees.*

Reports from the LANL learning management systems are considered in-process/non-permanent when used for communication of status to the workforce. When used to demonstrate training status in showing completion of training requirements for work to be preformed, the reports are deemed to be records.

4.1 Training Records

Training records include but are not limited to SAT documentation, course materials, course rosters, and learning management system reports.

5.0 General Training Implementation Requirements

ADEP personnel are assigned to ADEP core requirements training plans and to any position-specific training plans determined by the RLM. Personnel deployed to ADEP are trained in their field of study by their home organization and will be assigned to ADEP core requirements training plans and/or any required ADEP position-specific training to be determined by the ADEP manager with guidance/input from the training specialist.

During the training period, personnel may perform position duties under the supervision of a fully trained individual until the candidate has completed all training requirements. The level of training is determined by position-specific functions. Training can be delivered live, via web-based instruction, classroom instruction, briefings, required-reading, workshops, and/or on-the-job training (OJT).

5.1 Retraining

Re-training, continuing, or refresher training requirements are identified in the training analysis phase or as mandated by directives or regulations. Re-training utilizing lessons learned from real-world and exercise events is provided to workers to maintain job proficiencies and promote or improve job performance.

5.2 Equivalencies to Training

Equivalencies may be considered based on documented experience and/or education and are managed in accordance with P781-1, Conduct of Training Manual (3.1.5) using form 2154, *Request a Training Equivalency* and are approved by the appropriate Division Leader.

6.0 Training Classification Level Determination

ADEP training level determinations are based on typical entry-level knowledge, skills, and abilities (KSA) for each position; if the work requires an IWD; and the risks associated with performance failure. Because ADEP is organized functionally (i.e., by technical discipline), training requirements will vary within each division or program office. In addition to institutional training requirements, ADEP employees are assigned to ADEP-required training including but not limited to the EP Quality Assurance Plan; Behavior Based Training (ATOMICS), and the Integrated Work Management (IWM) Overview. Some positions also have position-specific training and/or reading requirements. The ADEP Level 3 Determinations, which apply to nuclear facilities per section 3.2.1.c of the Conduct of Training Manual, are addressed in the TIM.

ADEP training classification level determinations are defined as:

- **Determination level 1: Worker Training and Authorization**
  Workers at this level complete institutional and facility specific training requirements. Level 1 positions include but are not limited to support staff and scientists.

- **Determination level 2: Worker Training and Qualification for Nonnuclear and Radiological Facilities**

  In addition to institutional and facility specific training requirement, workers are typically assigned to additional position-specific and/or formal qualification standards (QS), or work under an Integrated Work Document (IWD). Level 2 positions include but are not limited to managers, training staff, and environmental technicians.

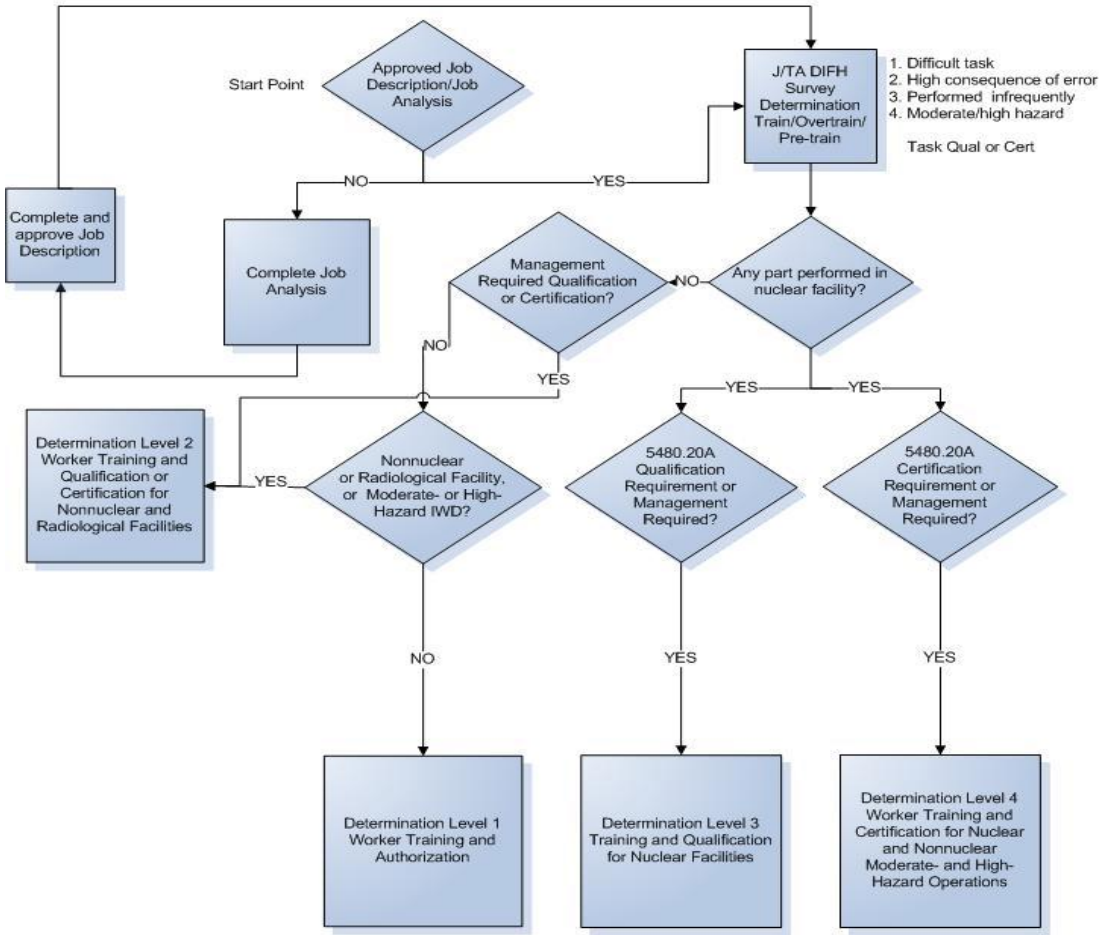
- **Determination level 3: Worker Training and Qualification for Nuclear Facilities**

  These positions are identified in the ADEP TIM.

- **Determination level 4: Worker Training and Certification for Nuclear and Nonnuclear Moderate and High Hazard Operations**

  Workers at this level perform tasks or activities with unacceptable risk for inadequate performance whether nuclear, nonnuclear, moderate- or high-hazard operations. Certification is also required by due diligence.

ADEP will use the process below for determining the training classification level for workers.
Refer to Appendix 1 for the ADEP Nonnuclear Training Classification Level Determination Matrix.



7.0 Quality Assurance

ADEP will establish an evaluation team to conduct a comprehensive training program evaluation triennially. The evaluation will cover all aspects of the training program and will be used to identify strengths and/or deficiencies in the training program and the overall training program infrastructure. The reviews will be staggered so only one division or program is being evaluated at any one time.

Appendix 1: ADEP Job Training Classification Determination Matrix

ADEP Job Training Classification Determination Matrix
(Level 3 Nuclear Facility worker positions are identified and addressed in the TIM)

Position	Level 1	Level 2	Level 3	Level 4
Associate Director		X		
Deputy Associate Directors		X		
Program Directors		X		
Division Leaders		X		
Executive Advisor	X			
Operations Managers		X		
Environmental Project Managers (formerly Project Leaders)	X			
Operations Specialists	X	X		
Lean Six Sigma	X			
Environmental Managers		X		
Environmental Professionals	X			
Environmental Tecs		X		
Administrative Assistants and Professionals	X			
Training Staff		X		
Graduate and Undergrad Students	X	X		
Staff Operations Manager		X		
Field/Environmental Subcontract Technical Representatives	X			
Services Subcontract Technical Representatives	X			
Environmental Project Engineers	X			
Program Managers	X	X		
Communications and Government Affairs	X			
Records Management & Document Control	X			
Deliverables Production	X			
Space Management	X			
Procedure Development	X			
Scientists	X			
Regulatory Program and Support	X			
PRS Database Support	X			
Environmental Investigations Support	X	X		
Environmental Remediation Support	X			
Environmental Engineering Support	X			
Corrective Actions Program Integrated Projects	X			

Document Action Request

Section 1 – Originator Request

Document No.: EP-DIR-PLAN-10008	Revision No.: 1
Title: Environmental Programs Directorate Training Program Plan	Page 1of 1

Description of requested action (Attach numbered additional sheets if needed.):
Minor revisions

Originator Name (print):	Z#:	Organization:	Date:
Christina Reichelt	200938	BPS-D0	8/10/11

Section 2 – Approval for Processing – Responsible Manager

☐ New Document ☒ Minor Revision ☐ Deactivation ☐ Perform Concurrent Periodic Review?
☐ Major Revision ☐ Cancellation

Superseded Document(s) and Revision Number: N/A

☒ Approved ☐ Disapproved (return to originator) Comments PCR #'s: N/A mlt

Signature:	Print Name, Title:	Z#:	Date:
Gail Toddings	Gail Toddings	217061	3/12/12

Section 3 – Hazard Determination – Responsible Manager

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Section 4 – Required Reviews (see P315, Ch 16, Section 16.5.3)

Discipline:	Name:	Signature:	Date:

Validation Required (SME): ☐ Yes ☐ No ☒ Waive Comment:

Scope of Validation: ☐ Entire Procedure ☐ Change Only

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Training Determination completed?: ☒ Yes ☐ N/A Completed by:

USQ/USI Number (if needed):	Signature:	Z#:	Date:
N/A			
Derivative Classifier: ☒ Unclassified ☐ OUO ☐ UCNI ☐ Classified	Signature: Jean M Dewart	Z#: 92293	Date: 3-14-12
☐ DUSA DUSA#	Signature:	Z#:	Date:

Section 5– Final Approvals – Responsible Manager

☒ Release ☐ Hold Details:

Responsible Manager Signature:	Print Name, Title:	Z#:	Date:
Gail Toddings	Gail Toddings	217061	3/12/12
Additional Approval Signature:	Print Name, Title:	Z#:	Date:

EWMO Division Building Emergency Plan (BEP)

Effective Date: 12/10/13

The Responsible Manager has determined that the following organizations' review/concurrence is required for the initial document, and for major revisions, a same type and level review is required. Review documentation is contained in the Document History File:

Emergency Planning and Preparedness
Operations Center SME
Engineering
Facility Operations Director (FOD)
Fire Protection Engineering
Industrial Hygiene and Safety
Operations Managers
Quality Assurance
Training
Radiation Protection
Shift Operations Managers
SME WCRRF, RANT, TA-54 SOSs

Responsible Manager, EWMO Facility Operations Director

Steve M. Henry	/ 219172	/ /s/ Steve Henry	/ 12/10/13
Name (print)	Z#	Signature	Date

Classification Review: ☐ N/A ☒ Unclassified ☐ UCNI ☐ Classified _____

Teri Tingey	/ 200975	/ /s/ Teri Tingey	/ 12/10/13
Name (print)	Z#	Signature	Date

Working Copy / Information Only (circle one)
Initials / Date: _____/_____

REVISION HISTORY

Document No./Revision No.	Issue Date	Action	Description
EP-DIV-BEP-20048, Rev. 0	December 9, 2013	New Procedure	This new Division-level building emergency plan supersedes the following facility-level BEPs: • EP-DIV-PLAN-10, Radioassay and Nondestructive Testing Facility Emergency Plan • EP-DIV-PLAN-05, Waste Characterization, Reduction, and Repackaging Facility Building Emergency Plan • EP-DIV-PLAN-01, TA-54 Areas G, H, J, L, and Administrative Area Building Emergency Plan • TA-21-PLAN-00008, TA-21 Emergency Plan • EP-DIV-BEP-0102, TA-54 Buildings 1009 and 1014 Building Emergency Plan EP-AREAG-RM-AOP-0421, Security Incident Notifications, EP-WCRR-RM-AOP-0208, Special Shapes, EP-AREAG-RM-ARP-0302, Evacuation Alarm, EP-RANT-RMC-ARP-0303, Evacuation Alarm, EP-AREAG-RM-EOP-0206, Seismic Event, EP-AREAG-RM-EOP-0207, Vehicle Accident, EP-RANT-RMB-EOP-0207, Vehicle Accident, EP-RANT-RMB-EOP-0208, Seismic Event, EP-RANT-RM-EOP-0206, Injured Person with Contamination, EP-WCRR-RM-EOP-0304, Security Threat, EP-WCRR-RM-EOP-0308, Seismic Event, EP-WCRR-RM-EOP-0309, Injured Person at WCRRF. This procedure also supersedes EP-DIV-AP-20045, EWMO Abnormal Event Notification Process. EP-DIV-AP-20045 requirements were incorporated into EWMO Response procedure and references LANL Site Requirements. Nuclear Environmental Site (NES) are also included in the BEP. No hazardous analysis was required; this is considered and administrative procedure.
EP-DIV-BEP-20048, Rev. 1	December 10, 2013	Minor Revision	Revise procedure to remove the OUO designation in accordance with SAFE-1. This revision does not introduce any new hazards.

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1. PURPOSE

The Environmental and Waste Management Operations (EWMO) Division Building Emergency Plan (BEP) captures the Site Emergency Management and Response program requirements from Los Alamos National Laboratory (LANL) procedure P1201-4, Emergency Procedures and Protective Actions and P315, Conduct of Operations Manual. In addition, the EWMO BEP identifies area-specific response requirements for (1) Technical Area (TA)-50-69 Waste Characterization, Reduction, and Repackaging Facility (WCRRF) complex, (2) TA-54 Area G, H, J, L and TA-54 Administrative areas, (3) TA-54 Radioassay and Nondestructive Testing (RANT) Building 54-38 complex, (4) TA-21, and (5) Nuclear Environmental Sites (NES).

2. SCOPE

The EWMO BEP requirements apply to all personnel, subcontractors, tenants, and visitors entering the TA-54, RANT, WCRRF complex, TA-21, and NES.

Building residents who are assigned and qualified for escorting visitors assume the responsibility for ensuring that visitors possess the appropriate level of area-specific information (e.g., rules, regulations, exits, evacuation routes, assembly/muster areas, area specific alarms, and response procedures) necessary to respond appropriately in the event of an off-normal or emergency situation that may arise. Management has the overall responsibility for personnel accountability during an off-normal/emergency event.

The EWMO Division BEP will be reviewed on an annual basis and updated as necessary for changes that alter the scope of this document, corrections based on internal and audit findings, emergency drill and exercise lessons learned external changes in governing standards and references, and changes to facility operations and associated hazards.

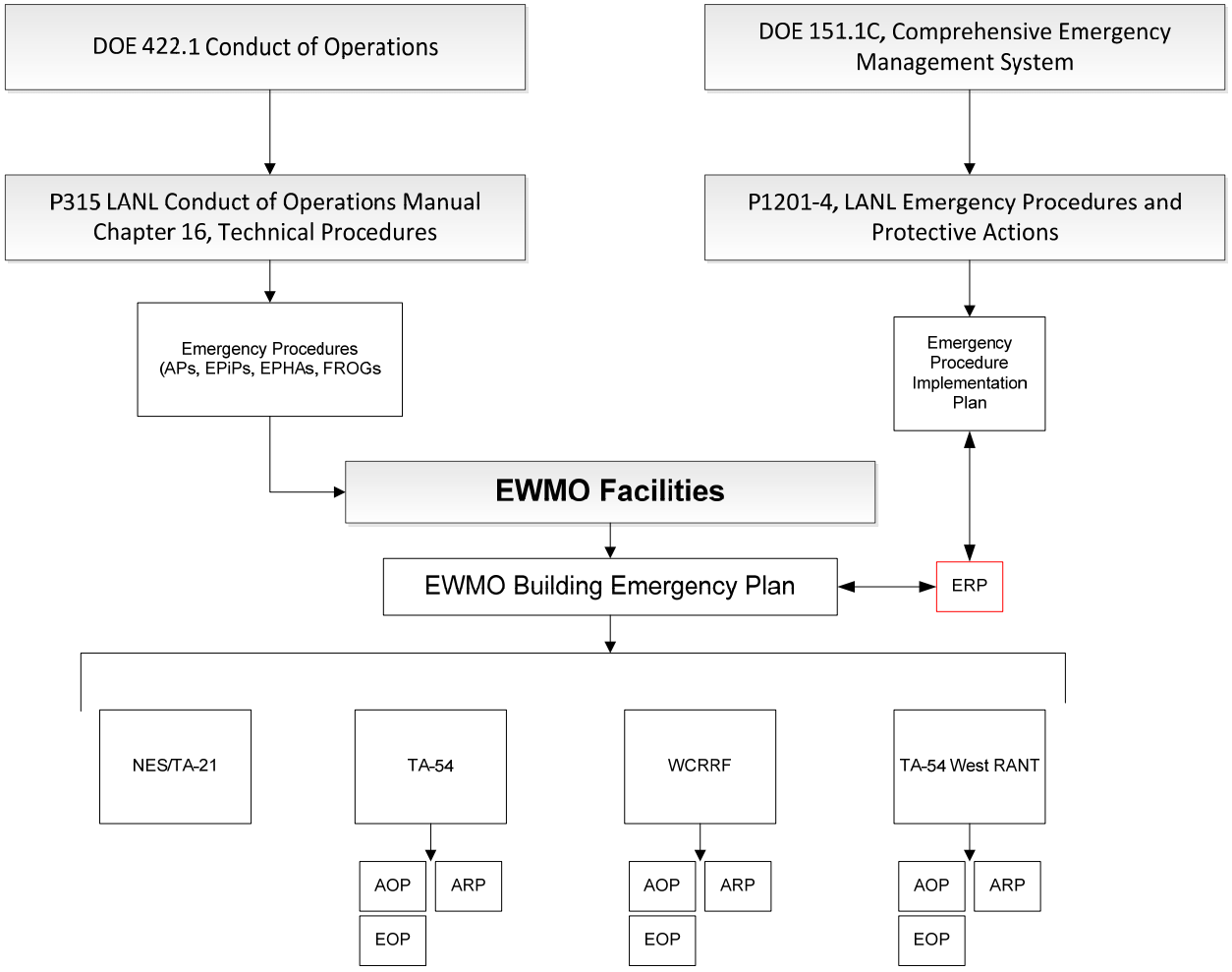
3. OVERVIEW

The EWMO Division BEP plays a key role in the successful implementation of the Site Emergency Management and Response program, Conduct of Operations, and area-specific response procedures for TA-54, WCRRF, RANT, TA-21 and NES. This plan also defines roles and responsibilities that are necessary to ensure that the chain of command is established and to ensure that employees respond correctly and consistently in a safe and timely manner when off-normal/emergency situations arise. Section 5, BEP Requirements, provides the requirements, roles, protective equipment, and standardized responses (i.e., Notification, Off-Normal, and Emergency) for employees working in EWMO facilities. Sections 6 through 10 provide building/area-specific requirements for WCRRF, TA-54, RANT, TA-21 and NES.

3. OVERVIEW (continued)

Figure 1, Emergency Management Process Requirements Flow-down illustrates the requirements derived from Department of Energy to LANL and into the EWMO BEP.

FIGURE 1, EMERGENCY MANAGEMENT PROCESS REQUIREMENTS FLOW-DOWN



4. RESPONSIBILITIES

4.1 First Responder at the Awareness Level

The first responder at the awareness level has the following responsibilities (i.e., first person at the scene of an off-normal/emergency event):

- Stops or suspends work
- Activates the appropriate alarm (i.e., fire, evacuation), as necessary
- Warns others in the immediate area of the off-normal/emergency event
- Secures the incident area to prevent others from entering
- Makes notifications to the Operation Centers, Emergency Operations and Support Center (EOSC) 7-6211, and/or 911 as appropriate

4.2 Shift Operations Manager/Facility Lead (SOM/FL)

NOTE *In EWMO facilities, the Shift Operations Manager (SOM) is the Facility Operations Director (FOD) designee in the field and assumes responsibilities as the Facility Leader (FL). The SOM/FL assumes the role of the FOD in the field. However, an Operations Manager (OM) may also conduct FL duties as long as the OM is trained, qualified, and knowledgeable of the area operations.*

The SOM/FL is the person in charge of the facility during an off-normal/emergency event and/or up until transfer to the Incident Commander (IC).

The SOM/FL has the following responsibilities:

- Coordinates with the Assembly/Muster Area Leader for personnel accountability, condition, and locations
- Ensures that 911 or EOSC 7-6211 has been called as necessary
- Updates the OM/designee of the situation
- Evaluates the event and potential hazards and determines whether additional evacuations are necessary
- Works with support personnel to mitigate the event within the EWMO facility

4.2 Shift Operations Manager/Facility Lead (SOM/FL) (continued)

- Available on-call outside normal working hours including nights, weekends, and holidays when assigned
- Determines appropriate actions for mitigation and notifications during an off-normal event
- Ensures appropriate actions are completed to protect the safety of workers, facility, equipment, records, and the environment
- Authorizes elevation of an off-normal event to an emergency event as necessary
- Makes notifications in accordance with respective response procedure
- Ensures that employees who may need special assistance are identified, and designates personnel to assist these employees
- Ensures accountability of all personnel
- Evaluates the potential hazards and determines the protective actions
- Briefs emergency responders and management personnel during an emergency
- Assists the IC in recovery and reentry efforts
- Transfers command and control to the IC and notifies Operations Center personnel when command and control is transferred

4.3 <u>Incident Commander</u>

Incident Commander is the formal title for the individual who is designated as the person in charge of an emergency response for the Site. This person will be a member of a designated emergency response organization and have completed formal training in emergency management and incident command.

NOTE *The IC will be from one of the formally designated and trained emergency response organizations from the Emergency Operations and Emergency Management (EO-EM), Los Alamos Fire Department (LAFD), SOC, or in unusual cases, from the Federal Bureau of Investigation (FBI) or other Federal agency, and will formally declare that he/she has assumed the IC role.*

- Manages the emergency event until mitigated or transferred back to the SOM/FL
- Authority to call out other response personnel and additional resources
- Assumes the role of IC during an emergency event

4.4 Shift Operations Supervisor

- Assists the SOM/FL to determine appropriate actions for mitigation and notifications during off-normal events
- Serves as a resource for the FL/IC and offsite responders during off-normal/emergency events
- Ensures that actions are initiated to protect the safety of site workers, programmatic equipment, records, and the environment
- Ensures that employees who require special assistance during an emergency are supported

4.5 Operations Center Operator

- Notifies personnel through various communication systems (e.g., E-pagers, public address system, land-line, two-way radio, cell phone, and face to face) on initial off-normal/emergency activities at WCRRF, TA-54, and TA-54 West RANT.
- Notifies adjacent facilities of off-normal/emergency events as applicable
- Facilitates command and control functions under the direction of the SOM/FL until turned over to the IC
- Records and logs initial and ongoing notifications in accordance with this plan
- Acts as a liaison between SOM/FL, IC, and the workers
- Coordinates accounting of personnel at the Assembly/Muster areas
- Assists in directing emergency response personnel and equipment to emergency site/areas
- Monitors the two-way radio base station and the Site Wide Alert Notification System (SWANS) radio
- Maintains a written log of off-normal and/or emergency events in the Operations Center log book
- Ensures that the SWANS radio is operational
- Develops and maintains the Emergency Contact List at the respective Operations Center (Appendices 3, 5, and 8)

4.6 Support Personnel (Environment, Safety, and Health)

The support personnel receive notification from the Operations Center and/or SOM/FL when an off-normal/emergency event arises as necessary.

- Acts a subject matter in their field of expertise (e.g., Industrial Hygiene/Safety) during off-normal/emergency events
- Supports IC or SOM/FL in developing remedial and recovery plans

4.7 Assembly/Muster Area Leader

- Assumes command of Assembly/Muster area
- Collects and gathers information from personnel who were at the incident site
- Liaison between Operations Center and personnel
- Initiates the accountability of personnel
- Makes notification to the respective Operations Center
- Ensures that personnel who may be radiologically contaminated are segregated from the general population
- Delegates tasks as necessary to employees at the Assembly/Muster area during an emergency event
- Directs vehicle traffic on roadways to ensure emergency response vehicles have an open route to the event area as necessary

4.8 Facility Resident

- Notifies Operations Center of off-normal/emergency events
- Notifies EOSC 7-6211 and/or 911 for emergency events
- Responds to off-normal/emergency events in accordance with the requirements of this plan and the facility-specific off-normal/emergency response procedures
- Performs assigned duties from Assembly/Muster Area Leader
- Performs escort responsibilities if assigned

4.9 Visitor

- Responds to alarms and notifications in the event of an off-normal/emergency event
- Stays with their designated escort during off-normal/emergency events

5. BEP REQUIREMENTS

5.1 Site Events

The Laboratory has identified several abnormal/emergency events (e.g., chemical, biological, radiological, fire, security, weather, vehicular accident, and personnel injury) that may affect the general laboratory population, the public, and the environment. These events and their responses are captured in LANL policies and procedures Table 1, General Site Events and References.

NOTE *Unless otherwise recommended or directed by EWMO management, the events listed in Table 2 below provide specific events and the associated reference that contains the response actions.*

TABLE 1, GENERAL SITE EVENTS AND REFERENCES

Bomb threat	P1201-4, LANL Emergency Procedures and Protective Actions
COOP	P1201-4
Fire, Smoke and Explosion	P1201-4
Flood	P1201-4
Hazardous Substance/Chemical Spill	P1201-4
Lightning	P1201-4
Power Outage	P1201-4
Security Concern	P1201-4
Seismic Event (Earthquake)	P1201-4
SIP/Stay Put	P1201-4
Snow and Ice	P1201-4
Suspicious/Unattended Packages	P1201-4
Unexploded Ordnance	P1201-4
Vehicle Accidents	P101-7, Vehicles and Pedestrian Safety
Work Related Injury, Illness	P102-2, Occupational Medicine
Workplace Violence	P724, Workplace Violence

5.2 Facility Specific Procedures

TA-54 and WCRRF Operations Centers maintain controlled copies of the facility-specific response procedures that apply to TA-54, WCRRF, and RANT. Four types of response procedures are used in accordance with P315, Conduct of Operations Manual, Section 16, Technical Procedures.

5.2.1 Abnormal Operating Procedure (AOP)

AOPs provide instructions for responding to events that affect several systems, threaten the safety envelope, or require action to mitigate damage.

5.2.2 Alarm Response Procedure (ARP)

ARPs direct the response of personnel to visible and audible alarms.

5.2.3 Emergency Operating Procedure (EOP)

EOPs provide instructions for responding to events that result in operation outside the safety envelope.

5.2.4 Emergency Response Procedure (ERP)

ERPs provide instructions for responding to an emergency in progress. ERPs include steps or reference other procedures that define the response to additional casualties that could result from the initial event.

5.3 Response Actions

EWMO has developed the following three worker response actions.

5.3.1 Notification Response

The notification response is a notification by the worker of an upset condition. Notification response does not require immediately exiting or evacuating. Once the worker has completed the notification response steps, the SOM/FL and/or support team will provide guidance and protective measures for the worker via the applicable Operations Center.

The notification response action is as follows;

1. **MAKE** Notifications (i.e., Operations Center).
2. **WARN** others.
3. **WAIT** for directions and guidance from the Operations Center and FL/IC.

5.3.1 Notification Response (continued)

The following events have been categorized as requiring a Notification Response:

TA-54 Area G	RANT	WCRRF
• Loss of Electronic Badge Reader • 231 Permacon HVAC LOW Cell D/P • 375 Permacon HVAC LOW Cell D/P • Fire Department Manning Less than 50 Percent	• Loss of Electronic Badge Reader • Fire Department Manning Less than 50 Percent	• Loss of Electronic Badge Reader • Fire Department Manning Less than 50 Percent • WCRRF Loss of Confinement Ventilation System (CVS) • WCRRF Glovebox Fire Suppression Inadvertent Initiation • WCRRF WCG High Pressure Alarms • WCRRF Confinement Ventilation System (CVS) Low Flow Alarms • WCRRF Confinement Ventilation System (CVS) Room 102 High Pressure Alarms • WCRRF CVS HEPA Filter Alarms • WCRRF Confinement Ventilation System (CVS) GBE High Pressure Alarms • WCRRF TE/TI-001 and 002 Low Temperature Alarms • WCRRF Confinement Ventilation System HVA Low Flow Alarm

5.3.2 Off-Normal Response

An off-normal response is an action taken by the worker in a timely manner to ensure they back away from the immediate area (e.g., out of harm's way) until the event can be evaluated and appropriate actions taken to mitigate the situation to prevent it from elevating to an emergency.

The off-normal response steps are:

1. **SUSPEND** work.
2. **WARN** others.
3. **ISOLATE** the immediate area.
4. **MOVE-AWAY** upwind from the area of concern
5. **MAKE** Notifications (e.g., Operations Center and SOS).

Once the worker has performed the off-normal response steps listed above, there are no further actions taken by the worker to mitigate the incident at this time. The SOM/FL and the support team will provide guidance and protective measures to the workers via the applicable Operations Center.

The following list below provides events that have been categorized as response procedures requiring an off-normal response:

TA-54 Area G	RANT	WCRRF
• Discovery of an Airborne, Liquid or Solid Material Release or Spill • Unplanned Loss of Electrical Power • Waste Container • Questionable Integrity • CSLA Non-Compliance	• Discovery of an Airborne, Liquid or Solid Material Release or Spill • Unplanned Loss of Electrical Power • Waste Container • Questionable Integrity • CSLA Non-Compliance	• Discovery of an Airborne, Liquid or Solid Material Release or Spill • Loss of Glovebox Integrity • Unplanned Loss of Electrical Power • Waste Container • Questionable Integrity • CSLA Non-Compliance

5.3.3 Emergency Response

Emergency response actions taken by the operator in the event of an emergency to ensure personnel safety and prompt notification to management and/or Emergency Management. There are no actions taken by the worker to attempt to mitigate the event. Once the worker has performed the emergency response steps listed below, the EOSC, 911, SOM/FL, and the support team will provide guidance and protective measures to the workers via the applicable Operations Center.

The emergency response activities are as follows:

1. **SUSPEND** work.
2. **WARN** others.
3. **ISOLATE** immediate area.
4. **EVACUATE** to an upwind Assembly/Muster area from the incident.
5. **MAKE** Notifications (e.g., SOS, OC, EOSC, 911).

TA-54 Area G	RANT	WCRRF
• EWMO Area Emergency Response	• EWMO Area Emergency Response	• EWMO Area Emergency Response

5.4 Operations Center Response Protocol

Upon entering the abnormal or emergency response procedure (i.e., AOP, EOP, or ERP) the SOM will designate roles and responsibilities (record keeping, log keeping, phones, communications systems) to members of the Operations Center as necessary. The SOM's primary duty during an off-normal/emergency event is to act as the facility leader and overall controller of activities and operations in order to maintain attention to the incident. The response procedure is used to document all event activities (e.g. times, dates, actions) and is a quality record. The OCO logbook is the official logbook that requires documenting the entry into, and exit from, the response procedure and other important non-incident specific information. The SOS and SOM are not required to keep logs during the incident. When a facility enters an ARP, the Operations Center will be notified, but other activities at the facilities will continue normal operations, including the Operations Center, unless deemed otherwise by the SOM.

5.5 Responsibilities Assembly/Muster Areas

Assembly/Muster areas are designated areas for workers and visitors to gather in the event of an emergency or as directed by the SOM/FL.

The Assembly/Muster areas are identified by a large yellow metal box and an orange and white striped wind sock on a pole. Assembly/Muster areas maps for WCRRF, TA-54, RANT, and TA-21 are illustrated in the appendices of this procedure. Assembling/Mustering to a secondary location after initial evacuation if necessary is directed by the Operations Center/SOM/FL and/or the IC.

NOTE *Assembly/Muster area equipment and supplies are inspected weekly in accordance with EP-DIV-DOP-0102, EWMO RCRA Inspections.*

Assembly/Muster areas contain at a minimum the following equipment and supplies for use during off-normal/emergency events:

- A clipboard with roll-call checklists and two-way radio instructions (shown in Appendix 2)
- A copy of the Division Building Emergency Plan
- Assembly/Muster area lead vest (blue)
- Assembly/Muster Area Leader Checklist (instructions for Assembly/Muster Area Leader)
- First aid kit
- Grease pens and pencils
- Instruction card and “Gone to Assembly/Muster area #” card
- Two-way radio
- Wind sock
- Orange vest (for personnel performing traffic control)

The first person to arrive at the Assembly/Muster area during an emergency who is knowledgeable and willing to perform the duties assigned, acts as the Assembly/Muster Area Leader. A checklist is available at each Assembly/Muster area that provides actions to be performed by the Assembly/Muster Area Leader.

5.6 Accountability

Each worker has the primary responsibility to report to the Assembly/Muster Area Leader for accountability.

In EWMO organizations, there are three methods for obtaining personnel accountability during an off-normal/emergency event:

- Badge reader
- Sweep process
- Sign-in sheets at Assembly/Muster areas

The electronic badge reader system records and tracks personnel who enter and exit TA-54 Area G, TA-54 Area L, RANT, and WCRRF. If a situation arises where personnel accountability is required, the applicable Operations Center can generate a personnel accountability report from the badge reader system which provides a list of personnel currently logged into a specific area (e.g., TA-54 G, L, RANT, and WCRRF).

The sweep process is used primarily in administration areas and other areas that do not possess an electronic accountability system. When personnel are required to evacuate, each person will perform a visual sweep and verbal communications (e.g., is anyone here? the area is being evacuated) for personnel in the exit route out of the building. The last person to egress the facility will provide personnel accountability information to the Assembly/Muster Area Leader. Once employees assemble at the Assembly/Muster areas, they will complete a sign-in sheet/roster to document their location.

In all three methods, personnel not accounted for will be communicated to the FL/IC.

5.7 Protective Actions

5.7.1 Shelter-In-Place (SIP)

SIP means to make a shelter where workers are currently located. It is a method to protect occupants until help arrives or otherwise directed by Operations Center and FL. This type of sheltering is for hazardous material events (chemical, biological, radiological). Taking cover in any building will provide some shelter, and is safer than staying outside and potentially receiving a greater exposure to the hazard. Personnel are instructed to remain inside and follow instructions from the SOM/FL or IC. SIP is a temporary protective action and is short-term (1 to 3 hours) until the hazardous situation has passed, and the "All Clear" has been announced. The SOM/FL or IC will make the decision to SIP. Notifications will be communicated via one or more of the following: Public Address system, two-way radio, e-pagers, cell phones, and/or face to face.

General guidelines to SIP include:

- If a SIP kit is not available: assign workers to shut all windows (if any), doors, and assemble in a location away from windows and doors (hallway) for SIP
- Turn building thermostats off to stop outside airflow into building
- Conduct accountability and report results to respective Operations Center/FL/SOM
- Remain in shelter location until the Operations Center/FL/SOM informs personnel it is safe and the sheltering order has been lifted

5.7.2 Stay-Put

The type of sheltering utilized most often by the LANL population is Stay-Put sheltering. Stay-Put sheltering is the protective action used during non-hazardous material events (terrorism event, inclement weather, wild fire). This protective action calls for personnel to move or remain indoors due to an event that may place personnel in harms way outside. Examples of these events are wild land fire, a terrorism event, or inclement weather. The SOM/FL or IC will make the decision to Stay-Put.

Recommended actions to Stay-Put include:

- Stay inside
- Notify building personnel and visitors of the protective action and information about the event (if provided)
- Contact the applicable Operations Center and provide personnel status and accountability

5.7.3 Lightning

If lightning is sighted, employees **SHALL** use the 30/30 rule:

- Seek shelter if lightning is within 6 miles (flash to bang count is 30)
- Move away from any metal objects and grounding system components
- Do not remain upright in an open area or seek shelter near tall, upright objects (trees), take cover in a vehicle or building
- Shelter for at least 30 minutes after the last lightning strike within 6 miles

5.8 Chain of Command Process

The chain of command is the process that identifies positions, roles, and responsibilities for those individuals who are designated and authorized as the person-in-charge during an off-normal/emergency event.

The FL (e.g., SOM, OM) directs the initial command and control during an Off-normal/emergency event. The SOM/FL is a person who possesses the experience and knowledge associated with the area to lead the facility management and workers in an off-normal/emergency response and/or until relieved by the Site IC. An IC will be a designated Emergency Management person who responds as the individual authorized by the institution with the authority and responsibility for command and control at the incident scene.

When the responsibility for command and control is transferred to the IC, the SOM/FL remains available to the IC for area-specific technical support and assistance. A formal transfer of duty from the SOM/FL to the IC is required in a timely manner. Transferring command and control back to the SOM/FL is also a formal process. The level of formality is based upon the severity level of the event.

EWMO utilizes the Operations Center model at WCRRF and TA-54 as part of the EWMO organizational structure which acts as a liaison between LTP management, Facility Lead, IC, Emergency Operations and Emergency Management (EO-EM), and the workers. The TA-54 and WCRRF Operations Centers are staffed during normal operations. The notification process for off-normal hours is performed through the EWMO on-call list and Emergency Operations and Support Center (EOSC) 7-6211.

5.8 Chain of Command Process (continued)

Figure 2, Chain of Command Model

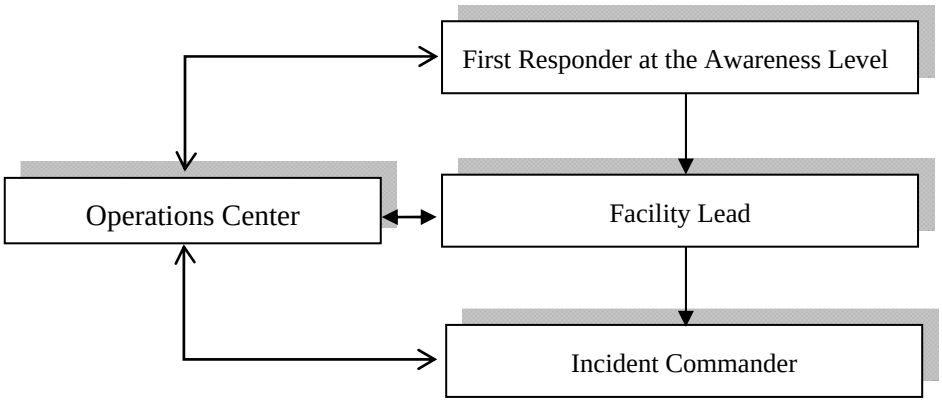
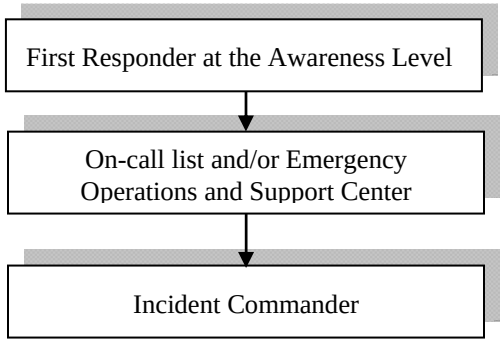


Figure 3, Chain of Command Model Off-Hours



5.9 <u>EWMO Communication Equipment and Warning Systems</u>

EWMO maintains a variety of communication equipment and warning systems to effectively communicate with personnel and emergency responders when off-normal/emergency situations arise.

Cell Phones – Cell phones may be used for notifying the applicable Operations Center, EOSC 7-6211, and 911. Cell phones may also be set-up to receive emergency text messages the same as E-Pagers. If cell phones are used to contact 911, callers must communicate their location and the location of the event. Cell phones are a primary means of communication during an off-normal/emergency event.

Conventional Telephones – Conventional telephones may be used to notify the Operations Center, EOSC, and 911 in the event of an off-normal/emergency event.

5.9 EWMO Communication Equipment and Warning Systems (continued)

Continuous Air Monitor (CAM) – CAMs are used in areas that require continuous air monitoring for radiological airborne contamination. If radiological airborne contamination reaches the pre-determined level, the CAM will produce an audible and visual alarm warning personnel that radiological airborne contamination is present thus requiring personnel not wearing respiratory protection to exit the area and follow the instructions of a supporting Radiological Control Technician (RCT).

E-Pagers – E-pagers are electronic devices set-up to receive text messages from a variety of sources (e.g., LANL phone book, LAN line, EOSC) for the purposes of communicating general information to employees. E-Pagers are limited to 140 characters. E-pagers can also be set-up to receive broadcast emergency messages from Operations Center and LANL.

Evacuation Alarm – The evacuation alarm provides an audible alarm that can be heard throughout the area to alert workers to evacuate to the nearest upwind Assembly/Muster areas. An evacuation alarm system is available at TA-54 Area G, L, and the Administrative area, and an additional independent system for the RANT complex. The evacuation alarm can be activated from several locations as illustrated on Appendix 7, TA-54 Area G Evacuation Alarm Button Locations, and Appendix 10, RANT Evacuation Alarm Button Locations. Any worker who determines an emergency situation that endangers all workers in the area can activate the evacuation alarm. The evacuation alarm is a local alarm, and is not connected to Central Alarm Systems (CAS).

Fire Alarms – Fire alarm systems and warning devices are engineered for facilities and a structure's specific needs (e.g., sprinkler head, heat sensors, and manual pull station). Fire alarms emit an audible long whooping tone that warns personnel in the immediate area to evacuate to the nearest upwind Assembly/Muster area and the alarm transmits and signals to CAS. See Sections 6, 7, and 8 for area-specific fire system information.

Conventional Phones – Land lines can be used for communicating off-normal and emergency information to the Operations Center, EOSC, and 911.

PA System – Public address systems are installed in the TA-54 and RANT facilities to provide a means for broadcasting audio communication to employees for off-normal/emergency events. Use of the PA for non-emergency announcements SHALL require approval from the Operations Center and the SOM.

5.9 EWMO Communication Equipment and Warning Systems (continued)

Two-Way Radios –Two-way radios are another method to communicate between Assembly/Muster areas, SOS, Operations Center, SOM/FL and EOSC. Each Assembly/Muster area is equipped with a two-way radio.

Site Wide Area Notification System (SWANS) Radio – The SWANS Radio is a LANL-wide emergency radio system designed primarily as a back-up communication system in the event normal communication systems are diminished or unavailable. SWANS radios are monitored in the Operations Center. Instructions for proper testing and operation are listed in Appendix 2, Site Wide Area Notification System (SWANS).

Wind Sock – Wind socks are placed strategically placed throughout LANL site to provide a visual means for employees to determine the wind direction. There are two different colors schemes. Wind socks that are solid orange are placed throughout the site in areas that are populated with workers that would require a reference point to determine wind direction. Wind socks that are orange with white strips denote the location of an Assembly/Muster area. Wind socks are especially important when an abnormal/emergency event occurs which requires employees to quickly determine wind direction for the purposes of staying upwind from the event to prevent unnecessary exposure to potential hazardous materials.

5.10 Support Personnel

Support personnel are subject matter experts (SMEs) in their field who assist the SOM/FL or IC during an off-normal/emergency event as necessary.

The following personnel groups may support the FL/IC in an off-normal/emergency event:

- Industrial Safety and Hygiene
- Radiological Protection

Additional organizations that may provide assistance:

- Criticality Safety Officer
- Criticality Safety Engineer
- Emergency Management
- Engineering
- Environmental
- Hazardous Waste
- Maintenance
- On-Site Transportation
- Operations Manager
- Security
- Utilities
- Waste Coordinator

5.11 Emergency Access Control

During an emergency, saving life **SHALL** take precedence. Emergency personnel **SHALL** be allowed to enter the area without delay. Personnel **SHALL** not leave the incident area unless directed to do so by the IC.

5.12 Adjacent Facilities

Off-normal/emergency events have the potential to impact adjacent facilities (e.g., response vehicles, road closures). Notification to adjacent facilities will normally be accomplished by the Operations Center, SOM/FL and/or the EOSC.

5.13 EWMO Abnormal Event Notification Process

The first communication is defined as Initial Notification. During an off-normal/emergency event, the initial notification from the first responder (awareness) to the respective Operations Center and/or 911 initiates the process. The Operations Center will in turn notify the Shift Operations Manager.

The SOM/FL is responsible for notifying the Operations Manager who in turn will at a minimum notify the FOD, ES&H Manager, and the Project Manager as necessary.

Communications up the chain of command are required in accordance with P322-3 and with directorate-level reporting requirements as described in SOP-5228, ADEP Reporting Requirements for Abnormal Events.

5.14 Recovery Plan

The recovery plan is a process to determine actions required to return the facility/area to normal operations. The Recovery Manager will develop the requirements for resuming normal operations. A graded approach to the level of formality should be applied based upon the type of event/incident and hazards involved; extent of damage to facility, equipment, and environment; cause of the emergency/event; and actions required to prevent a re-occurrence. For an off-normal event, the SOM/FL has the authorization to return operations to normal. If the event is considered an emergency event, reentry and return to normal operation **SHALL** be at the discretion of the IC.

5.14 Recovery Plan (continued)

If the Duty Emergency Manager has categorized the emergency as an Operational Emergency, reentry and return to normal operations will be at the discretion of the Emergency Director at the EOSC. The FOD will generally be appointed as the Recovery Manager for returning the facility to normal operations.

When an emergency is over, then the IC will declare that the emergency has ended and direct that the "All Clear" be announced.

- Only the IC may declare an emergency is over
- Each Assembly/Muster area may be released individually
- Some Assembly/Muster areas may be released prior to others if the hazards are localized
- Assembly/Muster area **SHALL** be released only if the release will not endanger personnel or present problems for mitigating the situation

Each event will be evaluated independently for reentry and return to normal operation. Under no circumstances are personnel authorized to reenter the affected area, in an emergency unless given the "All Clear" by the IC.

An off-normal/emergency event **SHALL** not be considered over when an alarm is silenced or acknowledged.

6. WCRRF SPECIFIC REQUIREMENTS

The WCRRF Operations Center is the access control point for entry to WCRRF Building TA-50-69 and WCRRF 50-69 yard.

Assembly/Muster Areas
The Assembly/Muster areas are illustrated on Appendix 4, WCRRF Assembly/Muster Area Locations.

Fire Alarms – WCRRF Building TA-50-69 is equipped with automatic fire suppression and manual pull stations to notify personnel of a fire. The automatic and manual stations are connected to the Digital Alarm Communication System (DACS) which in turn will communicate the alarm with the Central Alarm Station (CAS). There is one DACS panel for Building TA-50-69: Fire Alarm Control Panel DACS 1522 (-1).

Fire alarm manual pull stations are distinctive red metal boxes mounted on walls inside Building TA-50-69. In the event of a fire or explosion, personnel should activate the manual fire alarm pull stations and call 911 and the WCRRF Operations Center at 665-2797, or the Maintenance on Call (MOC) pager 500-6965 (after hours). When an automatic or manual fire manual pull station is activated at WCRRF, the LAFD is automatically notified of the location. The WCRRF Operations Center will notify personnel of the situation using one or more of the communication systems (Public address, two-way radio, e-pagers, cell phones, and/or face to face).

Additional requirements when an off-normal or emergency event occurs:

- If wearing a respirator, do not attempt to remove the respirator until given direction by a RCT.
- If working with classified or sensitive material, and the area is established as a Temporary Limited Area, and if safe to do so, cover up the material prior to exiting the facility, and inform the Assembly/Muster Area Lead and Supervisor of the situation.
- When working in a facility/structure that is designed with a Confinement Ventilation System (e.g., TA-50-69) for the purpose of maintaining a negative differential pressure, employees **SHALL** ensure that one set of personnel airlocks remains closed upon exiting
- If working in a radiological controlled area during an off-normal event, follow the instructions of an RCT.
- During an emergency event, all personnel who may be potentially contaminated should not commingle with other personnel at the Assembly/Muster area prior to being surveyed by an RCT.

7. TA-54 SPECIFIC REQUIREMENTS

TA-54 consists of the TA-54 Administrative Area, and Areas G, H, J, and L. RANT complex is known as TA-54 West RANT and is described in Section 8, RANT Specific Requirements.

The TA-54 Operations Center is the access point for Area G is located at the entrance of the TA-54 Area G Controlled Area TA-54-315, Room 105). The Operations Center is staffed during day shift (0700) to 1730 hours). The Operations Center may be staffed to support after-hour activities as determined by management. The TA-54 Operations Center maintains a phone number for regular business activities at extension 665-2735. When notifying the TA-54 Operations Center of an abnormal/emergency event the following number **665-1288 SHALL** be used. The Operations Center will ensure this phone number receives priority over all other calls.

TA-54 maintains a database of the hazardous constituents contained within the waste at TA-54 Area G. The database is accessible from the Waste Services group and the Information Management group. Emergency Planning and Preparedness maintains Building Run Sheets that contain limited information on hazardous material inventories for the FL/IC and emergency responders.

The fire alarms are zoned into five areas, which operate independently.

TABLE 2, DACS IN TA-54

Zone 1, Fire Alarm Control Panel DACS 6148(-1) (located in 54-48)	Structures 54-48, 54-229, 54-230, 54-231, 54-232, 54-289
Zone 2, Fire Alarm Control Panel DACS 6146(-1) (located in 54-412)	Structure 54-412
Zone 3, Fire Alarm Control Panel DACS 6149(-1) (located in 54-11)	Structures 54-2, 54-11, 54-33, 54-49, 54-153, 54-224, 54-273, 54-283, 54-287, 54-302, 54-321, 54-322, 54-323, 54-375, 54-491, 54-1027, 54-1028, 54-1030, 54-1041,
Zone 4, Fire Alarm Control Panel DACS 6147(-1) (located in 54-51)	Structures 215 (Area L), Admin. Bldgs: 54-22, 54-37, 54-51, 54-60, 54-64, 54-244, 54-245, 54-246, 54-247, 54-290, 54-434, 54-1050,
Zone 5, Fire Alarm Control Panel DACS 6144 (-1), Structure 54-38	Structures 54-38

7. TA-54 SPECIFIC REQUIREMENTS (continued)

Building 54-532 and 54-533 do not have fire alarms. Areas J and H do not possess automated fire alarms systems.

Additional TA-54 requirements during an off-normal or emergency event

- If wearing a respirator, do not attempt to remove the respirator until given direction by the RCT.
- The location of the safe zone may vary depending on whether the event is inside or outside the facility.
- If working in a radiological controlled area during an off-normal event, follow the instructions of an RCT.
- During an emergency event, all personnel who may be potentially contaminated should not commingle with other personnel at the Assembly/Muster area prior to being surveyed by a RCT.
- If working with classified or sensitive material, and the area is established as a Temporary Limited Area, and if safe to do so, cover up the material prior to exiting the facility, and/or inform the Assembly/Muster Area Lead of the situation.
- When working in a facility/structure that is designed as a contamination control enclosure (e.g., TA-54-412 Tent, TA-54-231 PermaCon, and TA-54-375 PermaCon), employees **SHALL** ensure that all doors to the contamination control enclosure remain closed upon exiting.

TA-54 is divided into eight response zones that correspond to locations where the fire alarm was initiated or activated (see Appendix 6). Emergency response zones were developed because of the size of the work areas at TA-54, thus allowing the worker to exit to the nearest upwind Assembly/Muster Area and to provide pertinent information to the TA-54 Operations Center for the zone in which the alarm was activated.

Area G Controlled Area Domes Buildings Structures	Zones I – IV
Area G Operations Center	Zone IV
Main Administrative Area	Zone V
Area L Storage Yard	Zone V
Building 54-532 and 54-533	Zone VI
Area between Area J and Building 54-533	Zone VI
Area J and Area H	Zone VII
Radioassay and Nondestructive Testing Facility (RANT)	Zone VIII

Other Alarms – TA-54 Area G maintains additional alarms (such as Tritium, O2, low flow) in certain areas that warn personnel in the immediate vicinity.

8. RANT SPECIFIC REQUIREMENTS

RANT is equipped with an Evacuation Alarm system that may be activated from several strategic locations in the RANT facility for the purpose of alerting all employees to evacuate to the nearest upwind Assembly/Muster area (see Appendix 9, RANT Assembly/Muster Area Locations). This alarm is not connected to the CAS.

Additional requirements at RANT during an off-normal or emergency event:

- Workers in a facility/structure that is designed with ventilation (e.g., TA-54-38) for the purpose of personnel comfort (heating, cooling) **SHALL** ensure that exterior doors of the facility are closed upon exiting during an off-normal event.
- Alarms are considered actual unless notified by TA-54 Operations Center or Facility Lead.
- Personnel who are trained and qualified to use fire extinguishers may attempt to mitigate small incipient fires.
- If working in a radiological controlled area during an off-normal event, follow the instructions of an RCT.
- During an emergency event, all personnel who may be potentially contaminated should not commingle with other personnel at the Assembly/Muster area prior to being surveyed by an RCT.

Fire Alarm System – RANT Building TA-54-38 is equipped with automatic fire suppression and manual pull stations in the event a fire develops. The automatic and manual stations are connected to Digital Alarm Communication System (DACS) which in turn will communicate the alarm with Central Alarm Station (CAS). There is one DACS panel for Bldg. TA-54-38: Fire Alarm Control Panel DACS 6144 (-1).

Fire alarm manual pull stations are distinctive red metal boxes mounted about 4 feet above the ground on walls inside Building TA-54-38. In the event of a fire or explosion, personnel should activate the manual fire alarm pull stations and notify 911 and call either the TA-54 Operations Center at **665-1288**, or the Maintenance on Call (MOC) pager **500-6965** (after hours). The TA-54 Operations Center maintains a phone number for regular business activities at extension **665-2735**. When an automatic or manual pull station is activated at RANT, the LAFD is automatically notified of the location. The TA-54 Operations Center will notify personnel of the situation using one or more communication systems (Public address, two-way radio, e-pagers, cell phones, and/or face to face).

9. TA-21 SPECIFIC REQUIREMENTS

TA-21 is a secured and locked area. Access and work activities are controlled through the TA-64 Operations Center. Any work conducted at TA-21 will be performed under an approved Integrated Work Document (IWD). The IWD at a minimum **SHALL** identify the following requirements for personnel entering and/or conducting work activities at TA-21:

- Assembly/Muster station locations
- Process for accountability of personnel in an abnormal/emergency event
- Type of communications systems (e.g., two-way radio, cell phones)

The following types of activities are conducted at TA-21 under an approved IWD

- Maintenance of lights on water towers
- PMIs
- Stormwater/Pollution Prevention
- Vegetation control
- Water/Air Quality activities

10. NES SPECIFIC REQUIREMENTS

Any work conducted at Nuclear Environmental Sites will be under an approved Integrated Work Document (IWD). The IWD at a minimum **SHALL** identify the following requirements for personnel entering and/or conducting work activities at NES:

- Assembly/Muster station locations
- Process for accountability of personnel in an abnormal/emergency event
- Type of communications systems (e.g., two-way radio, cell phones)

11. TRAINING

Workers will be trained to the information in this BEP as determined by analysis to be commensurate with their job, access, and duty requirements.

12. RECORD PROCESSING

None

13. REFERENCES

EP-DIV-DOP-0102, EWMO RCRA Inspections

P101-7, Vehicles and Pedestrian Safety

P102-2, Occupational Injury and Illness reporting and Investigation

P201-3, Reporting Known and Potential Incidents of Security Concern

P315, Conduct of Operations Manual

P322-3, Performance Improvement for Abnormal Events

P724, Workplace Violence

P1201-4, LANL Emergency Procedures and Protective Actions

SOP-5228, ADEP Reporting Requirements for Abnormal Events

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DEFINITIONS AND ACRONYMS

Definitions

Assembly Muster Station – A designated rallying point away from the work area equipped with communication equipment and first aid supplies. Personnel evacuate to the upwind Assembly/Muster areas in response to emergency situations.

Chain of Command – The chain of command is the formal process of establishing authority to manage an off-normal or emergency event.

Controlled Area – Any area to which access is controlled in order to limit access of the general public to radiation and radioactive materials. A Controlled Area is an area in which elevated radiation and/or contamination levels may exist as a consequence of routine or non-routine site operations.

Emergency Management & Response – A Laboratory organization tasked with directing and coordinating response actions to emergencies throughout the Laboratory.

Emergency Management Group – A Laboratory organization tasked with directing and coordinating response actions to emergencies throughout the Laboratory.

Emergency Operations and Support Center – LANL's Emergency Operations Center (EOC) runs the 24/7 Emergency Operations Support Center staffed by communications specialists and on-call emergency managers, LANL personnel can call the Center for assistance with or information about all non-life-threatening situations that involve off-normal or unusual circumstances.

Facility Leader – The FL is the TA-54 Facility person in charge of emergency operations until transferred to the incoming IC.

First Responder at the Awareness Level – The first person to become aware of an abnormal/emergency event.

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DEFINITIONS AND ACRONYMS

Incident Commander – A trained and qualified emergency professional from emergency management, SOC Los Alamos (the Laboratory's protective force), Los Alamos County Fire Department, Los Alamos County Police Department, or other federal authority having jurisdiction that takes command and control of the event.

Stay-Put – The type of sheltering utilized most often by the LANL population is stay-put sheltering. Stay-put sheltering is the protective action used during non-hazardous material events. This protective action calls for personnel to move or remain indoors due to an event that puts personnel in harm's way outside. The SOM/FL or IC will make the decision to Stay-Put.

Shelter-in-Place – A protective action taken by personnel to isolate themselves from a hazard.

Spill – An intentional or unintentional release of oil, PCBs, liquid hazardous substances, or liquid radioactive substances to the environment that is not permitted under Laboratory, state, or federal permits.

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DEFINITIONS AND ACRONYMS

Technical Area 54 – Technical Area 54 is comprised of process and administrative support areas. Contained in TA-54 are the following Area G, H, J, L, 54 Administrative areas, and RANT complex.

Visitor – Any individual, including Laboratory employees or subcontractors, who requires access to RANT but does not have authorized access to the specific area he/she wishes to enter.

Acronyms

A/MAL	Assembly/Muster Area Lead
BEP	Building Emergency Plan
CAM	Continuous Air Monitor
CAS	Central Alarm Station
EO-EM	Emergency Operations and Emergency Management
EOSC	Emergency Operations and Support Center
EWMO	Environmental Waste Management Organization
FL	Facility Leader
FOD	Facility Operations Director
IC	Incident Commander
IS&H	Industrial Safety and Hygiene
LAFD	Los Alamos Fire Department
LAPD	Los Alamos Police Department
LTP	LANL TRU Programs
NES	Nuclear Environmental Sites
OCO	Operations Center Operator
OM	Operations Manager
PA	Public Address
RANT	Radioassay and Nondestructive Testing Facility
RCT	Radiological Control Technician
SIP	Shelter in Place
SP	Stay-Put
SOM	Shift Operations Manager
SWANS	Site Wide Alert Notification System
TA	Technical Area
WCRRF	Waste Characterization, Reduction, and Repackaging Facility

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SITE WIDE AREA NOTIFICATION SYSTEM (SWANS)

Radio Instructions

The Site Wide Area Notification System (SWANS) Radio is a LANL-wide emergency radio system for the purpose of back-up communications, in the event normal communications protocols are diminished or not available. Emergency Operations and Emergency Management (EO-EM) monitors the SWANS frequency during normal working hours. The Central Alarm Station (CAS) monitors the frequency continuously.

WARNING

Do not use the SWANS Radio instead of calling 911. Always call 911 first if needed.

To Contact Emergency Operations and Support Center

[1] **TURN** up the volume.
[2] **DEPRESS** the Push-To-Talk button.
[3] **SPEAK** after the solid tone ends.
[4] **SAY**, "EOSC, EOSC, this is [*your name*] at TA-__, Building____."
[5] **LET GO** of the Push-To-Talk button to hear response.
[6] **IF** evacuation to an Assembly/Muster area is necessary,
THEN the Operations Center will take the SWANS radio.

Daily Monitoring with the SWANS Radio (Operations Center)

[1] **LEAVE** radio turned on and sitting in charger and on Channel 1.
[2] **ENSURE** the volume is turned up enough to hear radio traffic.
[3] **IF** you receive an alert tone (4 beeps, pause, 4 beeps, continuously)
THEN:
  [A] **PRESS** the Push-To-Talk button to stop the alert tone.
  [B] **TURN** the volume up.
  [C] **FOLLOW** the directions that are given on the radio.
  [D] **RELAY** message as applicable.
  [E] **IF** your building or organization is addressed directly,
  THEN respond immediately.
[4] **IF** you return to the office and hear an alert tone,
THEN:
  [A] **PRESS** the Push-To-Talk button to stop the alert tone.
  [B] **CONTACT** EOSC by radio or phone (7-6211).
  [C] **INFORM** EO-EM the alert tone was sounding on your radio, and they will relay the alert tone message.

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Radio Testing Instructions

Use of the Orange Panic Button

If the orange panic button located on the top of the radio is pushed, EOSC will try to call you on the radio. If there is no response, EOSC will try to call you on the phone. If there is still no response, the duty Emergency Manager will respond to your location.

Testing and Maintenance

[1] **PERFORM** a radio check once a week by calling EOSC and saying, "TA--- _____Facility to EOSC, radio check"

[2] **CALL** EOSC at 7-6211 if you have any problems with the radio. (A warbling tone may indicate the battery is failing)

[3] **IF** you are getting excessive static or poor reception,
THEN notify EOSC so a test can be run.

WARNING

Use the orange panic button for extreme emergency only.

Two-Way Radio Instructions

[1] **TURN** the radio on.

[2] **SWITCH** the radio to Channel 1.

[3] **PRESS** the button on the side of the radio to transmit.

[4] **ESTABLISH** contact with the Operations Center. Speak slowly and clearly.

[5] **IF** you do not receive an immediate response,
THEN remain calm and **REPEAT** steps [3] and [4].

[6] **WHEN** contact is established,
THEN transmit your name and location AND **WAIT** for the Operations Center to ask for additional information.

[7] **UPON** request from the Operations Center,
THEN transmit the names and condition of personnel at your location. Only relevant and essential information should be given.

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WCRRF TA-50-69 EMERGENCY CONTACT LIST

Organizations
Emergency Operations Support Services 7-6211
Engineering
Environmental
EWMO FOD
Fire/Ambulance
Fire Protection Engineer
Industrial Safety/Hygiene
Maintenance Manager
On-call list
Occupational Medicine Nurse's Station
Operations Manager
Radiation Protection
RP Supervisor
Security
Shift Operations Manager
Site Services Subcontractor (EnergySolutions)
Transportation
Utilities
Waste Coordinator
*Surrounding facilities contacts

* Identify surrounding facilities for performing notifications of an off-normal/emergency event

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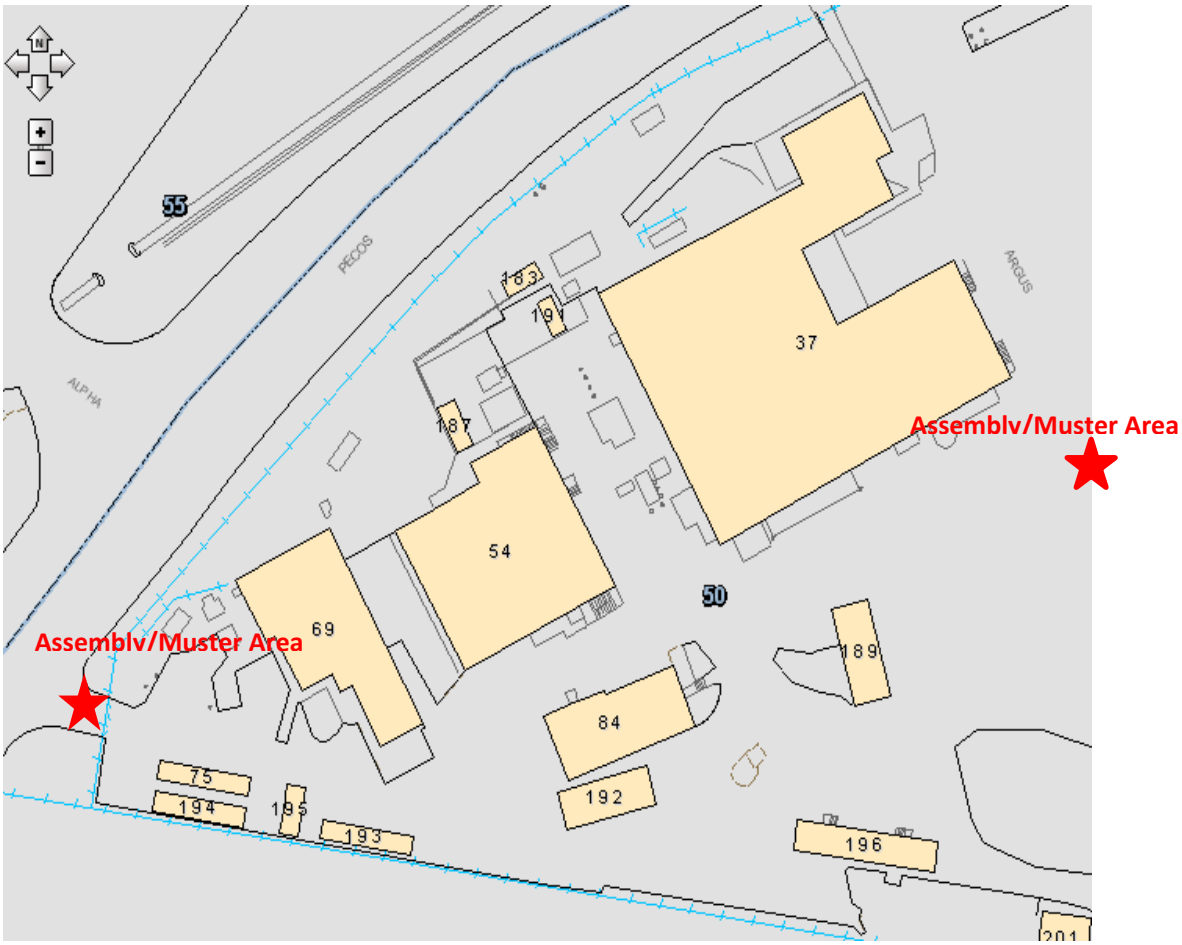
WCRRF ASSEMBLY/MUSTER AREA LOCATIONS



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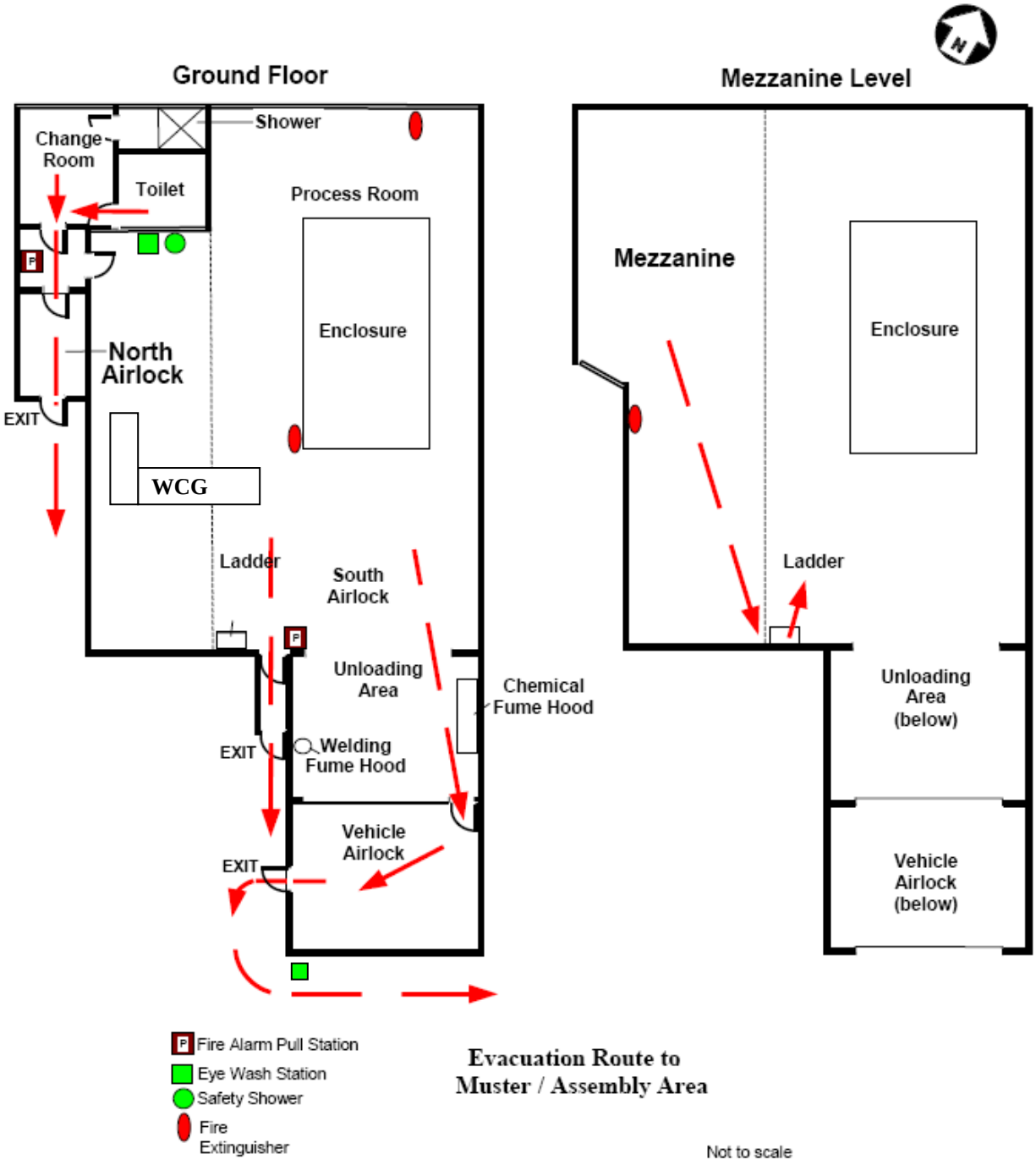

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TA-54 AND RANT EMERGENCY CONTACT LIST

Organizations
Emergency Operations Support Services 7-6211
Engineering
Environmental
EWMO FOD
Fire Protection Engineer
Fire/Ambulance
Industrial Safety/Hygiene
Maintenance Manager
On-call list
Occupational Medicine Nurse's Station
Operations Manager
Radiation Protection
RP Supervisor
Security
Shift Operations Manager
Shift Operations Supervisor
Transportation
Utilities
Waste Coordinator
LTP-SOS
HMLW
Site Services Contractor
Operations Center SOS
*Surrounding facilities contacts

* Identify surrounding facilities for performing notifications of an off-normal/emergency event

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TA-54 AND RANT EMERGENCY CONTACT LIST

Organizations
Emergency Operations Support Services 7-6211
Engineering
Environmental
EWMO FOD
Fire/Ambulance
Fire Protection Engineer
Industrial Safety/Hygiene
Maintenance Manager
On-call list
Occupational Medicine Nurse's Station
Operations Manager
Radiation Protection
RP Supervisor
Security
Shift Operations Manager
Shift Operations Supervisor
Transportation
Utilities
Waste Coordinator
*Surrounding facilities contacts

* Identify surrounding facilities for performing notifications of an off-normal/emergency event

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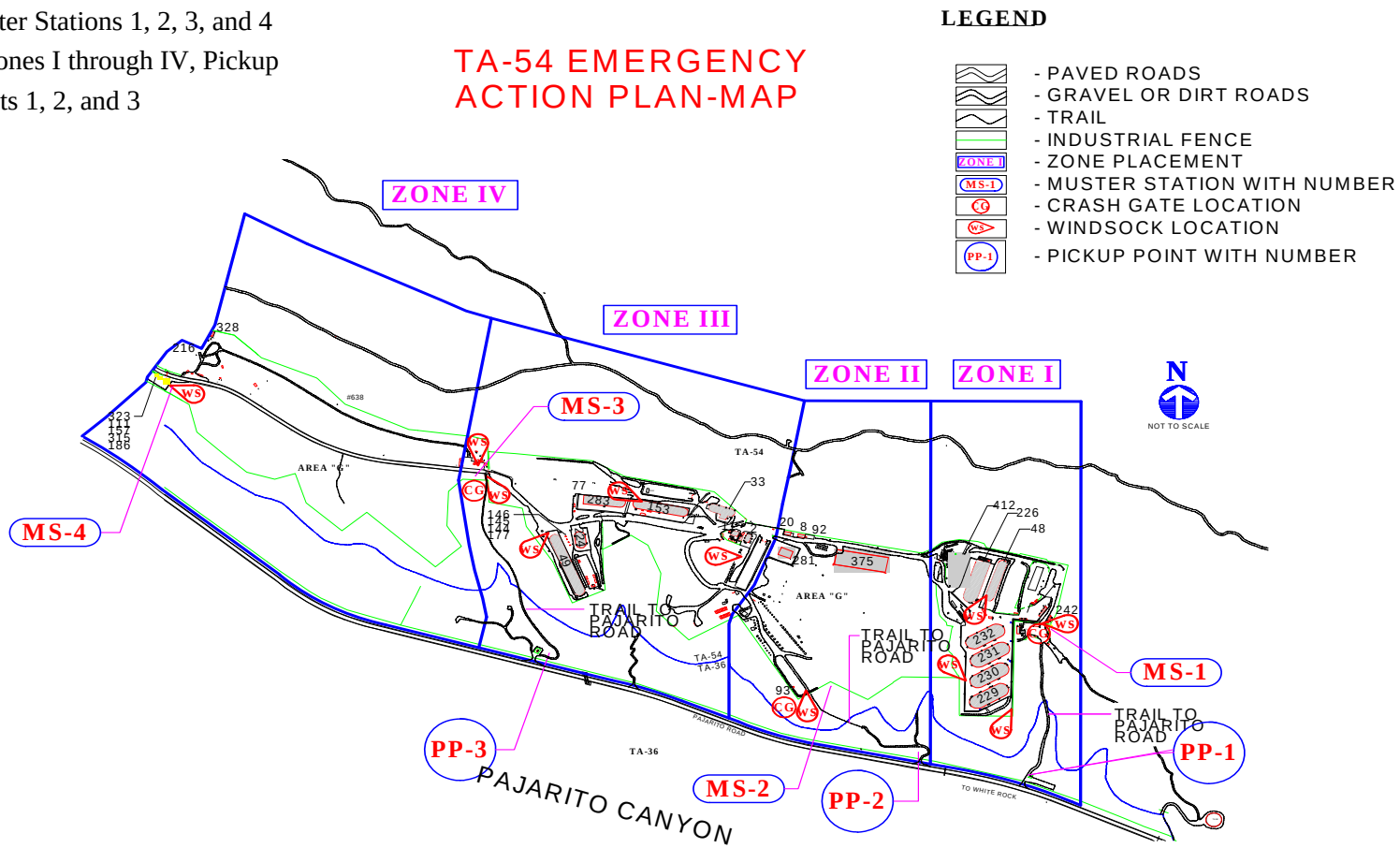
TA-54 ZONE BORDERS, PICKUP POINTS, AND ASSEMBLY/MUSTER AREA LOCATIONS

Muster Stations 1, 2, 3, and 4 in Zones I through IV, Pickup Points 1, 2, and 3



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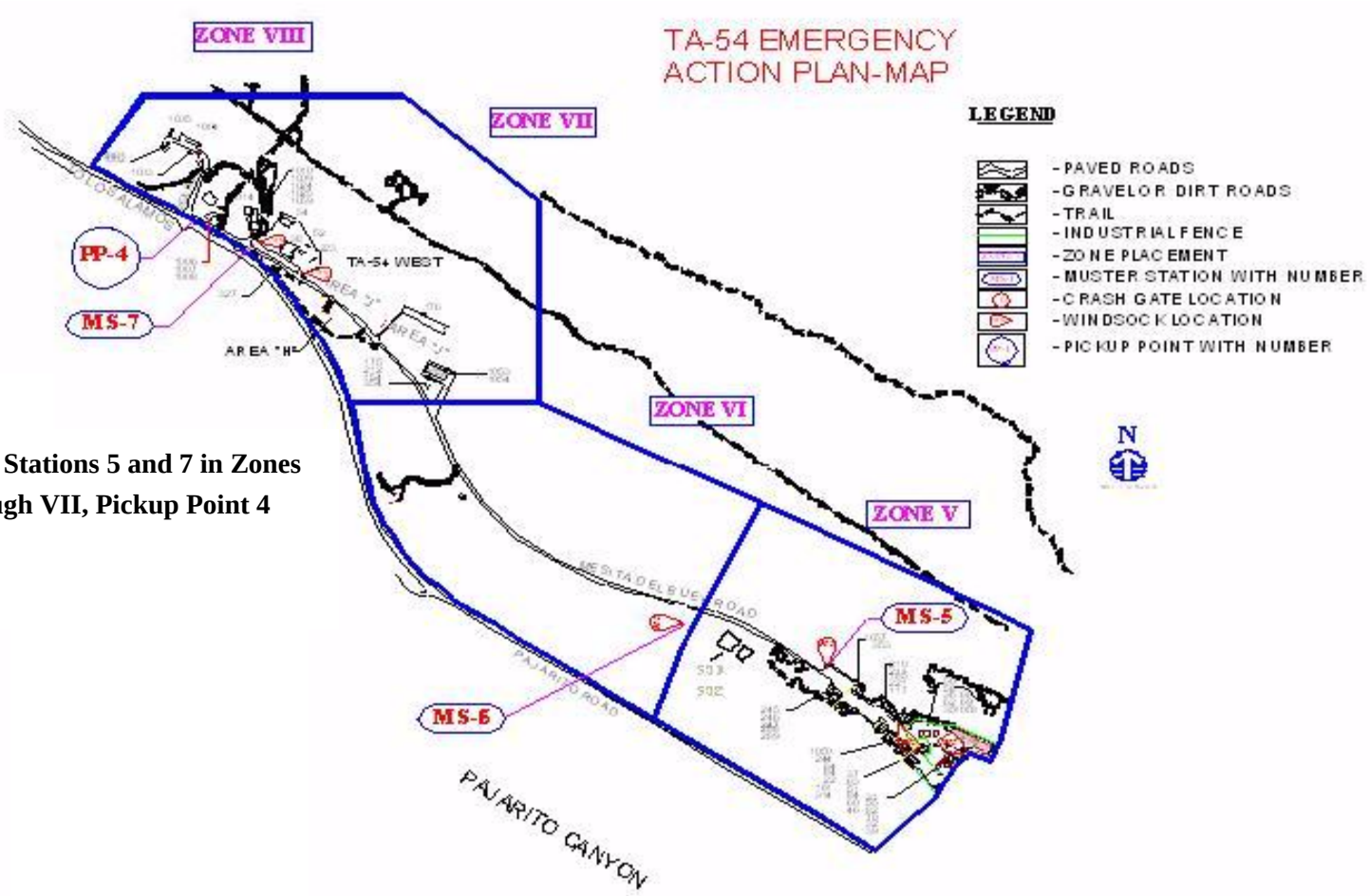

Muster Stations 5 and 7 in Zones V through VII, Pickup Point 4

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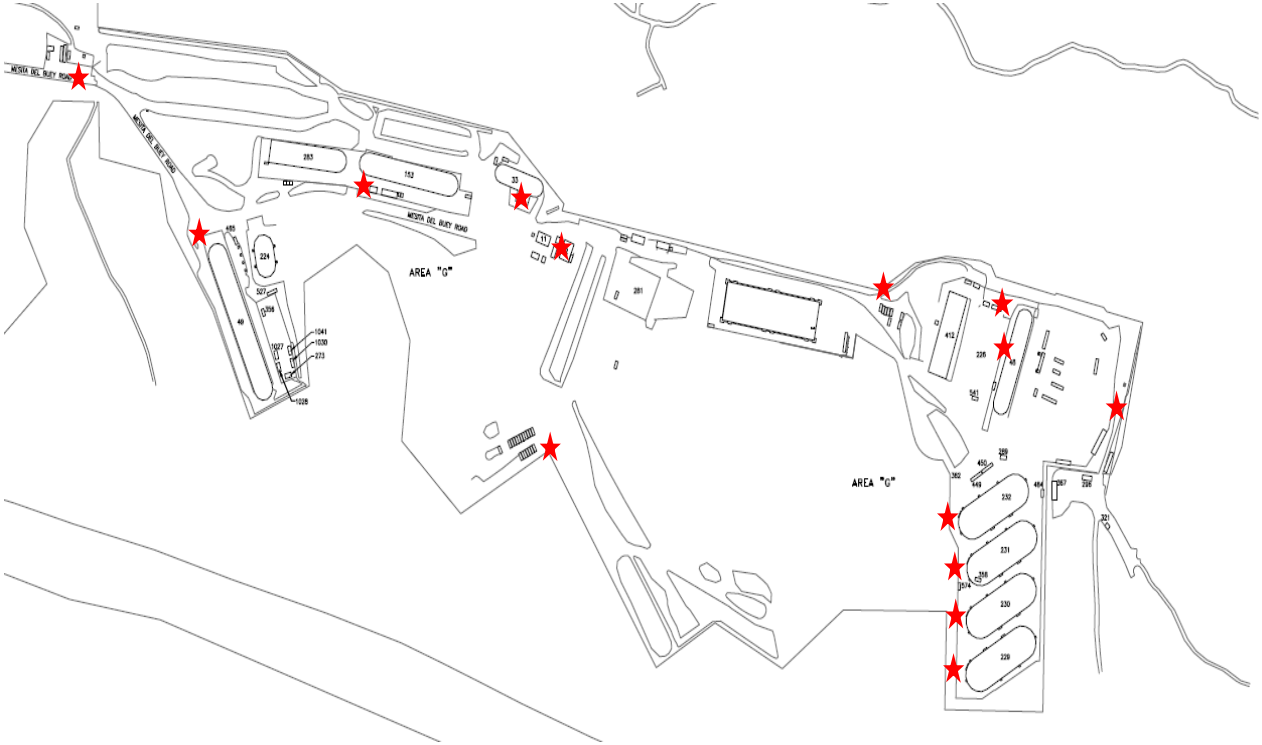
TA-54 AREA G EVACUATION ALARM BUTTON LOCATIONS



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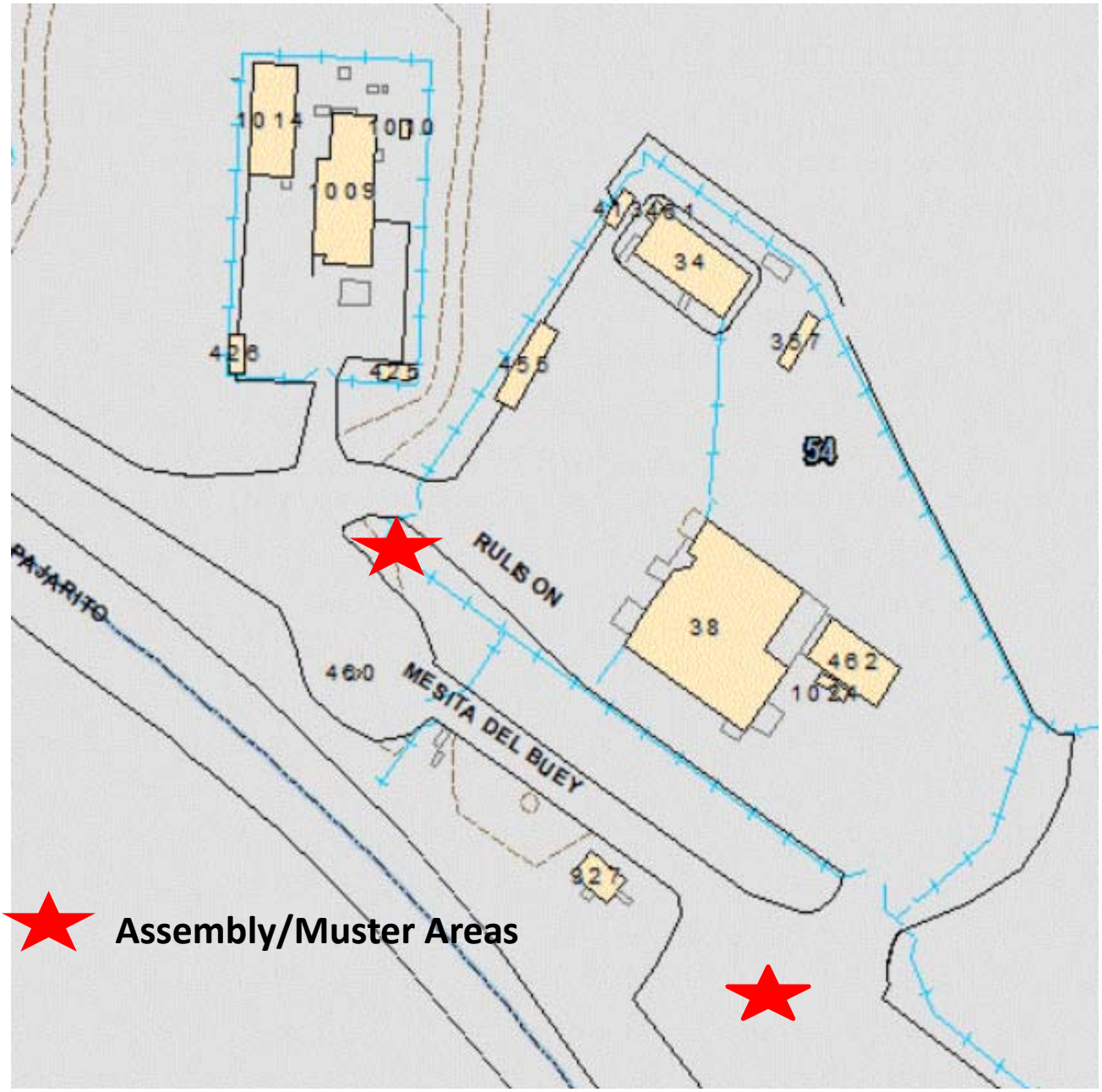
RANT ASSEMBLY/MUSTER AREA LOCATIONS



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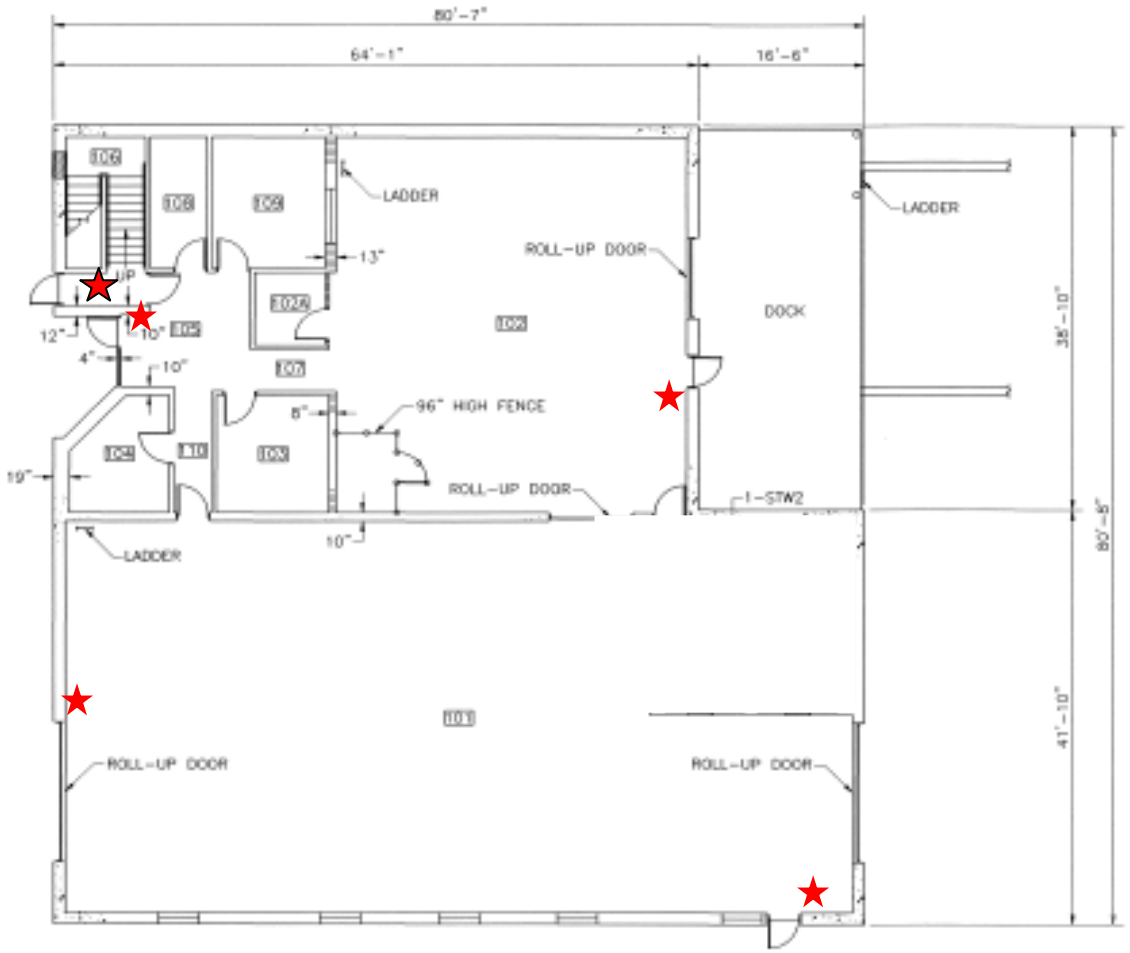
RANT EVACUATION ALARM BUTTON LOCATIONS



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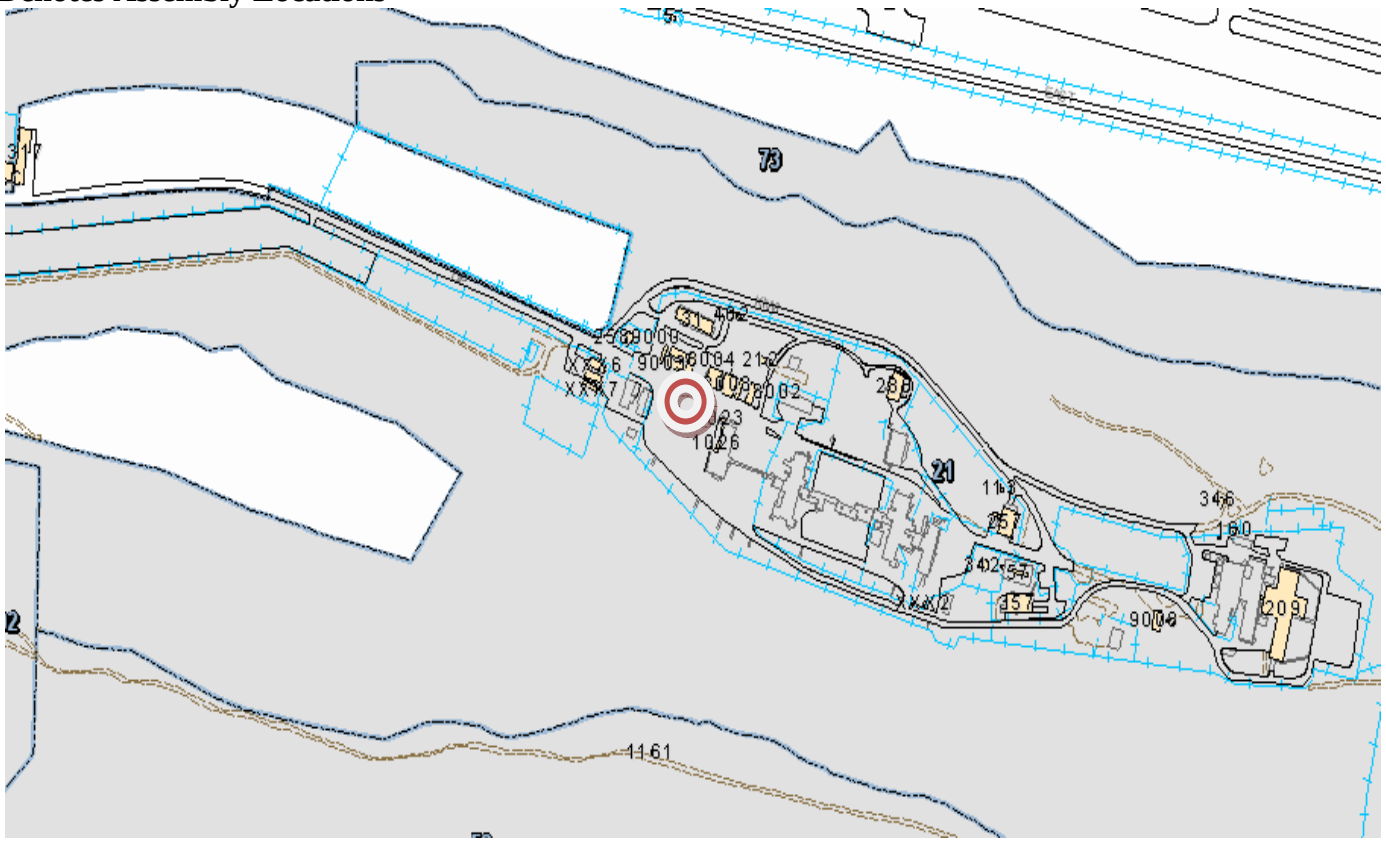
TA-21 ASSEMBLY AREA LOCATIONS

- **Denotes Assembly Locations**



Immediate Procedure Change (IPC) Cover		
Section 1 – Originator Request		
Document No.: EP-DIV-PLAN-20036	Revision No.: 0	IPC No.: 1
Title: EWMO Snow Removal Plan		
Description of need and requested action (Attach document mark-up and numbered additional sheets, if needed): Include in Section 4 the TSRs for Area G. (SAC 5.7.6 and LCO 3.3.1)		

Originator Name (print):	Organization:	Z#:	Date:
Jamison Klagmann	LTP	305087	11/22/13

Section 2 –Reviews

Discipline:	Name:	Signature:	Date:
Engineering	Julie Minton-Hughes	/s/ Julie Minton-Hughes	11/22/13
LTP-SSS OM	Gail Welsh	/s/ Gail Welsh	11/22/13

USQ/USI Number: ☒ N/A

Section 3– Final Approvals

FOD Concurrence:	Print Name and Title:	Z#:	Date:
N/A	N/A	N/A	N/A
☒ Permanent ☐ Limited Use	Effective Date: 11/22/2013 Expiration Date: N/A		
Comments:			
Derivative Classifier: ☒ Unclassified ☐ OUO ☐ UCNI ☐ Classified	Signature:	Z#: 245399	Date: 11/22/13
Responsible Line Manager Signature:	Print Name and Title: Andy Baumer, Deputy FOD	Z#: 234651	Date: 11/22/13

EWMO Snow Removal Plan

Effective Date: November 22, 2013

Hazard Class:	☒	Low	☐	Moderate	☐	High/Complex
Usage Mode:	☒	Reference	☐	UET	☐	Both UET and Reference

The Responsible Manager has determined that the following organizations' review/concurrence is required for the initial document and for major revisions a same type and level review is required. Review documentation is contained in the Document History File:

MSS-EWMFO	WCRRF SOM
LTP-SSS OM	IH
LTP-OCD OM	RP-1
LTP-DDP OM	QA
TA-54 SOM	Engineering

Responsible Manager, EWMO FOD

Steven M. Henry	/ 219172	/ /s/ Steven M. Henry	/ 2/13/12
Name (print)	Z#	Signature	Date

Classification Review: ☐ N/A ☒ Unclassified ☐ UCNI ☐ Classified _____

Chris Pilcher	/ 233242	/ /s/ Chris Pilcher	/ 2/9/12
Name (print)	Z#	Signature	Date

Working Copy / Information Only (circle one)

Initials / Date: _____ / _____

This document fully satisfies the requirements of P300, Integrated Work Management, in order to systematically describe the work activity, the associated hazards, and the controls that **MUST** be employed to mitigate the risks.

REVISION HISTORY

Document No./Revision No.	Issue Date	Action	Description
EP-DIV-PLAN-20036, R.0	February 14, 2012	New	
EP-DIV-PLAN-20036, R.0 IPC-1	November 22, 2013	IPC	Include in Section 4 the TSRs for Area G.

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1. PURPOSE

This plan describes the process for snow removal at Environmental and Waste Management Operations (EWMO)-supported facilities to ensure that snow is safely removed from roadways, parking areas, walkways, and areas identified by the applicable Shift Operations Manager (SOM) or Person-in-Charge (PIC).

2. SCOPE

This plan applies to snow removal operations at EWMO-supported facilities, which include the following:

- TA-50, Waste Characterization, Reduction, and Repacking Facility (WCRRF)
- TA-46, Buildings 46-120 and 46-326
- TA-54, Radioassay and Nondestructive Testing (RANT)
- TA-54, Administrative Areas and Areas G, J, and L

The Utilities and Institutional Facilities (UI) Directorate is primarily responsible for snow removal at LANL facilities in accordance with UI-PLAN-007, Los Alamos National Laboratory Snow and Ice Control Plan. UI Roads and Grounds (R&G) crews are dispatched by the UI R&G Operations Manager when weather conditions require snow and ice removal and are responsible for plowing roadways, parking lots, fire lanes, and sidewalks at LANL facilities.

The Maintenance and Site Services (MSS)–Environmental Waste Management Facility Operations (EWMFO) group provides additional snow removal operations at EWMO-supported facilities in accordance with facility-specific work orders.

Walkways and building entrances may be cleared of snow and/or treated with deicer by EWMO facility personnel, as necessary.

3. RESPONSIBILITIES

3.1 MSS-EWMFO Maintenance Manager

- Ensures that snow removal workers (e.g., teamsters and laborers) are current on all required training.
- Ensures that equipment and supplies are available.
- Ensures that equipment is inspected.

3.2 LTP Operations Manager

- Initiates this plan as necessary due to severe weather conditions.

3.3 Shift Operations Managers (SOM)

- Prioritizes EWMO-supported facilities for snow removal based on conditions, work priorities, and resources.
- Contacts the EWMO-supported facility PICs to initiate snow removal operations.
- Determines the activities that may be performed during snow conditions.

3.4 Persons-in-Charge (PICs)

- Notifies snow removal teams to initiate snow removal operations.
- Coordinates on-site snow removal operations.

4. PRECAUTIONS AND LIMITATIONS

Fuel and/or vehicle restrictions **SHALL** be followed during snow removal operations at WCRRF, RANT, and Area G:

- WCRRF
  ($) SAC 5.10.1.1, Vehicle Fuel Restrictions: Propane, gasoline, or diesel fueled vehicles shall not be used anywhere at the WCRRF when inventory is present. Exceptions: 1) Emergency vehicles in the case of any emergency. 2) Equipment with less than 5 gal. of fuel may be used for grounds maintenance and for snow and ice removal.

- RANT
  ($) SAC 5.7.3.B, Vehicle Access Control: The outdoor CONTAINER STORAGE AREA is protected by a combination of the Building TA-54-38 location, gates and/or bollards, fencing, and restrictions on vehicles allowed in the RANT SITE. Gates and/or bollards and fencing will control vehicle access into and out of the RANT SITE and will only allow electric forklifts, TRUPACT II tractors, Transportation Safety Documents (TSD) approved vehicles, Department of Public Safety (DPS) vehicles, the diesel jockey, and the MLU crane. Exceptions: (1) Emergency vehicles in the case of any emergency; (2) Equipment with less than 5 gal. of fuel may be used for grounds maintenance and for snow and ice removal; (3) Vehicles or equipment to support non-emergency, off-normal conditions addressed in LCO 3.3.

4. PREACUTIONS AND LIMITATIONS (continued)

IPC-1

- Area G

  ($) SAC 5.7.6: Vehicles with a combustible/flammable liquid inventory greater than 100 gal are required to follow an escort along a designated route. Due to the increased potential for vehicular accident, the vehicle escort **SHALL** ride along inside the snow removal vehicle. The escort must still meet the requirements dictated in EP-AREAG-FO-AP-1190, Access Control for TA-54 Areas G, L, J, and H, and the driver must still travel along designated routes.

  (S) LCO 3.3.1: Vehicles with greater than 100 gal of combustible/flammable liquid inventory **SHALL** not enter a Combustible Restrictive Area (CRA). Vehicles with less than or equal to 100 gal combustible/flammable liquid inventory may access a CRA in accordance with EP-AREAG-FO-AP-1097, TA-54 Area G Combustible/Flammable Liquid Control.

5. SNOW REMOVAL

5.1 Equipment and Supplies

MSS-EWMFO ensures that the following equipment is available for snow removal operations at EWMO-supported facilities, as required:

- Heavy equipment
- All-Terrain Vehicles (ATVs), snow blowers, and riding tractors
- Snow shovels
- Sand and/or deicer

MSS-EWMFO **SHALL** inspect and maintain snow removal equipment to ensure availability during snow events.

Workers' supervisors will provide stabilicers (or equivalent non-slip ice cleats) to laborers, nuclear operators, and waste handling technicians performing snow removal (shoveling paths/clearing doors).

5.2 Mobilization

Snow removal operations are based on weather observations and notifications that LANL snow removal teams are being mobilized.

The MSS-EWMFO Work Execution Manager deploys snow removal teams as required, prioritizing snow removal in accordance with the SOM.

5.2 Mobilization (continued)

When a snow event begins during normal working hours, the EWMO Facility Operations Director (EWMO-FOD), Maintenance Manager, Operations Managers, SOMs, and PICs will assess the event and mobilize snow crews as necessary.

At TA-54 Area G, the SOM will authorize MSS-EWMFO plows to enter Area G once the TA-54 Operations Center is staffed and Radiological Control Technicians are on duty. PICs will request MSS laborers, Nuclear Operators, and Waste Handling Technicians trained in snow removal to clear snow from dome doors and other areas as directed by the SOM.

The SOM will determine what activities may be performed in snowy conditions.

5.3 Priority

R&G crews follow a planned priority level for snow removal in accordance with UI-PLAN-007.

Snow removal priorities within each EWMO-supported facility **SHALL** be determined by the SOM depending on work priorities and resources and communicated to MSS.

6. RECORDS

None

7. REFERENCES

ABD-WFM-002, Technical Safety Requirements (TSRs) for Technical Area 54, Area G

ABD-WFM-006, Technical Safety Requirements (TSRs) for Waste Characterization, Reduction, and Repacking Facility (WCRRF)

ABD-WFM-008, Technical Safety Requirements (TSRs) for the Radioassay and Nondestructive Testing (RANT) Site

EP-AREAG-FO-AP-1097, TA-54 Area G Combustible/Flammable Liquid Control

EP-AREAG-FO-AP-1190, Access Control for TA-54 Areas G, L, J, and H

UI-PLAN-007, Los Alamos National Laboratory Snow and Ice Control Plan

EP-DIV-PLAN-20191, R.2

Seasonal Facility Preservation Plan

Effective Date: 10-1-2015

The Responsible Manager has determined that the following organizations' review/concurrence is required for the initial document, and for major revisions a same type and level review is required. Review documentation is contained in the Document History File:

MSS-EWMFO Subject Matter Expert
EWMO-Operations Manager
Engineering Management
Quality Assurance
EWMO Shift Operations Manager

Responsible Manager, MSS-EWMFO

Glenn A. VanDerpoel	/109152	/ /s/ Glenn VanDerpoel	/10-1-2015
Name (print)	Z#	Signature	Date

Classification Review: ☐ N/A ☒ Unclassified ☐ UCNI ☐ Classified _____

Teri Tingey	/200975	//s/ Teri Tingey	/9-30-2015
Name (print)	Z#	Signature	Date

REVISION HISTORY

A comprehensive log of changes made to this procedure, including superseded documents and complete revision descriptions, is accessible through the Electronic Document Management System (EDMS). The following log is abridged to one page and includes only the latest revisions.

Document Number	Issue Date	Action	Description
EP-DIV-PLAN-0101, R.2	May 24, 2013	Major Revision	Updated building/structure lists in Attachments B, C, D, E, and F. Added Monday – Sunday column heads in Attachment C.
EP-DIV-PLAN-20191, R.0	November 26, 2013	Major Revision	New document number. This revision supersedes EP-DIV-PLAN-0101, R.2. Updated Sections 2, 4.2, 5.1, 5.5, 6.2, 7, and 8. Added new Section 6.1 to ensure current version of plan is available and that an RWP is issued and inspectors are briefed to the current version, as required. Removed lightning protection system inspections throughout (e.g., deleted Sections 5.6, 6.5, and Attachment F); LPS inspections are performed in accordance with facility-specific procedures. Made editorial changes. Added WO/FSR column to Attachment A. Updated building/structure lists and inspections in Attachments B, C, D, and E. Added deficiency instructions and FOD/designee signature line in Attachments B–G. Revision bars were not used to indicate changes in the attachments for ease of field use for inspectors.
EP-DIV-PLAN-20191, R.1	August 11, 2014	Major Revision	Revise plan to add Nuclear Environmental Sites (NES) to scope in accordance with PFITS issue 2014-643. Updated building list in attachments as needed. Added inspection of nitrogen pressure for applicable fire suppression systems in Appendix C (daily cold weather). Made editorial changes as needed.
EP-DIV-PLAN-20191, R.2	October 1, 2015	Major Revision	Revise plan to incorporate updates to attachments, and add additional lines for Maintenance Coordinator sign off. Made editorial changes as needed.

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1. PURPOSE

The purpose of this Seasonal Facility Preservation Plan (SFPP) is to prevent damage that might result from cold/freezing weather, extreme hot/dry weather, high winds, flooding, and wildfires to buildings, equipment, and laboratory resources maintained by Environmental and Waste Management Operations (EWMO) at Los Alamos National Laboratory (LANL).

2. SCOPE

An SFPP checklist shall be completed for each facility using a graded approach (see attachments for specific buildings). This Plan details the actions and requirements to be imposed on each facility to ensure protection of the equipment/facility from cold/freezing weather, extreme hot/dry weather, high winds, flooding, and wildfires. This Plan ensures that, in all cases, the actions and requirements imposed to provide cold/freezing weather, extreme hot/dry weather, high winds, flooding, and wildfires protection, comply with the facility configuration management procedures and are reviewed by facility operations and safety personnel to ensure that the facility is maintained in a safe condition to protect the health and safety of the public.

This Plan has been developed in accordance with AP-MNT-002, Seasonal Facility Preservation, which provides the requirements and the process for the development and implementation of seasonal facility preservation plans for LANL facilities to ensure continued safe facility operations.

AP-MNT-002 is applicable to all LANL facilities and Structures, Systems and Components (SSC) subject to adverse climatic influences, and provides direction for the development of seasonal facility preservation plans addressing severe weather and environmental conditions.

Nuclear facilities managed by EWMO under this plan include the Waste Characterization, Reduction, and Repackaging Facility (WCRRF), Technical Area (TA) 54 Area G, Radioassay and Nondestructive Testing (RANT) facility, and Nuclear Environmental Sites (NES).

Notably, the NES do not have building structures that require specific action to protect against winterization/freeze protection, lightning, extreme hot/dry weather, or defensible space. Each NES has an Inventory Isolation System (IIS) consisting of overburden, which is a Safety-Significant (SS) Design Feature (DF) that protects the buried waste inventory from accidents (i.e., external forces such as natural phenomena or inadvertent intrusions). As an SS DF, the IIS has an associated in-service inspection (ISI) requirement that ensures that degradation, damage, and other issues do not prevent the IIS from performing its safety function.

2. SCOPE (continued)

The inspections are performed in accordance with NES-DOP-1001, NES In-Service Inspections, and include the following:

- Event-driven field inspections in response to non-routine natural phenomena, such as heavy rains, that have the potential to degrade the IIS
- Activity-driven field inspections in response to activities, such as drilling and sampling, that have the potential to degrade the IIS
- Schedule-driven field inspections that routinely monitor the IIS

Performance of NES-DOP-1001 fulfills the requirements of AP-MNT-002 to the extent it can be applied to the NES. As a result, no record is generated from this plan (EP-DIV-PLAN-20191) for the NES.

Annual lightning protection system inspections are not included in this plan. LPS inspections are performed for EWMO-supported facilities through facility-specific procedures (e.g., EP-RANT-FO-DOP-0508, RANT Lightning Protection System Visual/Continuity Inspection; and EP-WCRR-FO-DOP-0403, WCRRF Lightning Protection System Visual/Continuity Inspection).

At a minimum every Maintenance Coordinator (MC) or qualified inspector shall ensure that the Maintenance Requirements in Section 6.2 of the Operations and Maintenance (O&M) Criterion 401, Freeze Protection, and the requirements listed in Section 6 of this plan are followed for facilities within their areas of responsibility. Any additional requirements for specific facilities are found in the attachments.

This Plan should be reviewed and revised twice yearly prior to the winter and summer seasons, or on an as-needed basis.

3. REFERENCES

The following documents were either used or referenced in the development of this Plan as designated by Maintenance Manager (MM).

- AP-MNT-002, Seasonal Facility Preservation
- Department of Energy (DOE) Order 430.1B, Real Property Asset Management
- DOE Order 433.1A, Maintenance Management Program for DOE Nuclear Facilities
- DOE G 433.1-1 4.18.3.2, Cold Weather Preparations
- EP-DIR-AP-10003, Records Management Procedure For ADEP Employees
- NES-DOP-1001, NES In-Service Inspections
- O&M Criterion 401, Freeze Protection

4. DEFINITIONS AND ACRONYMS

4.1 Definitions

NOTE *Terms identified support LANL terminology and/or discipline and craft recognized terminology, which are specific to this Plan.*

Drip Leg: A section of pipe that gathers steam-condensate, dirt, and corrosion products in a steam line and allows the solids to separate to the bottom of the section of pipe so they will not clog the strainers and steam traps.

Facility: A building, an area within a building, or a group of buildings that are under the responsibility of a facility manager.

Freeze Stat: Temperature sensing device placed near coil or heating surface to close dampers and/or shut off supply fan to prevent coils from freezing.

4.1 Definitions (continued)

Structure, System, and Component (SSC): Structure is an element or a collection of elements that provides support or enclosure such as a building, freestanding tank, basin, dike, or stack. System is a collection of components. Component is an item of equipment such as a pump, valve, or relay, or an element of a larger array such as an assembly to perform a function such as piping, cable trays, c`onduits, or heating, ventilation, and air conditioning length of pipe, elbow, or reducer.

Vacuum Breaker: In plumbing, a device to prevent backflow (back siphonage) by means of an opening through which air may be drawn to relieve negative pressure (vacuum). Vacuum breakers are utilized in steam systems to prevent condensing steam from creating a vacuum, thus allowing the condensate to drain from the heating coil by gravity, therefore preventing the condensate from freezing (assuming that the system is correctly configured).

4.2 Acronyms

NOTE *Acronyms identified support LANL terminology and/or discipline and craft established acronyms/terminology.*

CM	Corrective Maintenance
DOE	Department of Energy
EWMO	Environmental and Waste Management Operations
F	Fahrenheit
FOD-5	Facility Operations Director 5
LANL	Los Alamos National Laboratory
MC	Maintenance Coordinator
MM	Maintenance Manager
O&M	Operations and Maintenance
PM	Preventive Maintenance
PMI	Preventive Maintenance Instruction
POC	Point of Contact
SE	System Engineer
SFPP	Seasonal Facility Preservation Plan
SSC	Structures, Systems, and Components
WO	Work Order

5. RESPONSIBILITIES

5.1 Maintenance Manager (MM)

- Develops and implements the SFPP at EWMO-supported facilities.
- Ensures that appropriate personnel are briefed on the implementation and use of the SFPP.
- Ensures appropriate personnel receive email notifications of SFPP roles and responsibilities.
- Determines schedule for revision and review of the SFPP, which should be twice yearly prior to the winter and summer seasons, or on an as-needed basis.
- Evaluates any adverse trends provided by the system engineers and/or maintenance coordinators and implement SFPP corrective actions.
- Approves seasonal checklists and submit to Records Management in accordance with EP-DIR-AP-10003, Records Management Procedure For ADEP Employees.
- Coordinates implementation of SFPP for EWMO-supported facilities.
- Ensures that new and pre-existing seasonal preservation Corrective Maintenance (CM) and Preventive Maintenance (PM) are completed by required dates.

5.2 System Engineer (SE)

- Performs walkdown of Structures, Systems, and Components (SSCs) for seasonal preservation needs and provide feedback to the MM for the development/update of the SFPP. Use Seasonal Preservation Plan Considerations from Section 3.1, and AP-341-510, Walkdown and Data Gathering, as aides when performing the walkdowns. Document the results of the walkdowns and provide to the MM for the development of the SFPP.
- Designates SSCs that require operations and a safety review prior to implementation of seasonal protection actions, particularly those that require restricting or cutoff of vital safety systems (VSS) coolant.

5.2 System Engineer (SE) (continued)

- Review work orders (WOs), work requests, and issues related to seasonal preservation needs. Include deficiencies that have been previously corrected and open items.
- Evaluates new and in-process project to identify seasonal preservation issues.
- Supports Work Control Planners with the planning of PM and CM WOs needed to support seasonal facility preservation.
- Verifies acceptable results for post-modification/maintenance testing, as required.

5.3 Maintenance Coordinator (MC)

- Implements SFPP for assigned buildings.
- Develops Corrective Maintenance WOs needed to support the SFPP.
- Notifies MM and PM Coordinator on seasonal preservation PMs for equipment requiring additional seasonal protection, as identified by SEs.
- Ensures that seasonal protection WOs are properly coded against equipment numbers.
- Reports seasonal protection deficiencies to MM.
- Signs and dates seasonal checklists including applicable CM and/or PM closeouts. Provide to MM for signatures and concurrence.
- Obtains 5-day weather forecast at the LANL “Weather Machine” (weather.lanl.gov) at the start of the weekly shift. Review the forecast, paying particular attention to forecasted low temperatures, wind speeds, and possibility of rain/snow.
- Obtains Fire Danger Rating from “Inside Los Alamos National Laboratory” website (int.lanl.gov) at the start of the weekly shift. Evaluate weather forecasts and Fire Danger Rating and provide a determination for the week to the Maintenance Point of Contact.
- Notifies MM and initiate response to any increased threat (cold/freezing, extreme heat, fire, high winds, etc.).

5.3 Maintenance Coordinator (MC) (continued)

- Trend issues derived from reviews and walkdowns per AP-MNT-007, Measurement, Analysis & Reporting of Maintenance Performance, and forward adverse trends to the Facility Operations Director for EWMO (FOD-5) and the MM for corrective actions.

5.4 Maintenance Point of Contact (POC) and On-Call POC (after hours)

- Responds to off-normal conditions related to seasonal issues in facilities.
- Addresses after hours conditions related to seasonal issues in facilities.
- Maintains up-to-date On-Call list with contact information (list provided by FOD).

5.5 Qualified Inspectors

- Performs annual facility checklists/inspections in support of the SFPP. Initial and date for completed areas as inspections progress.
- Performs annual cold weather inspections and complete a list of deficiencies by October 31.
- Performs daily cold weather checklists/inspections when the actual low temperature is 30°F or less as listed at TA-54 weather station. Initial and date for completed areas as inspections progress.
- Sign and date seasonal checklists upon completion of inspections and provide to MC or MM, as required by checklist.
- Records SFPP deficiencies and contact the MC.

5.6 Work Provider

- Performs seasonal preservation work safely in accordance with the approved Work Package.

6. SEASONAL FACILITY PRESERVATION REQUIREMENTS

The following requirements comprise the core considerations that should be evaluated when developing an SFPP, as described in Attachment A of AP-MNT-002, Seasonal Facility Preservation. The individual requirements in this list are not to be considered all-inclusive, or applicable to every facility. Due to the large number of specialized buildings under EWMO authority, there may be other items that must be evaluated for specific facility plans. There may also be requirements that do not apply to each facility (i.e., heating, cooling, and fire suppression systems vary from building to building). For facility specific responsibilities and applicable Preventive Maintenance Instructions (PMIs), consult the various EWMO Seasonal Facility Preservation Checklists (Attachments B-G).

Section 6.1, Planning and Coordination, **SHALL** be performed before any inspections are performed.

6.1 Planning and Coordination

- Ensure that the current revision of this plan is available for use.
- Ensure that a Radiological Work Permit (RWP) for the activity has been issued and that inspectors have been briefed to the current version, as required.

6.2 Cold Weather Considerations

(30°F or less as listed at TA-54 weather station)

NOTE *Refer to Attachments B and C for facility specific responsibilities concerning cold weather. The annual checklists will be completed no later than October 31 of each year. The daily checklists will be completed each day the actual low temperature is 30°F or less as listed at TA-54 weather station.*

- Ensure air intakes, windows, doors, and other access ways that could provide abnormal inflows of cold air are secured.
- Perform a general inspection on wet pipe sprinklers, visually inspect ceiling tiles for water damage, and investigate potential water leaks.

6.2 Cold Weather Considerations (continued)

- Inspect outside storage pads and unheated storage areas to ensure that there are no materials susceptible to freeze damage. Materials susceptible to freeze damage need to be moved to heated areas. Contact the appropriate personnel to relocate the equipment or materials. Contact the MC and MM if a work order is necessary.

- Heating System Considerations
  - Ensure that heating system PMs are completed, verify the checklists for any repairs, and notify the MC to initiate a work order for repairs.
  - Ensure that facility boiler inspections and PMs are completed prior to cold weather. Verify any deficiencies and contact the MC to initiate a work order for repairs.
  - Ensure that heating system power is on and the heating systems have been turned on and properly functioning. Prior to cold weather, verify the electrical wall heating units in fire riser rooms and bathrooms are turned on.
  - Identify areas where portable heating may be required and obtain portable heating units through the MM.
  - Obtain, inspect, test, and stage portable auxiliary heaters for emergency/unplanned use and have identified sources to obtain more, if needed.
  - Train personnel in the safe use of portable heaters.

- Ensure that the main water supply cutoffs for each facility are identified, tested, and readily accessible to emergency personnel responding to a freeze/thaw incident.

- Ensure that employees are aware of the need to identify and report any suspected problem with heating or other cold weather protection equipment such as un-insulated piping, inoperable/isolated steam tracing, and electrical trace heaters inoperable or turned off, broken windows, or holes in exterior walls.

- Fire Suppression System Considerations
  - Monitor the conditions in fire protection sprinkler equipment rooms to ensure a temperature of above 40°F is maintained.
  - Verify the Drum Drip PMs have been completed as scheduled. The Drum Drip PMs are in 54-33, 54-215, 54-230, 54-231, 54-375 and 54-412.
  - Inspect dry-pipe sprinkler systems that need to have the proper air pressure checked, if applicable.

6.2 Cold Weather Considerations (continued)

- Implementing Snow and Ice Removal Activities
  - Ensure that roof drains, scuppers, canals, gutters and downspouts are free of obstructions.
  - Address snow and ice buildup at each entrance and exit door, overhanging ice from roofs, doorways, etc., water on floors from leaks of doors and windows, or other openings left open.
  - Remove any obstructions, such as lumber, barrels, or miscellaneous storage in the yards that can hinder snowplow operation.
  - Identify locations of sand barrels filled with dry sand or snowmelt for applying to walkways.

- Ensure that heat sources such as heat tape or portable heaters, are installed as needed in areas susceptible to freezing conditions.

- **Hazardous Material Concerns**
  - Ensure that containers used for hazardous or toxic materials are properly stored. Inspect containers for deterioration prior to handling.
  - Ensure that liquids are not permitted to remain in unheated process lines during periods when production has stopped. All lines should be drained and purged to prevent future line breakage due to freezing temperatures.
  - Ensure that piping and valves (check valves and dump valves) are properly insulated.

NOTE *The minimum maintenance requirements in Section 6.2 of the O&M Criterion 401 are addressed under the facility's Computerized Maintenance Management System program.*

6.3 Extreme Cold Weather Considerations

(5°F or less as listed at TA-54 weather station)

NOTE *Refer to Attachment C for facility specific responsibilities concerning extreme cold weather.*

- Increase the frequency of inspections, usually 2 times per day, of areas susceptible to freeze damage.
- Perform walkdowns of components inside heated buildings that are located in isolated/out of the way areas, such as attics, closets and close to exterior walls.
- Maintain extra heating for systems susceptible to freezing, particularly around fire sprinkler piping.
- Identify locations of sand barrels filled with dry sand or snowmelt for applying to walkways.
- Inspect, test, and stage portable auxiliary heaters. Ensure that personnel have been briefed in the safe use of portable heaters.
- Maintain extra heat for sprinkler piping particularly at night.
- Monitor infrequently visited areas and spaces where sprinkler piping is located to ensure that drafts or air leaks are minimized.
- Maintain call-in list(s) for maintenance personnel.
- Maintain when necessary a small amount of water flow to sink faucets when the lines are susceptible to freezing.
- Ensure that adequate cold weather clothing, tools, and equipment are available during inspections for FOD-5 facilities; contact the MM for approvals.

6.4 Extreme Hot/Dry Weather Considerations

(Greater than 91°F in the shade, as listed at TA-54 weather station)

NOTE *Refer to Attachment D for facility specific responsibilities concerning extreme hot/dry weather.*

- Ensure that cooling systems are cleaned, serviced, and functionally tested prior to warmer summer temperatures.
- Evaluate all storage locations of materials susceptible to evaporation and possible explosion due to direct sunlight or extreme heat.
- Coordinate for a safe shutdown of equipment vulnerable to extreme hot/dry weather with Operations Management.
- Coordinate with Operations Management concerning possible restrictions of certain types of activities due to extreme heat/humidity.

6.5 Wildfire Considerations

NOTE *Refer to Attachment E for facility specific responsibilities concerning wildfires.*

- Where appropriate, secure HVAC and other vulnerable equipment systems to isolate SSCs from soot and smoke damage.
- Ensure safe shutdown of vulnerable equipment.
- Evacuate Laboratory and local areas as appropriate.
- Construct/increase firebreaks around the facility.
- Conduct combustible loading and weed/vegetation control inspections.
- Restrict operations that involve heat (welding, burning, sparks, etc.).
- Restrict fire hazards (smoking, etc.).
- Ensure that ample supplies of portable fire extinguishers are available.
- Ensure that all exits are kept clear.

6.6 Flooding Considerations

NOTE *Refer to Attachment F for facility specific responsibilities concerning flooding.*

- Ensure that storm drains and other drainage paths are free from obstructions.
- Ensure that doors and windows are closed.
- Ensure that water-vulnerable items are raised above the expected water line.
- Ensure that sandbags and dikes are used where necessary.
- Ensure that vehicles are moved to higher ground.

6.7 High Wind Considerations

(Sustained wind speeds greater than 25 mph)

NOTE *Refer to Attachment G for facility specific responsibilities concerning high winds. Limit of 25 mph is derived from DOE-STD-1090-2004, Hoisting and Rigging, which sets this limit for unrestricted operation of mobile cranes. Operations throughout EWMO-supported facilities periodically require cranes and/or forklifts; therefore, this value was determined to be the operational limit for such activities.*

- Safe shutdown of vulnerable equipment.
- Emergency evacuation and sheltering policies.
- Identifying emergency evacuation routes and ensuring that personnel are familiar with them.
- Securing outside materials susceptible to becoming missiles. Pay particular attention to job sites, staging and laydown areas.

7. PLAN SPECIFIC EQUIPMENT (continued)

Extreme Hot/Dry Weather Equipment		
Equipment ID	Location	Description
Air conditioning units	All EWMO-supported facilities	All facility air conditioning units shall be cleaned, serviced, and functionally tested per PMI 40-40-001 annually.
Window-mounted air conditioning units	All EWMO-supported facilities	All window-mounted air conditioning units shall be functionally tested annually. Any issues shall be reported to the appropriate Maintenance Coordinator.
Smoking waste receptacles	All EWMO-supported facilities	Smoking specific waste receptacles shall be staged in designated smoking areas.
Dust control measures (water truck)	TA-54 Area G	Dust control equipment (water truck) shall be maintained and kept available for immediate use upon the observation of blowing dust.

7. PLAN SPECIFIC EQUIPMENT (continued)

Wildfire Prevention Equipment		
Equipment ID	Location	Description
Fire protection water hydrant systems	All EWMO-supported facilities	Hydrants in close proximity to EWMO structures. Ownership and preventive maintenance is by LANL Utilities.

Flooding Equipment		
Equipment ID	Location	Description
Gutters/storm drains	All EWMO-supported facilities	All gutters and storm drains shall be cleared of debris annually.
Silt fences/berms	TA-54, Area G	All silt fences and earthen berms shall be inspected and repaired annually.

High Wind Equipment		
Equipment ID	Location	Description
Dust control measures (water truck)	TA-54, Area G	Dust control equipment (water truck) shall be maintained and kept available for immediate use upon the observation of blowing dust.

8. PLAN STEPS

The following documents are required reading in the performance of this Plan.

- O&M Criterion 401, Freeze Protection
- AP-MNT-002, Integrated Facility Management Program – Seasonal Facility Preservation

This Plan is to be used for identifying required preventive maintenance and corrective maintenance to ensure continued safe facility operations. Inspections and self-assessments of cold/freezing weather, extreme hot/dry weather, high winds, flooding, lightning and wildfires protection programs shall be appropriately scheduled to ensure correction of deficiencies and preparation of other compensatory measures to protect the facilities prior to the beginning of each seasonal weather condition. Due to the difficulty of predicting high winds, flooding and lightning, these requirements will have to be scheduled when conditions apply. Requirements for wildfires only apply when a wildfire is burning.

Any deficiency identified during the performance of this plan will be recorded in the deficiency Log of Attachment A in this procedure. The deficiency will be identified by TA-Building-Room-Location and a brief description of the deficiency. If the deficiency is immediately resolved then a description of actions performed will be included in the Resolution field of the Deficiency Log. The date of the deficiency closeout will be recorded when all corrective actions for the deficiency have been completed.

NOTE *No checklist included in this plan will be completed or signed as completed until all deficiencies are sufficiently addressed and corrected to the satisfaction of this plan. All deficiencies identified during the performance of this procedure will be reported to the Operations Manager and Maintenance Manager.*

Any deficiency identified during the performance of this procedure that cannot be corrected immediately will be recorded in Attachment A. The proposed resolution will be identified by a brief description and will reference the applicable Footprints issue number, Work Order number, or any other official method for issue tracking used. All identified deficiencies will be prioritized, corrected as required, and tracked to closure.

9. RECORDS PROCESSING

Records generated in the course of performing this Plan must be maintained as follows and in accordance with the LANL Records Retention Schedule.

Record Identification	Record Type Determination	Protection/Storage Methods	Processing Instructions
Attachment A, Deficiency Log Attachment B, EWMO Cold Weather Annual Checklist Attachment C, EWMO Cold Weather Daily Checklist Attachment D, EWMO Extreme Hot/Dry Annual Checklist Attachment E, EWMO Wildfire Prevention Annual Checklist Attachment F, EWMO Flooding Annual Checklist Attachment G, EWMO High Winds Annual Checklist	QA Record	Personnel **SHALL** implement a reasonable level of protection to prevent loss and degradation. Records should be maintained in a one-hour fire rated metal file cabinet when not in use.	When the records are ready for final disposition, the records are transferred to Records Management in accordance with EP-DIR-AP-10003, Records Management Procedure For ADEP Employees.

ATTACHMENT A
Page 1 of 1

DEFICIENCY LOG

TA-Building-Room	Deficiency	Resolution	Close Out Date	WO # or FSR #

Comments: _____

_____

_____

_____

_____

Deficiency Identifier: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Maint. Coordinator: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Maint. Manager: _____ / _____ / _____ / _____
Print Name Signature Z # Date

FOD or Designee: _____ / _____ / _____ / _____
Print Name Signature Z # Date

ATTACHMENT C
Page 1 of 9

EWMO COLD WEATHER DAILY CHECKLIST

Any deficiency identified during the performance of this procedure that cannot be corrected immediately will be recorded in Attachment A. The proposed resolution will be identified by a brief description and will reference the applicable Footprints issue number, Work Order number, or any other official method for issue tracking used. All identified deficiencies will be prioritized, corrected as required, and tracked to closure.

The table below is a daily check for freeze protection. The table must be completed on a daily basis while operations are being performed at EWMO-supported facilities. At least 3 inspections per week must be performed during winter break. For the buildings listed in the table below, perform the following general inspection tasks:

- Inspect structures for potential sources of cold outside air, such as doors, windows, louvers, exterior door latches, automatic closure mechanisms and weather stripping.
- Inspect outside storage pads and unheated areas. Remove all items/materials vulnerable to freeze damage. Any hazards associated with winter, such as icy conditions, abundance of snow, cold air sources, heating problems, etc., should be immediately reported to FOD-5 personnel.

The nitrogen supply associated with applicable Fire Suppression Systems (FSS) are inspected for the following buildings:

- **($)** TA-54-38 (RANT) – nitrogen pressure ≥ 500 psig (RANT AC 5.6.5, Fire Protection Program)[1]
- TA-54-33 – nitrogen pressure ≥ 500 psig
- TA-54-230 – nitrogen pressure ≥ 500 psig
- TA-54-231 – nitrogen pressure ≥ 500 psig
- TA-54-412 – nitrogen pressure ≥ 500 psig
- TA-54-557 – nitrogen pressure ≥ 500 psig

If the FSS nitrogen pressure is less than 500 psig, then notify the Maintenance Coordinator and the Shift Operations Manager to have the nitrogen supply bottle replaced.

The following Extreme Cold Considerations shall be implemented at the locations listed in the table below when the TA-54 weather station at the Los Alamos National Laboratory "Weather Machine" (weather.lanl.gov) reads 5ºF or below for the daily low temperature. It is also recommended that the MC review the weather forecast given at the Los Alamos National Laboratory "Weather Machine" (weather.lanl.gov). If the 5-day forecast predicts a low

[1] **($)** identifies steps that implement Safety Basis requirements. Steps containing **($)** may not be changed without Engineering approval to ensure the safety envelope is maintained.

ATTACHMENT C
Page 2 of 9

temperature of less than 10ºF, at any point across the 5-day forecast, the MC shall notify the on-call Maintenance POC and inspectors of an extreme cold threat. In addition to the standard daily checks, the following tasks should be performed during periods of anticipated and/or observed extreme cold (≤ 5ºF):

- Inspection frequency shall be increased from once daily, to twice daily on work days and once daily on non-work days.
- Inspectors shall draw a line in the boxes provided on the attachment to allow initials for two inspections daily, as needed.
- Sand/ice remover shall be staged in high traffic areas.
- Additional heating capacity shall be provided to systems vulnerable to freeze damage. Consult System Engineering to assist in identifying systems requiring additional heating.
- Ventilation intakes shall be kept clear of snow and ice buildup.

ATTACHMENT C
Page 3 of 9

	Day of Week / Date						
Buildings/Structures	Mon	Tue	Wed	Thu	Fri	Sat	Sun
	/ /	/ /	/ /	/ /	/ /	/ /	/ /
TA-54 Low Temp (ºF)							
Initial the box when the inspection has been performed satisfactorily for the day/date above.							
TA-46-120							
TA-46-326							
In 46-326-101D: Record fire riser room temperature (≥40°F)	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F

Comments: _____

Qualified Inspector: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Qualified Inspector: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Maint. Coordinator: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Maint. Coordinator: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Maint. Manager: _____ / _____ / _____ / _____
Print Name Signature Z # Date

FOD or Designee: _____ / _____ / _____ / _____
Print Name Signature Z # Date

ATTACHMENT C
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	Day of Week / Date						
Buildings/Structures	Mon	Tue	Wed	Thu	Fri	Sat	Sun
	/ /	/ /	/ /	/ /	/ /	/ /	/ /
TA-54 Low Temp (ºF)							
Initial the box when the inspection has been performed satisfactorily for the day/date above.							
TA-50-69							
In 50-69-102: Record fire riser room temperature (≥40°F)	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F
Heaters are operable as indicated by green light on east wall of Room 102							
TA-50-84							

Comments: _____

Qualified Inspector: _____ / _____ / _____
Print Name Signature Z # Date

Qualified Inspector: _____ / _____ / _____
Print Name Signature Z # Date

Maint. Coordinator: _____ / _____ / _____
Print Name Signature Z # Date

Maint. Coordinator: _____ / _____ / _____
Print Name Signature Z # Date

Maint. Manager: _____ / _____ / _____
Print Name Signature Z # Date

FOD or Designee: _____ / _____ / _____
Print Name Signature Z # Date

ATTACHMENT C
Page 5 of 9

	Day of Week / Date						
Buildings/Structures	Mon	Tue	Wed	Thu	Fri	Sat	Sun
	/ /	/ /	/ /	/ /	/ /	/ /	/ /
TA-54 Low Temp (ºF)							
Initial the box when the inspection has been performed satisfactorily for the day/date above. Checks may be waived if the low temperature is greater than 35ºF							
TA-54 West							
TA-54-38							
In 54-38-104: Record fire riser room temperature (≥40°F)	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F
($) Record FSS nitrogen bottle pressure (≥ 500 psig)* (RANT AC 5.6.5)	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig
TA-54-1009							
TA-54-1014							
Administration Area							
TA-54-37							
TA-54-60							
TA-54-245							
TA-54-246							

* If nitrogen bottle pressure is less than 500 psig, then notify the Maintenance Coordinator and the Shift Operations Manager to have the nitrogen supply bottle replaced.

ATTACHMENT C
Page 6 of 9

	Day of Week / Date						
Buildings/Structures	Mon	Tue	Wed	Thu	Fri	Sat	Sun
	/ /	/ /	/ /	/ /	/ /	/ /	/ /
TA-54 Low Temp (ºF)							
Administration Area (continued)							
TA-54-247							
TA-54-532							
TA-54-533							
TA-54-9500							
Area L							
TA-54-39							
TA-54-215							
Inside 54-215, west side white closet: Record fire riser room temperature (≥40°F)	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F
Record FSS nitrogen bottle pressure (≥ 500 psig)	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig
Area G							
TA-54-2							
TA-54-11							
TA-54-25							
Record room temperature (≥40°F)	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F

* If nitrogen bottle pressure is less than 500 psig, then notify the Maintenance Coordinator and the Shift Operations Manager to have the nitrogen supply bottle replaced.

ATTACHMENT C
Page 7 of 9

	Day of Week / Date						
Buildings/Structures	Mon	Tue	Wed	Thu	Fri	Sat	Sun
	/ /	/ /	/ /	/ /	/ /	/ /	/ /
TA-54 Low Temp (ºF)							
Area G (continued)							
TA-54-33							
Inside 54-33, southeast side white closet: Record fire riser room temperature (≥40°F)	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F
Record FSS nitrogen bottle pressure (≥ 500 psig)*	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig
TA-54-229							
Inside 54-229, north side white closet: Record fire riser room temperature (≥40°F)	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F
TA-54-230							
Inside 54-230, north side white closet: Record fire riser room temperature (≥40°F)	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F

* If nitrogen bottle pressure is less than 500 psig, then notify the Maintenance Coordinator and the Shift Operations Manager to have the nitrogen supply bottle replaced.

ATTACHMENT C
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Buildings/Structures	**Day of Week / Date**						
	Mon	Tue	Wed	Thu	Fri	Sat	Sun
	/ /	/ /	/ /	/ /	/ /	/ /	/ /
TA-54 Low Temp (°F)							
Area G (continued)							
TA-54-231							
Inside 54-231: Record fire riser room temperature (≥40°F)	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F
Record FSS nitrogen bottle pressure (≥ 500 psig)*	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig
TA-54-289							
Inside 54-289: Record fire riser room temperature (≥40°F)	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F
TA-54-315							
TA-54-367							
TA-54-412							
Record fire riser room temperature (≥40°F)	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F
Record FSS nitrogen bottle pressure (≥ 500 psig)*	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig
TA-54-557							
Record fire riser room temperature (≥40°F)	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F	____ °F
Record FSS nitrogen bottle pressure (≥ 500 psig)*	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig	_____ psig

* If nitrogen bottle pressure is less than 500 psig, then notify the Maintenance Coordinator and the Shift Operations Manager to have the nitrogen supply bottle replaced.

ATTACHMENT C
Page 9 of 9

Comments: _____

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_____

_____

_____

Qualified Inspector: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Qualified Inspector: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Qualified Inspector: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Qualified Inspector: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Maint. Coordinator: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Maint. Coordinator: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Maint. Manager: _____ / _____ / _____ / _____
Print Name Signature Z # Date

FOD or Designee: _____ / _____ / _____ / _____
Print Name Signature Z # Date

ATTACHMENT E
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TA-54

Buildings/Structures	Date	Initials	Comments
TA-54-33			
TA-54-37			
TA-54-38			
TA-54-39			
TA-54-48			
TA-54-49			
TA-54-51			
TA-54-60			
TA-54-153			
TA-54-215			
TA-54-224			
TA-54-229			
TA-54-230			
TA-54-231			
TA-54-232			
TA-54-245			
TA-54-246			
TA-54-247			
TA-54-283			
TA-54-289			
TA-54-295			
TA-54-315			
TA-54-324			
TA-54-325			
TA-54-367			

ATTACHMENT E
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TA-54

Buildings/Structures	Date	Initials	Comments
TA-54-371			
TA-54-372			
TA-54-375			
TA-54-412			
TA-54-532			
TA-54-533			
TA-54-557			
TA-54-1009			
TA-54-1014			
TA-54-9500			

Comments: _____

_____

_____

Qualified Inspector: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Qualified Inspector: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Qualified Inspector: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Maint. Coordinator: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Maint. Coordinator: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Maint. Manager: _____ / _____ / _____ / _____
Print Name Signature Z # Date

FOD or Designee: _____ / _____ / _____ / _____
Print Name Signature Z # Date

ATTACHMENT F
Page 1 of 2

EWMO FLOODING ANNUAL CHECKLIST

Any deficiency identified during the performance of this procedure that cannot be corrected immediately will be recorded in Attachment A. The proposed resolution will be identified by a brief description and will reference the applicable Footprints issue number, Work Order number, or any other official method for issue tracking used. All identified deficiencies will be prioritized, corrected as required, and tracked to closure.

The table below is an annual check for flooding prevention. The table must be completed on an annual basis, prior to June 1. Due to the topography around EWMO-supported facilities, flooding is not considered a viable threat. However, the tables below identify the minimum requirements for flood prevention.

TA-46

	Description	Date	Initials
1	Flooding Considerations:		
	• Clear all storm drains and other drainage paths (including building gutters) of obstructions.		
2	Tenants shall receive notification via email of the following:		
	• Any hazards associated with flooding and/or storm-water runoff should be immediately reported to the on-call Maintenance POC.		

TA-50

	Description	Date	Initials
1	Flooding Considerations:		
	• Clear all storm drains and other drainage paths (including building gutters) of obstructions.		
2	Tenants shall receive notification via email of the following:		
	• Any hazards associated with flooding and/or storm-water runoff should be immediately reported to the on-call Maintenance POC.		

TA-54

	Description	Date	Initials
1	Flooding Considerations:		
	• Clear all storm drains and other drainage paths (including building gutters) of obstructions.		
2	Tenants shall receive notification via email of the following:		
	• Any hazards associated with flooding and/or storm-water runoff should be immediately reported to the on-call Maintenance POC.		

ATTACHMENT F
Page 2 of 2

Comments: _____

Qualified Inspector: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Qualified Inspector: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Qualified Inspector: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Qualified Inspector: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Maint. Coordinator: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Maint. Coordinator: _____ / _____ / _____ / _____
Print Name Signature Z # Date

Maint. Manager: _____ / _____ / _____ / _____
Print Name Signature Z # Date

FOD or Designee: _____ / _____ / _____ / _____
Print Name Signature Z # Date

ATTACHMENT G
Page 1 of 3

EWMO HIGH WINDS ANNUAL CHECKLIST

Any deficiency identified during the performance of this procedure that cannot be corrected immediately will be recorded in Attachment A. The proposed resolution will be identified by a brief description and will reference the applicable Footprints issue number, Work Order number, or any other official method for issue tracking used. All identified deficiencies will be prioritized, corrected as required, and tracked to closure.

The table below is an annual check for prevention of damage to equipment/facilities due to high wind. The table must be completed on an annual basis, prior to May 1. Due to the topography and site characteristics of FOD-5 facilities, high wind is considered a considerable threat (specifically to TA-54, Area G). The tables below document the minimum requirements for minimizing the impact of high winds to operations at FOD-5 facilities.

TA-46

	Description	Date	Initials
1	High Wind Considerations:		
	• Secure outside materials susceptible to becoming missiles. Pay particular attention to job sites, staging areas, and laydown areas.		

TA-50

	Description	Date	Initials
1	High Wind Considerations:		
	• Secure outside materials susceptible to becoming missiles. Pay particular attention to job sites, staging areas, and laydown areas.		

TA-54

	Description	Date	Initials
1	High Wind Considerations:		
	• Secure outside materials susceptible to becoming missiles. Pay particular attention to job sites, staging areas, and laydown areas.		

ATTACHMENT G
Page 2 of 3

Additional Maintenance POC and Maintenance Coordinator Responsibilities:

The table below describes tasks that are the responsibility of the on-call Maintenance POC and Maintenance Coordinators. TA-54, Area G is vulnerable to high winds. Therefore, all personnel who serve as Maintenance POC or Maintenance Coordinators for TA-54 shall receive reminder/notifications of additional threats associated with high wind conditions.

	Description	Date	Initials
1	Maintenance POC and Maintenance Coordinators shall receive notification via email of the following:		
	• TA-54 Operations Center shall coordinate with the Maintenance Coordinator to initiate dust control in Area G immediately upon observation of blowing dust.		
	• TA-54 Operations Center shall monitor wind reports and forecasts for TA-54 from the Los Alamos National Laboratory "Weather Machine" (weather.lanl.gov) on a daily basis. Upon sustained wind speeds (not gusts) of 25 mph or greater, the TA-54 Operations Center shall determine which operations and activities may be affected, and provide guidance and protective actions as necessary at TA-54, Area G.		

Comments: _____

ATTACHMENT G
Page 3 of 3

Qualified Inspector:	_____	/ _____	/ _____	/ _____
	Print Name	Signature	Z #	Date
Qualified Inspector:	_____	/ _____	/ _____	/ _____
	Print Name	Signature	Z #	Date
Qualified Inspector:	_____	/ _____	/ _____	/ _____
	Print Name	Signature	Z #	Date
Qualified Inspector:	_____	/ _____	/ _____	/ _____
	Print Name	Signature	Z #	Date
Maint. Coordinator:	_____	/ _____	/ _____	/ _____
	Print Name	Signature	Z #	Date
Maint. Coordinator:	_____	/ _____	/ _____	/ _____
	Print Name	Signature	Z #	Date
Maint. Manager:	_____	/ _____	/ _____	/ _____
	Print Name	Signature	Z #	Date
FOD or Designee:	_____	/ _____	/ _____	/ _____
	Print Name	Signature	Z #	Date

Form 2100

Los Alamos NATIONAL LABORATORY EST. 1943

Integrated Work Document (IWD) Part 1, Activity Specific Information

615-0136

IWD #: DSESH-EWMO-WMC-IWD Revision #: 1			Activity/Task Title Waste Management Coordinator daily activities for inspection, movement, opening/closing, field sampling and screening, packaging/repackaging, and closing containers. Containers may include but are not limited to: 5, 10, 15, 30, 55, 85, 110 gallon drums, B-12, B-25, SWBs, Roll-Offs, Intermodels, Conexes, soft sided bags, and other types of waste containers.
Work Document #			Planner/Preparer (Name/Z #/Date) Russell Stone / 117365 / 7-26-2015
TA 54	Building All	Room All	Other Location(s)(TA) as required TA-54 Admin area; Areas G, H, J, L; RANT, WCRRF (TA50-69), and WDS Bldg. 1009 and 426

Activity Description/Overview:

Hazard Analysis (HA) Method Used: ☒ Brainstorming ☐ Other:

List Names of HA Team (Attach sheet if necessary): Robyn Petersen

Date HA Performed: August 21, 2014

The RLM approval indicates Integrated Work Management (IWM) has been applied appropriately, work is authorized, workers are qualified, work will be performed in accordance with Environment, Safety, Health, and Quality (ESH&Q)/Security and Safeguards (S&S) requirements and the IWD, and facility safety basis, aggregate hazards, and collocated hazards were appropriately included in the hazard analysis. RLM acknowledges completion of a peer review.

RLM (Signature/Z#/Date) Required: [signature] / 100844 / 10-15-2015

The Facility Operator Director (FOD) approval on Form 2100 indicates work is appropriate to be conducted in this facility (the activity is within the Authorization Basis [AB] and the work is appropriate for the facility), and facility safety basis, aggregate hazards, and collocated hazards will be managed.

Work activities in multiple FOD jurisdictions, e.g., additional facility safety envelopes, require FOD or Representative approval.

FODs or FOD Representatives (Signature/Z#/Date/TA) Required: [signature] / 290408 / 10/19/2015

Subject Matter Exper(s) (SME[s]) Review (Signature/Z#/Date) If Required: Robyn Petersen 086572 10/15/15

Hazard Determination by Hazard Grading Table ☐ Low-Hazard ☒ Moderate-Hazard ☐ High-hazard/Complex **IWD Type:** ☐ Standing IWD ☒ Standard IWD	Expiration Date: September 30, 2016 **RLM and FOD or FOD Representative** reapproval is required. **Annual Review Completed** (RLM Initial/Date): [signature] / SPO / 11-3-15 Name of **Primary Person in Charge (PIC)** (Print): Robyn Petersen Name of **Alternate PIC:** _David Williams Name of **Alternate PIC:**	Classification review completed, if required. NA **Reviewer Signature/Z#/Date**

Work Tasks/Steps	**Hazards, Concerns, and Potential Accidents/Incidents**	**Controls, Preventive Measures, and Bounding Conditions**	**Reference Documents**	**Training**
Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	Identify both activity and work-area hazards for each task/step.	Specify preventive measures, controls for each hazard (e.g., lockout/tagout points, specific Personal Protective Equipment [PPE], Tamper Indicating Devices [TIDs], alarms, safes, recycle, waste minimization).	List permits, operating manuals, security plans, and other reference procedures.	List training and qualification requirements. (P300, Integrated Work Management, Section 6.1)

Use Form 2100 Continuation Page for additional Tasks/Steps (if needed) or attach pages to clearly communicate ES&H/S&S hazards and associated controls.

Integrated Work Document (IWD) Part 1, Activity Specific Information Continuation Page

Form 2100_con

IWD#: DSESH-EWMO-WMC-IWD Revision #: 1

Work Tasks/Steps Identify work steps/tasks in sequence when such sequencing contributes to safety, security, and/or environmental protection.	**Hazards, Concerns, and Potential Accidents/Incidents** Identify both activity and work-area hazards for each task/step.	**Controls, Preventive Measures, and Bounding Conditions** Specify preventive measures, controls for each hazard [e.g., lockout/tagout points, specific PPE, Tamper Indicating Device TIDs), alarms, safes, recycle, waste minimization]	**Reference Documents** List permits, operating manuals, security plans, and other reference procedures.	**Training** List training and qualification requirements.
All Steps	Site specific hazards	• At a minimum, wear PPE as required by site specific training.		Site specific training or escort
	Emergency responses	• During emergencies, follow the appropriate Emergency Action Plan. • Know where the closest Shelter-In-Place location is. • If you discover an emergency situation, understand the appropriate actions (e.g., evacuate area, notify the Operations Center, call 911, etc.).	Site specific EAP	Site specific training
	Exposure to thermal stress	• Wear appropriate clothing for the season and environmental conditions. • Be aware of changing conditions. • Ensure that you stay hydrated. • Contact the deployed IH to plan work/rest schedules for work requiring physical exertion, additional PPE, unusually hot or cold work environments.		Curriculum #18649, Thermal Stress Awareness Self-Study
	Exposure to ionizing radiation	• Ensure that you are briefed to the Radiological Work Permit for work required in radiation areas. Contact the DSESH RP team to ensure you understand PPE and other RP work requirements. • Follow ALARA principles of time, distance, and shielding. • Follow all postings. • TLD	RWP (when required)	Radiological Worker 2 #12909
	Exposure to radiological contamination	• RCT support • Safety glasses • Cut resistant gloves • Follow all postings and RCT directions. • If a CAM alarm activates while in the contamination area, evacuate yourself and other workers to a safe location and contact the appropriate Operations Center.	RWP (when required)	Radiological Worker 2 #12909

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All Steps	Exposure to solid or liquid chemical waste	• Review SDS for chemical and health hazards. • Contact the deployed IH to ensure proper PPE selection (e.g., chemical specific gloves). • Wear safety glasses with sideshields or goggles at a minimum to protect eyes. • Long sleeve shirt, long pants, closed toed shoes.	Manufacturer's SDS (or MSDS for legacy chemicals).	Hazard Communication #25997 Training Plan WQ8H060-2781, WMC qual standard
	Biological Hazards: Wild animals, Feces, remains, insects, rodents, snakes, Hanta virus, plague, molds, etc.	• Never approach a wild animal. • Contact the appropriate Operations Center and report sitings of snakes or large wild animals. • Do not disturb nesting material, feces, or remains. Pause work, contact the appropriate Operations Center for Pest Control support. • Report insect bites/stings to your FLM.		
	Slips, trips, and falls	• Prior to moving waste or empty containers, check the route to ensure it is free of obstructions or slip/trip hazards. • Maintain awareness for uneven surfaces. • Wear proper shoes and be aware of footing. Weather conditions may create a slip/trip hazard, maintain awareness. • Low light conditions hide slip/trip hazards, ensure adequate lighting to perform work.		
	Muscle strains/injury	• Do not lift more than 50 lbs without a lifting device or a second worker. • Plan lifts prior to lifting heavy loads. • Consider your physical condition and ask for help when you are unsure that you can manage a load without assistance.		
	Adverse weather conditions	• Lightning/Thunder; use the 30/30 rule. Seek shelter in a building or a vehicle. • Extreme weather demands correct clothing and working with a buddy system. Consider contacting your FLM prior to starting outdoor work.		

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Inspections	Leaks, spills – exposure to chemical waste	• Minimize exposure, determine spill volume if safe to do so. • Stop small leaks if safe to do so. • Contact the appropriate Operations Center and report leaks immediately. • If not safe to approach a leaking container, evacuate immediately, warn others, only allow emergency response personnel to enter.		Training Plan WQ8H060-2781, WMC qual standard
	Incompatible containers and/or waste	• Visually inspect containers and ensure that waste or product is segragated according to hazard class.		
	Bulging container	• If a container is bulging: o Evacuate and warn others. o Immediately contact the appropriate Operations Center. o Prevent entry by other personnel.		
Container movement	Pinch points	• Wear cut resistant gloves. • Be aware of hand and foot position at all times during movement. • Plan movements.		Training Plan WQ8H060-2781, WMC qual standard
	Physical injuries	• Wear sturdy work boots with toe protection. • Wear safety glasses with side shields. • Wear cut resistant gloves when pinch points or hand injuries are possible. • When working around rotating equipment, control loose fitting clothing, hair, badges/lanyards, do not wear gloves. • Call 911 for major injuries. For minor injuries, contact the appropriate Operations Center and have your FLM escort you to the LANL Occupational Medicine Clinic.		
	Dropped containers resulting in worker injury, spills, or leaks	• Plan all movements, check all container openings to ensure that they are closed appropriately. • Secure the load before movement. • Stop spills/leaks if trained to do so. • For large leaks/spills; immediately evacuate, warn others, contact the appropriate Operations Center.		

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Container movement: MANUAL	Muscle strain	• All movements (e.g., lifting, sliding, or moving) of 55-gallon and larger drums, empty or containing waste, SHALL be performed using mechanical assistance (e.g., pallet jack, drum hauler, forklift). • Any manual movement of 55-gal or larger drums, whether empty or containiner waste, that does not use mechanical assistance SHALL only be performed as a last resort and with written (e.g., e-mail, memorandum) approval from one of the following individuals: o EWMO FOD o LTP Program Manager o EWMO Operations Manager. • Written approval SHALL contain a description of the activity to be performed, the non-mechanically assisted movement method approved for use, and a reason for not using mechanical assist methods. A copy of the written approval SHALL be maintained in the appropriate Operations Center. • The EWMO ESH Manager SHALL be notified and provided a copy of the written approval.		Training Plan WQ8H060-2781, WMC qual standard
Container Movement: FORKLIFT	Equipment breakdown/failure	• Perform pre-operational inspection and complete the checklist prior to use for each shift. • Operator must be qualified and authorized to operate the forklift. • Ensure that the forklift has sufficient capacity to handle the load. • Do not use the forklift for a purpose not intended or designed to be used. • Walk the travel path prior to movement. • Use a spotter where movement will be in congested areas.		Curriculum 20299, Forklift Classroom Instruction. Curriculum 20300, Forklift Examination.
Container Movement: DRUM DOLLY/PALLET JACK	Equipment breakdown/failure	• Conduct visual inspection and perform operational check prior to use. • If equipment is damaged or does not functional as intended, tag out of service and report it to the appropriate Operations Center.	Current annual inspection for lifting equipment	

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CONTAINER OPENING AND CLOSING:	Injuries using hand tools: Pinch points, cuts, abrasions	• Inspect hand tools prior to use, damaged hand tools must be tagged out of service and replaced. • Use the appropriate tool for the job, if the tool is not available pause work and locate the appropriate tool. • Wear cut resistant gloves. • Be aware of surroundings and maintain good housekeeping.		Training Plan WQ8H060-2781, WMC qual standard
	Uncontrolled pressure release from a drum/container	• Slowly open bung to relieve pressure. • Use appropriate tools. • If the drum does not have a bung, apply a lid restraint and slowly loosen the ring bolt or closure device and loosen lid to relieve pressure. • Do not open drums/containers that show deformation from pressure, pause work, evacuate the area and notify the appropriate Operations Center.		
	Exposure to corrosive liquid	• When opening a drum with known corrosives, PPE must include chemical splash goggles, or a faceshield and safety glasses, closed toed shoes, long pants, and a lab coat. • When opening a drum with unknown liquids, PPE will be consistent with drums with corrosives. • Contact the deployed IH to ensure exposures are controlled. • Ensure that an eyewash station is immediately available.		
	Foot injury	• Always wear sturdy work boots with toe protection.		
	Injury due to falling lids, Equipment damage from uncontrolled lid removal	• Always use two workers to remove lids from large containers and place on ground or appropriate surface. • For large containers that have hinged lids or sides, always open completely. If installed, ensure that locking devices or lift pistons are set. • If lifting pistons do not have a locking device, ensure that they will hold the lid in an upright position • If one or all lift pistons are defective, do not use to hold containers open. Tag out of service, pause work and contact the LLW disposal team, 667-2203.		

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WASTE PACKAGING and/or REPACKAGING: Adding/removing material, containers, absorbent or packages	Waste incompatability	• Only package waste in compatible containers. • Separate waste accoring to hazard class.		Training Plan WQ8H060-2781, WMC qual standard
	Exposure to containerized solid or liquid chemicals (e.g., closed inner containers, ampoules, bulk containers, etc.)	• Wear safety glasses with sideshields if working with contained liquids, chemical specific gloves, closed toe shoes, long pants and long-sleeved shirt. • Contact the deployed IH for chemical specific PPE selection, guidance, and direction. • Ensure that an eyewash is in close proximity to the work area.		
	Exposure to corrosive liquids	• Wear safety glasses with sideshields if working with contained liquids, chemical specific gloves, closed toe shoes, long pants and long-sleeved shirt. • Contact the deployed IH for chemical specific PPE selection, guidance, and direction. • Ensure that an eyewash is in close proximity to the work area.		
	Leaks/spills from containers with compromised integrity	• Visually inspect containers for integrity before handling. • Pause work if a leak or spill is discovers or occurs. • If trained and it is safe to do so, stop leak/spill. • Minimize exposure duration. • If leak/spill is not controlled, evacuate to a safe location and warn others. • Contact the appropriate Operations Center and your FLM.		
	Fire and/or Explosion	• Ground or bond receiving container if waste is flammable. • Use non-sparking tools to open and close.		
	Exposure to uncontainerized liquid chemicals	• When adding absorbent material to uncontained chemicals (e.g., spills), wear safety goggles or face shield with safety glasses, chemical specific gloves (per IH direction), closed toe shoes, long pants, long sleeve shirt, and a lab coat (a coat may be worn under the lab coat during winter weather in un air-conditioned buildings.		

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CONTAINER CLOSING	Leak or spill of chemical or radioactive material	• After packaging waste in container check gasket(s) on lie/door to ensure it is not damaged and replace if necessary. • Ensure container is closed properly. • For containers with radioactive waste, ensure that radiological surveys are performed.		Training Plan WQ8H060-2781, WMC qual standard
FIELD SAMPLING AND SCREENING ACTIVITIES	Skin, eye, and/or face exposure to sample material	• Wear chemical specific gloves in accordance with deployed IH direction when performing bulk sampling and/or handling environmental media. • Wash hands and exposed skin at the end of the activity. • Consult with the deployed IH for PPE determination when performing sampling or screening activities that pose a body exposure risk (e.g., calawasa sampling). • Wear non-vented goggles and a face shield when collecting liquid samples or corrosive liquid samples. • Collect corrosive liquid samples adjacent to an eyewash/safety shower. • Wear safety glasses w/sideshields and a face shield when collecting particulate samples.		Training Plan WQ8H060-2781, WMC qual standard
	Potential inhalation of non-radioactive particulates, gases, or vapors	• Avoid unnecessary contact with or disturbance of material to be sampled. • Use local exhaust ventilation, a vented glovebox or glovebag, or a fume hood to capture airborne gases, vapors, or particulate. • Plan work to minimize exposure. • Contact the deployed IH to determine if respiratory protection is required and what type.		***If RPE is required:*** Annual physical; Curriculum 40723, Respirators: APR Self Study; Curriculum 3549, Respirators: Air-Purifying Fit Test
	Potential radiological contamination	• Adhere to the requirements of the Radiological Work Permit (if applicable). • Follow the direction of the RCT. • Read and follow all postings. • Work only in designated areas. • Familiarize with the work area and location of hazards before start of activities/work.		

Form 2101

Los Alamos NATIONAL LABORATORY EST.1943

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: 00496390-01 Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD 5	TA 50	Bldg. 69, 75, 194	Room All	Other Location Outside
FOD Designated Facility Point-of-Contact	Name JPO 7-23-15 ~~Randy Axtell~~ Gail Helm	Phone JPO 7-23-15 ~~667-2203~~ 699-3925	Pager N/A	Email JPO 7-23-15 ~~N/A~~ gailw@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☒ Other Bounding Conditions: ***FOLLOW ALL POSTINGS***
- ☒ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☒ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☒ Work-Area Training Required
- ☒ Check in Daily
- ☒ Check out Daily

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)
If training requirements are not met, then an escort is required. All work must be coordinated with WCRRF (TA-50-0069) Operations before work is authorized.

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS

Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☐ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard:** Posted Radiological Areas	☒ Yes ☐ No	Areas are posted as radiological areas.	RWP-2012-0029	RAD Worker II Dosimetry Site Specific training (if not escorted)

IWD No./Work Request No: 00496390-01 Revision #: 0

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:**	☐ Yes ☒ No			
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☐ Yes ☒ No			
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) Approval Required Pat O'Brien/151358/7-23-15

Date Approval Expires: 12-31-15

Los Alamos NATIONAL LABORATORY EST. 1943

Form 2101

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: _____ Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD	TA	Bldg.	Room	Other Location
5	50	75	All	Outside
FOD Designated Facility Point-of-Contact	Name JPO 7-23-15 ~~John Guadagnoli~~ Gail Helm	Phone JPO 7-23-15 ~~412-5764~~ 699-3925	Pager N/A	Email JPO 7-23-15 ~~guadagnoli@lanl.gov~~ gailw@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☒ Other Bounding Conditions: ***FOLLOW ALL POSTINGS***
- ☒ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☒ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☒ Work-Area Training Required
- ☒ Check in Daily
- ☒ Check out Daily

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)

If training requirements are not met, then an escort is required. All work must be coordinated with WCRRF (TA-50-0069) Operations before work is authorized.

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☐ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard:** Posted Radiological Areas	☒ Yes ☐ No	Areas are posted as radiological areas.	RWP-2012-0029	RAD Worker II Dosimetry Site Specific training (if not escorted)

IWD No./Work Request No: _____ Revision #: 0

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:**	☐ Yes ☒ No			
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☐ Yes ☒ No			
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) **Approval Required** Pat O'Day / 151358 / 7-23-15

Date Approval Expires: 12-31-15

Form 2101

Los Alamos NATIONAL LABORATORY EST.1943

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: 00496390-01 Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD	TA	Bldg.	Room	Other Location
5	50	84	All	OUTSIDE
FOD Designated Facility Point-of-Contact	Name ~~Randy Axtell~~ Gail Helm JPO 7-23-15	Phone ~~3825~~ 3925 JPO 7-23-15	Pager N/A	Email ~~rra@lanl.gov~~ jailw@lanl.gov JPO 7-23-15

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☐ Other Bounding Conditions:
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☐ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☐ Work-Area Training Required
- ☒ Check in Daily
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Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS

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☐ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard:**	☐ Yes ☒ No			

IWD No./Work Request No: 00496390-01 Revision #: 0

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:**	☐ Yes ☒ No			
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☐ Yes ☒ No			
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) **Approval Required** Pat O'G[illegible]/151358/7-23-15

Date Approval Expires: 12-31-15

Los Alamos NATIONAL LABORATORY EST. 1943

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: 00468450-01 Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD	TA	Bldg.	Room	Other Location
5	54	555	All	Outside (South of RANT)
FOD Designated Facility Point-of-Contact	Name Pat O'Grady, Gary Garcia, or Bob Harder	Phone 231-8289	Pager N/A	Email jpo@lanl.gov garyg@lanl.gov rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☐ Other Bounding Conditions:
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☐ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☐ Work-Area Training Required
- ☐ Check in Daily
- ☐ Check out Daily

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☐ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard:**	☐ Yes ☒ No			

Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard:**	☐ Yes ☒ No			
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:**	☐ Yes ☒ No			
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☐ Yes ☒ No			
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) Approval Required [signature] / 151358 / 7-16-15

Date Approval Expires: 12-31-15

IWD No./Work Request No: 00468450-01 Revision #: 0

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:**	☒ Yes ☐ No	Follow confined space postings.		Confined Space
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☒ Yes ☐ No	Working on roofs.		Fall Protection
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) Approval Required Pat O'Day / 151358 / 7-16-15

Date Approval Expires: 12-31-15

Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard: *Posted Radiological Areas***	☒ Yes ☐ No	Areas are posted as radiological areas.	Follow applicable RWPs	RAD Worker II Dosimetry Site Specific training (if not escorted)
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:**	☐ Yes ☒ No			
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☐ Yes ☒ No			
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) **Approval Required** Pat O'Day / 1513578 / 7-16-15

Date Approval Expires: 12-31-15

Form 2101

Los Alamos NATIONAL LABORATORY EST. 1943

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: 00496390-01 Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD 5	TA 54	Bldg. 242/367	Room ALL	Other Location Outside
FOD Designated Facility Point-of-Contact	Name Pat O'Grady, Gary Garcia, or Bob Harder	Phone 231-8289	Pager N/A	Email jpo@lanl.gov garyg@lanl.gov rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☐ Other Bounding Conditions:
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☒ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☒ Work-Area Training Required
- ☒ Check in Daily
- ☒ Check out Daily

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☒ **No Work Area Hazards**				

IWD No./Work Request No: Revision #: 0

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:**	☒ Yes ☐ No	Confined Space work		Confined Space
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☒ Yes ☐ No	Working on roof		Fall Protection
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) **Approval Required** [signature] / 151358 / 7-16-15

Date Approval Expires: 12-31-15

Form 2101

Los Alamos NATIONAL LABORATORY EST.1943

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: _____ Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD	TA	Bldg.	Room	Other Location
5	54	577/578	ALL	N/A
FOD Designated Facility Point-of-Contact	Name Pat O'Grady, ~~Gary Garcia,~~ or Bob Harder SPO 7-16-15	Phone 231-8289	Pager N/A	Email jpo@lanl.gov ~~garyg@lanl.gov~~ SPO 7-16-15 rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☒ Other Bounding Conditions: ***FOLLOW ALL POSTINGS***
- ☒ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☒ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☒ Work-Area Training Required
- ☒ Check in Daily
- ☒ Check out Daily

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)
If training requirements are not met, then an escort is required.

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☐ **No Work Area Hazards**				

Form 2101

Los Alamos NATIONAL LABORATORY EST.1943

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD	TA	Bldg.	Room	Other Location
5	54	0038	All	OUTSIDE
FOD Designated Facility Point-of-Contact	Name Pat O'Grady, Bob Harder	Phone 231-8289	Pager N/A	Email jpo@lanl.gov rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☐ Other Bounding Conditions:
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☒ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☒ Work-Area Training Required
- ☒ Check in Daily
- ☒ Check out Daily

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)

If training requirements are not met, then an escort is required.

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☐ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard:**	☐ Yes ☒ No			

IWD No./Work Request No: 00 Revision #: 0

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:**	☒ Yes ☐ No	Follow confined space postings.		Confined Space
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☒ Yes ☐ No	Working on roofs.		Fall Protection
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) Approval Required Pat O'Hara / 151358 / 7-16-15

Date Approval Expires: 12-31-15

Form 2101

Los Alamos NATIONAL LABORATORY EST. 1943

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: 00 Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD	TA	Bldg.	Room	Other Location
5	46	120/326	All	Outside
FOD Designated Facility Point-of-Contact	Name Pat O'Grady, JPO 7-16-15 ~~Gary Garcia~~, or Bob Harder	Phone 231-8289	Pager N/A	Email jpo@lanl.gov ~~garyg@lanl.gov~~ JPO 7-16-15 rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☐ Other Bounding Conditions:
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☐ Work-Area Training Required
- ☒ Work must be Scheduled
- ☐ Check in Daily
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☐ Check out Daily
- ☐ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☐ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard:**	☐ Yes ☒ No			

Los Alamos NATIONAL LABORATORY EST.1943

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: _____ Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD 5	TA 54	Bldg. 1009	Room All	Other Location Outside
FOD Designated Facility Point-of-Contact	Name Pat O'Grady, ~~Gary Garcia,~~ or Bob Harder JPO 7-16-15	Phone 231-8289	Pager N/A	Email jpo@lanl.gov ~~garys@lanl.gov~~ JPO 7-16-15 rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☐ Other Bounding Conditions:
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☐ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☐ Work-Area Training Required
- ☐ Check in Daily
- ☐ Check out Daily

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS

Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☐ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard:**	☒ Yes ☒ No JPO 7-16-15	Areas are posted as Radiological Areas	Follow applicable RWP	RAD Worker II Dosimetry

IWD No./Work Request No: _____ Revision #: 0

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:**	☒ Yes ☐ No	Follow confined space postings.		Confined Space
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☒ Yes ☐ No	Working on roofs.		Fall Protection
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) Approval Required Pat O'Day / 151358 / 7-16-15

Date Approval Expires: 12-31-15

Los Alamos NATIONAL LABORATORY EST.1943

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: _____ Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD 5	TA 54	Bldg. 1014	Room All	Other Location Outside
FOD Designated Facility Point-of-Contact	Name Pat O'Grady, Gary Garcia, or Bob Harder	Phone 231-8289	Pager N/A	Email jpo@lanl.gov garyg@lanl.gov rharder@lanl.gov

Entry and Coordination Requirements (***Check one or more of the following***)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☐ Other Bounding Conditions:
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☐ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☐ Work-Area Training Required
- ☐ Check in Daily
- ☐ Check out Daily

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS

Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☒ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard:**	☐ Yes ☒ No			

IWD No./Work Request No: _____ Revision #: 0

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:**	☐ Yes ☒ No			
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☐ Yes ☒ No			
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) **Approval Required** Pat O'Brady / 151358 / 7-16-15

Date Approval Expires: 12-31-15

Form 2101

Los Alamos NATIONAL LABORATORY EST.1943

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: _____ Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD 5	TA 54	Bldg. 2/8/11/20/156/242/273/ 295/306/315/324/325	Room ALL	Other Location 365/371/372/486/487 578
FOD Designated Facility Point-of-Contact	Name Pat O'Grady, or Bob Harder	Phone 231-8289	Pager N/A	Email jpo@lanl.gov, rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☐ Other Bounding Conditions: _____
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☐ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☒ Work-Area Training Required
- ☒ Check in Daily
- ☒ Check out Daily

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☐ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard:**	☐ Yes ☒ No			

IWD No./Work Request No: _____ Revision #: 0

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:** Tanks or Manholdes	☒ Yes ☐ No	Follow confined space postings.		Confined Space
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☒ Yes ☐ No	Working on roofs.		Fall Protection
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) **Approval Required** Pat O'Day / 151358 / 7-16-15

Date Approval Expires: 12-31-15

Form 2101

Los Alamos NATIONAL LABORATORY EST.1943

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: _____ Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD 5	TA 54	Bldg. 33	Room All	Other Location N/A
FOD Designated Facility Point-of-Contact	Name Pat O'Grady, ~~Gary Garcia,~~ or JPO 7-16-15 Bob Harder	Phone 231-8289	Pager N/A	Email jpo@lanl.gov ~~garyg@lanl.gov~~ JPO 7-16-15 rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☒ Other Bounding Conditions: ***FOLLOW ALL POSTINGS***
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☒ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☒ Work-Area Training Required
- ☒ Check in Daily
- ☒ Check out Daily

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)
If training requirements are not met, then an escort is required.

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☐ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard:** Posted Radiological Area	☒ Yes ☐ No	Areas are posted as radiological areas.	Follow applicable RWPs	RAD Worker II Dosimetry Site Specific training (if not escorted)

IWD No./Work Request No: _____ Revision #: 0

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards: Entry into Confined Space.#'s 756, 4082, 4253, 4258, or 4259**	☒ Yes ☐ No	Read and follow confined space evaluation.	Confined Space Evaluation Confined Space Permit (if applicable)	Confined Space Entry
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☐ Yes ☒ No			
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) **Approval Required** [signature] 4/151358/7-16-15

Date Approval Expires: 12-31-15

Form 2101

Los Alamos NATIONAL LABORATORY EST.1943

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: _____ Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD	TA	Bldg.	Room	Other Location
5	54	N/A	N/A	AREA G PITS
FOD Designated Facility Point-of-Contact	Name Pat O'Grady, ~~Gary Garcia~~, or JPO 7-16-15 Bob Harder	Phone 231-8289	Pager N/A	Email jpo@lanl.gov ~~garya@lanl.gov~~ JPO 7-16-15 rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☒ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☒ Work-Area Training Required
- ☒ Check in Daily
- ☒ Check out Daily
- ☒ Other Bounding Conditions: ***AREA G IS POSTED AS A RADIOLOGICAL CONTROLLED AREA***

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)
If training requirements are not met, then an escort is required.

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☐ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard:**	☐ Yes ☒ No			

IWD No./Work Request No: _____ Revision #: 0

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:** Radiological Controlled Area	☒ Yes ☐ No	Posted Radological Controlled Area	Follow applicable RWP.	RAD Worker II, Dosimetry, Site Specific training (if not escorted)
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:**	☐ Yes ☒ No			
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☒ Yes ☐ No	Wear fall protection PPE when handrail is not in place.	Fall Protection Plan	Fall Protection
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☒ Yes ☒ No SJO 7-16-15			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) **Approval Required** [signature] / 151358 / 7-16-15

Date Approval Expires: 12-31-15

Form 2101 (6/12)

Los Alamos NATIONAL LABORATORY EST.1943

Form 2101

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: 00-01 Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD	TA	Bldg.	Room	Other Location
5	54	33/48/49/153/224/229/ 230/231/232/283/375/ 412/491/545/546/PAD 10	ALL	N/A
FOD Designated Facility Point-of-Contact	Name Pat O'Grady, Bob Harder	Phone 231-8289	Pager N/A	Email jpo@lanl.gov rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☒ Other Bounding Conditions: ***FOLLOW ALL POSTINGS***
- ☒ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☒ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☒ Work-Area Training Required
- ☒ Check in Daily
- ☒ Check out Daily

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)
If training requirements are not met, then an escort is required.

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☐ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard: *Posted Radiological Areas***	☒ Yes ☐ No	Areas are posted as radiological areas.	Follow applicable RWPs	RAD Worker II Dosimetry Site Specific training (if not escorted)

Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:**	☐ Yes ☒ No			
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☐ Yes ☒ No			
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) Approval Required Pat O'Brien/151358/7-16-15

Date Approval Expires: 12-31-15

Los Alamos NATIONAL LABORATORY EST. 1943

Form 2101

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: 00 Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD 5	TA 54	Bldg. AREA G	Room N/A	Other Location OUTSIDE
FOD Designated Facility Point-of-Contact	Name Pat O'Grady, Bob Harder	Phone 231-8289	Pager N/A	Email jpo@lanl.gov rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☒ Other Bounding Conditions: ***FOLLOW ALL POSTINGS***
- ☒ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work-Area Training Required
- ☒ Work must be Scheduled
- ☒ Check in Daily
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☒ Check out Daily
- ☒ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)
If training requirements are not met, then an escort is required.

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☐ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard:** ***Posted Radiological Areas***	☒ Yes ☐ No	Areas are posted as radiological areas.	Follow applicable RWPs	RAD Worker II Dosimetry Site Specific training (if not escorted)

Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:**	☐ Yes ☒ No			
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☐ Yes ☒ No			
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) Approval Required Dale O'Dell Z151358 7-16-15

Date Approval Expires: 12-31-15

Form 2101

Los Alamos NATIONAL LABORATORY EST.1943

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: _____ Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD	TA	Bldg.	Room	Other Location
5	54	31/32/35/36/39/50/55/58/62/68/69/70/215/1058	ALL	AREA-L
FOD Designated Facility Point-of-Contact	Name: Pat O'Grady or Bob Harder	Phone: 231-8289	Pager: N/A	Email: jpo@lanl.gov, ~~garyg@lanl.gov~~ JPO 7-16-15, rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☐ Other Bounding Conditions: _____
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☐ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☒ Work-Area Training Required
- ☒ Check in Daily
- ☒ Check out Daily

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS

Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☐ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard:**	☐ Yes ☒ No			

IWD No./Work Request No: _____ Revision #: 0

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:** Tanks or Manholdes	☒ Yes ☐ No	Follow confined space postings.		Confined Space
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☒ Yes ☐ No	Working on roofs.		Fall Protection
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) **Approval Required** [illegible] / 151358 / 7-16-15

Date Approval Expires: 12-31-15

Los Alamos NATIONAL LABORATORY EST. 1943

Form 2101

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: _____ Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD	TA	Bldg.	Room	Other Location
5	54	37/51/60/157/245/246/247/315/323/532/533/555/9500	ALL	OUTSIDE
FOD Designated Facility Point-of-Contact	Name Pat O'Grady or Bob Harder	Phone 231-8289	Pager N/A	Email jpo@lanl.gov, rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☐ Other Bounding Conditions: _____
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☐ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☒ Work-Area Training Required
- ☒ Check in Daily
- ☒ Check out Daily

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☐ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices.	☐ Yes ☒ No			

Specify Hazard:				

IWD No./Work Request No: _____ Revision #: 0

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:** Tanks or Manholes	☒ Yes ☐ No	Follow confined space postings.		Confined Space
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☒ Yes ☐ No	Working on roofs.		Fall Protection
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) **Approval Required** Pat O'Grady/15135-8/7-16-15

Date Approval Expires: 12-31-15

Los Alamos NATIONAL LABORATORY EST.1943

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: _____ Revision #: ____

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD 5	TA 54	Bldg. 175/176/275/370	Room ALL	Other Location OUTSIDE
FOD Designated Facility Point-of-Contact	Name Pat O'Grady, ~~Gary Garcia~~, or SPO 7-16-15 Bob Harder	Phone 231-8289	Pager N/A	Email jco@lanl.gov ~~garyg@lanl.gov~~ SPO 7-16-15 rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☐ Other Bounding Conditions: _____
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☐ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☒ Work-Area Training Required
- ☒ Check in Daily
- ☒ Check out Daily

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☐ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices.	☐ Yes ☒ No			

Specify Hazard:				

IWD No./Work Request No: ____ Revision #: ____

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:** Tanks or Manholdes	☒ Yes ☐ No	Follow confined space postings.		Confined Space
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☒ Yes ☐ No	Working on roofs.		Fall Protection
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) Approval Required Pat O'[illegible]/151358/7-16-15

Date Approval Expires: 12-31-15

Los Alamos NATIONAL LABORATORY EST.1943

Form 2101

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: _____ Revision #: ____

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD 5	TA 54	Bldg. 9500	Room ALL	Other Location OUTSIDE (Admin Area)
FOD Designated Facility Point-of-Contact	Name Pat O'Grady or Bob Harder	Phone 231-8289	Pager N/A	Email jpo@lanl.gov rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☐ Other Bounding Conditions: _____
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☐ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☒ Work-Area Training Required
- ☒ Check in Daily
- ☒ Check out Daily

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the site hazards as well as any special training required.

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
☒ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard:**	☐ Yes ☒ No			

IWD No./Work Request No: ____ Revision #: ____

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:** Tanks or Manholdes	☐ Yes ☒ No			
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☐ Yes ☒ No			
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) **Approval Required** Pat O'Day/151358/7-16-15

Date Approval Expires: 12-31-15

Form 2101

Los Alamos NATIONAL LABORATORY EST.1943

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: _____ Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD	TA	Bldg.	Room	Other Location
5	54	1027/1028/1030/1041	All	OUTSIDE
FOD Designated Facility Point-of-Contact	Name Pat O'Grady, ~~Gary Garcia~~, or JPO 7-16-15 Bob Harder	Phone 231-8289	Pager N/A	Email jpo@lanl.gov ~~garyg@lanl.gov~~ JPO 7-16-15 rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☒ Other Bounding Conditions: ***FOLLOW ALL POSTINGS***
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☒ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☒ Work-Area Training Required
- ☒ Check in Daily
- ☒ Check out Daily

Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)
If training requirements are not met, then an escort is required.

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☐ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices.	☒ Yes ☐ No	Areas are posted as radiological areas. RCT to Tritium sniff prior to entry.		RAD Worker II Dosimetry Site Specific training (if not escorted)

Specify Hazard:				

IWD No./Work Request No: ____ Revision #: ____

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards:**	☐ Yes ☒ No			
Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:** Tanks or Manholdes	☒ Yes ☐ No	Follow confined space postings.		Confined Space
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☒ Yes ☐ No	Working on roofs.		Fall Protection
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) Approval Required Pat O'[illegible]/151358/7-16-15

Date Approval Expires: 12-31-15

Los Alamos NATIONAL LABORATORY EST.1943

Form 2101

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: _____ Revision #: ____

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD 5	TA 54	Bldg. 9500	Room ALL	Other Location OUTSIDE (Admin Area)
FOD Designated Facility Point-of-Contact	Name Pat O'Grady or Bob Harder	Phone 231-8289	Pager N/A	Email jpo@lanl.gov rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☐ Security Clearance Requirements
- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☐ Other Bounding Conditions: _____
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
- ☒ Work must be Scheduled
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Quality Issues
- ☐ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☒ Work-Area Training Required
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Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)

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☒ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard:**	☐ Yes ☒ No			

IWD No./Work Request No: ____ Revision #: ____

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Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:** Tanks or Manholdes	☐ Yes ☒ No			
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FOD or Representative (Signature/Z #/Date) **Approval Required** Pat O'Day/151358/7-16-15

Date Approval Expires: 12-31-15

Form 2101

Los Alamos NATIONAL LABORATORY EST.1943

Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

IWD No./Work Request No: _____ Revision #: 0

Facility Operation Director (FOD) must determine the facility entry and coordination requirements and identify the Environment, Safety, Health (ESH)/Security and Safeguards (S&S) hazards and controls associated with the activity location.

FOD	TA	Bldg.	Room	Other Location
5	54	1027/1028/1030/1041	All	OUTSIDE
FOD Designated Facility Point-of-Contact	Name Pat O'Grady, ~~Gary Garcia~~, or JPO 7-16-15 Bob Harder	Phone 231-8289	Pager N/A	Email jpo@lanl.gov ~~garyg@lanl.gov~~ JPO 7-16-15 rharder@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
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- ☐ Co-located Hazards/Concerns
- ☒ Check out at End of Work
- ☐ Escort Required
- ☒ Other Bounding Conditions: ***FOLLOW ALL POSTINGS***
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Check in at Start of Work
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- ☒ Work-Area Training Required
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Additional Comments (refer to Job Hazard Analysis [JHA] Tool Facility Notes)
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☐ **No Work Area Hazards**				
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices.	☒ Yes ☐ No	Areas are posted as radiological areas. RCT to Tritium sniff prior to entry.		RAD Worker II Dosimetry Site Specific training (if not escorted)

Specify Hazard: Posted Radiological Areas				

IWD No./Work Request No: _____ Revision #: 0

ESH/S&S WORK AREA HAZARDS & CONTROLS				
Work Area Hazards/Concerns Identify site hazards and concerns that could potentially affect the worker(s) or others.	**Work Area Hazard Present**	**Facility Controls/ Preventive Measures/ Bounding Conditions** Specify preventive measures, controls and bounding conditions for each site hazard	**Reference Documents** List permits, operating manuals, and other reference procedures	**Training and Qualification** List training requirements (P300, Integretated Work Management, Section 6.1)
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Energized and Operative Systems Working near energized electrical parts, pressure systems, steam lines; near unprotected belts, pulleys, chains or rotating equipment; fuel fired equipment other than vehicles; or spark or flame producing operations. **Specify Hazards:**	☐ Yes ☒ No			
Confined Spaces Entry into tanks, manholes, cooling towers, sumps, or any other area with potentially low oxygen concentration or other hazards such as toxic vapors or engulfment. **Specify Hazards:**	☐ Yes ☒ No			
Elevated Work Surface Elevated work when fall protection is not provided by conventional handrail systems or required per P101-20, *Fall Protection Program*	☐ Yes ☒ No			
Environmental Impact Activities conducted in areas containing potential release site, contaminated soil, sensitive species, watercourse wetlands, floodplain, historical/archeological sites, or other work area condition that can be impacted by or can impact the environment. **Specify Hazards:**	☐ Yes ☒ No			
Security Requirements **Specify:**	☐ Yes ☒ No			
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWM process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) Approval Required Pat O'Reilly/15-1358/7-16-15

Master
From: 11-02-15
To: 12-31-15
JPO

Form 2103

Los Alamos NATIONAL LABORATORY EST.1943

Integrated Work Document (IWD) Part 3, Validation and Work Release

IWD #DSESH-EWMO-WMC-IWD Revision #:1 Work Release

By signing below, I verify this activity is compatible with current facility configuration and operating conditions.

FOD designated Ops Mgr or other facility point-of-contact for work area

Signature/Z#/Date (If required by FOD): Pat O'Reilly / 15-1358 / 11-02-15

Note: For Standing IWD, release may be given concurrently with signatures on Part 2.

By signing below, I have verified the following:

- I have verified authorization by ensuring approval signatures of the RLM and FOD.
- I have jointly conducted a validation walkdown with workers to confirm the IWD can be performed as written, required initial conditions and other prerequisites are in-place.
- The assigned workers are authorized and are qualified to perform the work in a safe, secure, and environmentally responsible manner.
- I have conducted the pre-job briefing, and all workers (including support workers) have been briefed.
- I have ensured coordination with any required FOD work-area representatives (*e.g., area work coordinators*).

Primary PIC (Signature/Z#/Date) Required: Robyn Peterson

Alternate PIC Signatures acknowledges PIC authority is assumed for the first time *(Note: Alternate PICs are required to sign only once, but formal handoff includes conferring with previous PIC to obtain all required information associated with the handoff).*

Alternate PIC (Signature/Z#/Date) Required: David Williams 284036 10/19/15

Alternate PIC (Signature/Z#/Date) Required:

Pre-Job Brief Content

- What are the critical steps or phases of this activity?
- How can we make a mistake at that point?
- What is the worst thing that can go wrong?
- What controls, preventive measures, and bounding conditions are needed?
- What work permits are required and how will we meet their requirements?
- What are the handoffs and coordination requirements among workers and multiple PICs?
- Are there hold-points including those that require sign-offs?
- What are the pause/stop work responsibilities and expectations (e.g. for unanticipated conditions or hazards)?
- How would we respond to alarms and emergencies?
- Are there lessons learned from previous similar work?
- Is other information needed to perform this activity in a safe, secure, and environmentally responsible manner?
- Does everyone agree to the work tasks/steps, hazards, and controls and commit to follow them?

Pre-Job Brief Attendance Roster

By signing below as required, I agree to the following:

- I agree to follow the work steps and implement the controls as written as applicable to my work assignments.
- I agree to pause/stop work when conditions or hazards change or when I encounter unexpected conditions during the execution of work, or when work cannot be performed as written, or instructions become unclear during execution.
- I confirm that I am authorized, qualified, and fit to perform the work.

Worker (Signature/Z#/Date)	Worker (Signature/Z#/Date)
Robyn Peterson, 086572, 11-2-15	Teresa Lovato 097220 11/4/15
David Williams, 284036, 11/2/15	115646 1-12-16
167459 11-4-15	
207858 11/4/15	

Los Alamos NATIONAL LABORATORY	Facilities Maintenance IWD – (Facility Maintenance Activity Specific Information)		
Revision # **0**			**Activity/Task Title:** **FY15 TA-50-54 ALL LABOR SUPPORT TO SPRAY MICRO BLAZE**
Work Document: (WO#/Task) **00512757-01**			**Planner/Preparer (Name/Z#/Date)** **Robert Maes/088731/1.26.15**
TA: **50/54**	**Building:** **All**	**Room:**	**Additional Location Description:**

11. Training to enter/access TA-50-0069:
    - TP – 115, Rad Worker II or qualified escort
    - TP – 256, RCRA Hazardous/Mixed Waste Worker or qualified escort
    - TP – 9245, WCRRF Non-Res Unescorted Access or qualified escort

GENERAL HAZARDS ***(identify hazards and associated controls)***

Exposure to ionizing radiation when working within a radiological controlled area (RCA):

- Follow the requirements of RWP-2011-0042 for entry to posted areas inside Area G such as but not limited to (49, 224, 283, 48, 33, 375, 230, 231, 232, etc.)
- Follow the requirements of RWP-2015-0098 for entry to 50-0069 yard).

The following PPE is required for all work: Additional PPE may be required in a specific work step:

- Safety Shoes
- Safety Glasses with Side shields
- Hardhats (when overhead hazards are present, wear as required)
- Long-sleeved shirt

Hand injury caused from contact work:

- Wear hand protection commensurate to the job task i.e., leather, rubber, mechanic (M-Pact), water proof, puncture resistant, Kevlar, etc. for contact work. Gloves may be removed when manual dexterity is required (i.e., small screws, etc.) as long as injury to the hand is negligible.

Back Strains:

- Utilize the "two person rule" when lifting greater than 50 pounds.

Shock or electrocution during use of electric power tool

- Use GFCI or insulated power tools

Exposure to work hazards by tenants/adjacent personnel or public:

- Control access to work area with caution tape, barricades, and/or signs.

Task #1: Work Execution

HOLD POINT for WCRRF facility:

Authorization from SOM/SOS that WCRRF YARD is in "Warm Standby or Cold Standby" for duration of this work. NOTE: WCRRF consists of the facility and the outdoor transportainer area including the yard.

WCRRF SOM/SOS: Name (Printed) _____ Z# _____ Signature: _____ Date: _____

WCRRF SOM/SOS: Name (Printed) _____ Z# _____ Signature: _____ Date: _____

WCRRF SOM/SOS: Name (Printed) _____ Z# _____ Signature: _____ Date: _____

WCRRF SOM/SOS: Name (Printed) _____ Z# _____ Signature: _____ Date: _____

WCRRF SOM/SOS: Name (Printed) _____ Z# _____ Signature: _____ Date: _____

Los Alamos NATIONAL LABORATORY	Facilities Maintenance IWD – (Facility Maintenance Activity Specific Information)		
Revision # 0			**Activity/Task Title:** FY15 TA-50-54 ALL LABOR SUPPORT TO SPRAY MICRO BLAZE
Work Document: (WO#/Task) 00512757-01			**Planner/Preparer (Name/Z#/Date)** Robert Maes/088731/1.26.15
TA: 50/54	**Building:** All	**Room:**	**Additional Location Description:**

HOLD POINT for RANT facility:

Authorization from SOM/SOS that 54-38 YARD is in "Warm Standby or Cold Standby" for duration of this work.

RANT SOM/SOS: Name (Printed) _____ Z# _____ Signature: _____ Date: _____

RANT SOM/SOS: Name (Printed) _____ Z# _____ Signature: _____ Date: _____

RANT SOM/SOS: Name (Printed) _____ Z# _____ Signature: _____ Date: _____

RANT SOM/SOS: Name (Printed) _____ Z# _____ Signature: _____ Date: _____

RANT SOM/SOS: Name (Printed) _____ Z# _____ Signature: _____ Date: _____

RANT SOM/SOS: Name (Printed) _____ Z# _____ Signature: _____ Date: _____

RANT SOM/SOS: Name (Printed) _____ Z# _____ Signature: _____ Date: _____

RANT SOM/SOS: Name (Printed) _____ Z# _____ Signature: _____ Date: _____

NOTE:

All combustible material must be accounted for throughout entire job when working at 50-69 and at 54-38. See step 2.2 for controls on combustible material accountability.

Any lubricant material that has a flammability rating greater than 1, then WCRRF and RANT shall be in COLD standby for duration of the job.

1.1 Dilute Micro-Blaze concentration formula with water inside the 2 gallon pump sprayer. Utilizing pump sprayer, spray mixture on oil-stained areas throughout TA-50/TA-54 at locations identified by Liz English or RCRA SME. When spraying the mixture on the affected area, spray enough mix onto the surface to make it wet but do not create puddles. DO NOT apply product to soil.

NOTE:

When diluting micro-blaze with water within the 2 gallon pump sprayer, the ratios for spraying are as follows:

Spraying over oils: the ratio shall be 3% which is approximately 8 fluid ounces and the rest of the container shall be water.

Spraying over gasoline: the ratio shall be 6% which is approximately 15 fluid ounces and the rest of the container shall be water.

Chemical Controls

- MSDS Micro-Blaze Emergency Liquid Spill Control
- Mixing of chemical shall be done outside.
- When mixing and spraying mixture, wear safety goggles, gloves and long sleeve shirts.
- Spray-down wind or in cross winds.
- Notify TA-54 or WCRRF Operations Centers, as appropriate, if a spill of Micro-Blaze concentrate occurs.

Waste Controls:

- Contact WMC for proper management of micro-blaze containers when they are no longer needed.

Los Alamos NATIONAL LABORATORY

Facilities Maintenance IWD – (Facility Maintenance Activity Specific Information)

Revision # 0			Activity/Task Title: FY15 TA-50-54 ALL LABOR SUPPORT TO SPRAY MICRO BLAZE
Work Document: (WO#/Task) 00512757-01			Planner/Preparer (Name/Z#/Date) Robert Maes/088731/1.26.15
TA: 50/54	Building: All	Room:	Additional Location Description:

Task #2: Project Completion.

2.1 NO PMT REQUIRED FOR THIS WORK ORDER TASK.

HOLD POINT for RANT and WCRRF:

2.2 All combustible material must be accounted for throughout entire job. IDENTIFY and DOCUMENT the combustible material that was taken into and removed from the facility/yard.

	Material Entered	Facility (i.e. 50-69, 54-38)	Material Released	Date
1.	_____	_____	1. _____	_____
2.	_____	_____	2. _____	_____
3.	_____	_____	3. _____	_____
4.	_____	_____	4. _____	_____
5.	_____	_____	5. _____	_____
6.	_____	_____	6. _____	_____
7.	_____	_____	7. _____	_____
8.	_____	_____	8. _____	_____
9.	_____	_____	9. _____	_____
10.				

Verify all combustible material has been removed from the work site prior to releasing the equipment to the facility.

Completed: PIC: _____ Z#_____ Date:_____
Completed: PIC: _____ Z#_____ Date:_____
Completed: PIC: _____ Z#_____ Date:_____
Completed: PIC: _____ Z#_____ Date:_____
Completed: PIC: _____ Z#_____ Date:_____
Completed: PIC: _____ Z#_____ Date:_____
Completed: PIC: _____ Z#_____ Date:_____

Completed: SOM or SOM Designee: _____ Z#_____ Date:_____
Completed: SOM or SOM Designee: _____ Z#_____ Date:_____
Completed: SOM or SOM Designee: _____ Z#_____ Date:_____
Completed: SOM or SOM Designee: _____ Z#_____ Date:_____
Completed: SOM or SOM Designee: _____ Z#_____ Date:_____
Completed: SOM or SOM Designee: _____ Z#_____ Date:_____
Completed: SOM or SOM Designee: _____ Z#_____ Date:_____

2.3 Crafts will DOCUMENT lessons learned on AP-Work-002.11 form, Work Documentation Form.

2.4 NOTIFY MSS-EWMO superintendent of job completion. Complete Post Maintenance Work Package Review for final approvals for this work.

Los Alamos NATIONAL LABORATORY	Facilities Maintenance IWD – (Facility Maintenance Activity Specific Information)		
Revision # **0**			**Activity/Task Title:** **FY15 TA-50-54 ALL LABOR SUPPORT TO SPRAY MICRO BLAZE**
Work Document: (WO#/Task) **00512757-01**			**Planner/Preparer (Name/Z#/Date)** **Robert Maes/088731/1.26.15**
TA: **50/54**	**Building:** **All**	**Room:**	**Additional Location Description:**

***Insert Rows above** for additional Tasks/Steps or attach pages to clearly communicate ESH&Q/S&S hazards and associated controls.*	The RLM, and FOD or FOD Representative (if required or recommended by RLM, e.g. high hazard) approval indicates IWM has been applied appropriately, work is authorized, workers are qualified, work will be performed in accordance with ESH&Q/S&S requirements and the IWD, and facility safety basis, aggregate hazards, and collocated hazards were appropriately included in the hazard analysis and acknowledges completion of a peer review.	**RLM** (Signature/Z#/Date) **Required** _____ **FOD or FOD Representative** (Signature/Z#/Date) **If Required or Recommended by RLM** _____ **SME Review** (Signature/Z#/Date) **If Required** _____ **ESO Review** (Signature/Z#/Date) **If Required** _____
IWD Type ☒ Moderate-Hazard ☐ High-Hazard/Complex ☒ Standing IWD	Date RLM re-approval is required_____ Other Conditions for Re-Approval_____ _____ (Print) Name/Z# of Primary PIC_____ Name/Z# of Alternate PIC_____ Name/Z# of Alternate PIC_____	Classification review completed, if required. _____ Reviewer Signature/Z#/Date

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS call 7-6259

This tool summarizes the requirements for waste asbestos management, the requirements for minimizing air contamination in 40 CFR 61, and the requirements for management of hazardous waste in 40 CFR 260-265.

HAZARDOUS WASTE-CONTAMINATED ASBESTOS

Definitions

Asbestos waste means a solid waste that contains more than 1 percent asbestos.

Friable asbestos material means any material containing more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

Category I non-friable asbestos containing material means asbestos containing packing material, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos.

Category II non-friable asbestos containing material means any material, excluding Category I nonfriable asbestos containing material, containing more than 1 percent asbestos, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand.

Regulated asbestos waste means friable asbestos material; Category I non-friable asbestos containing material that has become friable; Category I non-friable asbestos containing material that will be or has been subjected to sanding, grinding, cutting or abrading; or Category II non-friable asbestos containing material that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of excavation, renovation, demolition, storage, transportation, or while exposed during disposal operations.

General Requirements

Asbestos waste that is also a hazardous waste must meet both the requirements of the National Emission Standards for Hazardous Air Pollutant standard for demolition and renovation (40 CFR 61.145) and the applicable hazardous waste requirements. However, New Mexico Special Waste requirements do not apply to hazardous wastes.

See the air quality and industrial hygiene requirements for asbestos removal and handling for additional requirements.

Generator Training:

See Waste Management Procedure P409.

Characterization

The generator must characterize the material and prepare the waste characterization documentation. If sampling and analysis of waste is required, samples must be taken by qualified and experienced personnel with specialized training. Sampling services can be requested by submitting a Request for Analysis.

This document has been DC reviewed and is unclassified.

Storage

Hazardous wastes must be stored in an SAA or a <90-day accumulation area that has been registered as follows:

- Request that your Waste Management Coordinator (WMC) register your accumulation area.
- The Update, Registered Accumulation/Storage Area form must be completed if the generator, WMC, or status (i.e., decommissioned to active) changes.
- If the area will no longer be used, fill out the Hazardous Waste Storage Area Decommission Form

Incompatible wastes must be segregated from each other and spills must be cleaned up immediately.

See Table 1 for specific accumulation area requirements. Please contact Geri Martinez at 667-6259 if you need additional information.

Packaging

- Regulated asbestos waste (see definition) must be wetted sufficiently to prevent fiber release.
- Packaging must be appropriate for the hazardous component of the waste (contact your WMC).
- If the asbestos has been wetted, the waste must be stored in a leak proof container.
- Prior to shipping, the waste must be packaged in a container approved by the Department of Transportation for the hazardous waste.

Shipping

Contact your WMC to arrange for shipment of hazardous wastes.

This document has been DC reviewed and is unclassified.

Table 1. SAA and <90-Day Accumulation Area Requirements

	SAA	<90-Day Accumulation Area
Volume Limits	• 55-gal. limit for hazardous or mixed waste or • 1-qt. limit for acutely hazardous waste	No volume limits
Labeling	Label must include: • The words Hazardous Waste or a list of major constituents and Danger, Contains Asbestos Fibers. • The Generator's name and address • The accumulation start date (the date the excess began, if volume limits are exceeded) The generator's name and the WSP number or WSP number pending or an inventory log. **Note:** Asbestos labels must be printed in both **English and Spanish.**	Label must include: • The words Hazardous Waste and Danger, Contains Asbestos Fibers. • The accumulation start date (the date the waste was placed or transferred into the area) • The Generator's name and address **Note:** Asbestos labels must be printed in both **English and Spanish.**
Time Constraints	If volume limits are exceeded, transfer the waste to a <90-day accumulation area or a TSDF within three days	Waste must not remain in excess of 90 days from the date originally generated. If a drum contains waste generated on different days, use the earliest date waste was added as the accumulation start date.
Location	• Must be located at or near the point of generation • Must be under the control of the operator of the process generating the waste and have an active process Must be registered with ENV-CP	• Must have a minimum of 2 ft aisle spacing • Must have an emergency/site-specific plan and a contingency plan • Must have emergency and decontamination equipment available Must be registered with ENV-CP
Inspections	Inspections are not required	Inspections, using the RCRA Self-Inspection Inspection Checklist, are required: • Each day wastes are actively managed • A minimum of weekly
Signs/Posting	The area must have a sign with the words Hazardous Waste Satellite Accumulation Area	The area must have a sign with the words Hazardous Waste <90-Day Accumulation Area

This document has been DC reviewed and is unclassified.

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS CALL 7-6259

The tool summarizes the requirements of the 40 CFR 260-265 RCRA regulations.

HAZARDOUS WASTE

Definitions

Hazardous waste: A solid waste that is not excluded from regulation as a hazardous waste and:

- exhibits any of the defined characteristics of hazardous waste (ignitability, corrosivity, reactivity, or toxicity), or
- is a listed hazardous waste (F, K, P or U), or
- is a mixture of solid waste and hazardous waste, or
- is derived from a listed hazardous waste.

General Requirements

This waste category contains generator requirements for hazardous wastes that do not have a separate tool. See other tools for wastes such as Universal Wastes (batteries, mercury-containing equipment, lamps, aerosol cans or pesticides), asbestos contaminated with a hazardous waste, non-empty gas cylinders, etc.

Generator Training

See Waste Management Procedure P409, Section 6.0.

Characterization

The generator must characterize the material and prepare the waste characterization documentation (See ADESH-Tool-111). If sampling and analysis of waste is required, samples must be taken by qualified and experienced personnel with specialized training. Sampling services can be requested by submitting a Request for Analysis. Contact your WMC for assistance.

Storage

- Hazardous wastes must be stored in a Satellite Accumulation Area (SAA) or <90-day accumulation area. Table 1 summarizes the requirements for accumulation areas.
- Accumulation areas must be registered/updated/decommissioned with ENV-CP contact your WMC for assistance.
- Incompatible wastes must be segregated from each other and spills must be cleaned up immediately.

This document has been DC reviewed and is unclassified.

Please contact Geri Martinez at 667-6259 if you need additional information.

Packaging

Hazardous waste must be stored in containers that are in good condition, closed (except when adding or removing waste), and compatible with the waste.

Shipping

Contact your WMC to arrange for shipping of hazardous wastes.

Table 1. SAA and <90-Day Accumulation Area Requirements

	SAA	<90-Day Accumulation Area
Volume Limits	• 55-gal. limit for hazardous or mixed waste **or** • 1-qt limit for acutely hazardous waste	No volume limits
Labeling	Label must include • The words **Hazardous Waste** or **a list of major constituents** • **Accumulation start date** (the date the excess began, if volume limits are exceeded) • **The generator's name and the WPF/WSP number or WPF/WSP number pending** or a log book	Label must include • The words **Hazardous Waste** • The **accumulation start date** (the date the waste was placed or transferred into the area)
Time Constraints	If volume limits are exceeded, transfer the waste to a <90-day accumulation area or a TSDF within three days	Waste must not remain in excess of 90 days from the date originally generated. If a container/drum contains waste generated on different days, use the earliest date waste was added as the accumulation start date.
Location	• Must be located at or near the point of generation • Must be under the control of the operator of the process generating the waste • Must be registered with ENV-CP	• Must have a minimum of 2 ft aisle spacing • Must have an emergency/site-specific plan and a contingency plan • Must have emergency and decontamination equipment available • Must be registered with ENV-CP
Inspections	Inspections are not required	Use the < 90 day Inspection Record Form, inspections are required: • Each day wastes are actively managed • A minimum of weekly

This document has been DC reviewed and is unclassified.

Table 1. SAA and <90-Day Accumulation Area Requirements

	SAA	<90-Day Accumulation Area
Signs/Posting	The area must have a sign with the words **Hazardous Waste Satellite Accumulation Area.**	The area must have a sign with the words **Hazardous Waste <90-Day Accumulation Area.**

This document has been DC reviewed and is unclassified.

SATELLITE ACCUMULATION AREAS

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations/permits, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS CALL 7-6259

This tool summarizes the requirements in 40 CFR 262.34(c), 40 CFR 265 171, 172, and 173 (hazardous wastes)

General

Satellite accumulation areas (SAAs) are one of the less regulated types of hazardous/mixed waste accumulation areas. SAAs are ideal for waste streams producing small amounts of waste and have an on-going process associated with it. SAAs do not require self-inspections.

Note: Legacy/No-Owner waste is not allowed to be stored in an SAA

Registration

Waste accumulation areas must be registered and updated/decommissioned, including SAAs, with ENV-CP. Contact your WMC.

Note: Owner/Operator/Generator must be an active user of the SAA

Requirements

VOLUME

- Limit the amount of hazardous/mixed waste in an SAA to no more than 55 gallons.
- Limit the amount of acutely hazardous waste to 1 quart.

If the 55 gallon-limit or 1 quart limit is exceeded,

- Mark the containers holding the excess accumulation of hazardous waste with the date the excess amount began accumulating.
- Ensure the waste is transferred to a less-than 90-day (<90-day) accumulation area or a hazardous waste treatment, storage, or disposal facility (TSDF) within three calendar days.

CONTAINERS

- Must be closed when waste is not being added or removed.
- Must be made of or lined with materials that are compatible with the waste.
- Must be stored and handled so as to prevent container rupture or leakage.

LABELS

- Containers of hazardous waste must be labeled with the words "Hazardous Waste" or the major constituents (e.g. acetone, methanol).
- Mixed waste containers must be additionally marked "Radioactive Waste."

This document has been DC reviewed and is unclassified.

SAA CONTROL

- To be considered "under the control of the operator of the process generating the waste".
- The area must be at or near the points of generation, have on-going process associated with it and serves a room or a suite of rooms that are adjacent or across a hallway from each other; one SAA cannot serve rooms on different floors.
- To determine if an SAA outside is at or near the point of generation please call Geri Martinez 667-6259.
- Container markings must include:
  - The generator name and WSP/WPF number or a log sheet (inventory system) for each container in the SAA.
  - While WSP/WPF numbers are being acquired, the words "WSP/WPF Number Pending".
- SAAs must be posted "Satellite Accumulation Area."
- SAA operators must ensure that adequate physical **or** administrative controls are in place.

  Physical Controls:
  - Locked doors or cabinet locks to prevent unauthorized access to the SAA.
  - If the area is located outdoors, adequate fences, gates, or locks.

  Administrative controls:
  - Consultation with a WMC on the adequacy of SAA controls and general disposition.
  - Posting of the name and phone number of the SAA primary contact.
  - The maintenance of a current list of authorized SAA users.

This document has been DC reviewed and is unclassified.

This tool instruction cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations/permits, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS CALL 7-6259

This tool instruction summarizes the accumulation time requirements in 40 CFR 262.34, the treatment requirements in 40 CFR 268.7(a)(5), and the training requirements in 40 CFR 265.16.

LESS-THAN 90-DAY ACCUMULATION AREAS

Registration

- Register/update and decommission <90 day accumulation areas with ENV-CP.
- < 90 day accumulation area must be posted with a "< 90 day accumulation sign".

Requirements

CONTAINERS

- Containers must be closed when waste is not being added or removed.
- Containers must be made of or lined with materials that are compatible with the waste.
- Containers must be stored and handled so as to prevent container rupture or leakage.
- Containers with a concentration of volatile organic compounds (VOCs) greater than 500 ppm by weight must be monitored for emissions unless they meet DOT specifications under 49 CFR Part 178.

  Other exclusions from the emission monitoring requirement can be found in 40 CFR 265.1080.
- Containers must be stored and handled so as to prevent container rupture or leakage.
- Maintain a minimum aisle space of 2 ft.

LABELS

- Containers must be labeled or marked "Hazardous Waste."
- Containers must be clearly marked with the accumulation start date (see Time Limits).
- Container labels must be visible for inspection.
- Mixed waste must be additionally marked "Radioactive Waste."

TIME LIMITS

The accumulation start date must start when a container first receives waste or when the container is first received in the accumulation area.

- Within 90 days of acceptance into the area the waste must be transferred to a TSDF.

This document has been DC reviewed and is unclassified.

Submit requests for an extension beyond the 90-day limit to ENV-CP, Geri Martinez (geri@lanl.gov) by day 70.

An extension can be granted by NMED if the extension is needed due to unforeseen, temporary, and uncontrollable circumstances. Provide the following information to ENV-CP:

- Justify why the extension is required and what has been done to-date to move the waste; and
- A written action plan ensuring the waste will be moved before the 30-day extension ends.

SAFETY

The <90 day area must be equipped with the required eyewash and safety showers, spill control equipment, communications and alarm equipment, and emergency equipment for the types of hazards posed at the site. The equipment must be tested and readiness maintained to ensure it operates as required in time of an emergency.

- An Industrial Hygiene/Safety person must determine if equipment is required or if equipment is not required, this determination must be documented in a memo to file.
- Install and maintain all safety equipment as directed by Industrial Hygiene/Safety.

DOCUMENTATION

- Maintain the following documentation at the < 90 day accumulation area:
  - A copy of most recent version of the LANL RCRA Permit Attachment D, the lab wide TSDF Contingency Plan, and
  - A copy of the emergency/site-specific plan.

INSPECTION

- Inspect the accumulation area weekly or on any day waste is actively managed (added, removed, or treated).
- Document the inspection using ENV-CP's Inspection Report Form. Document any action required to correct a deficiency on the IRF.

Issues must be addressed as soon as practical and the IRF must show progress and/or resolutions.

Training

See Waste Management P409, Section 6.0.

This document has been DC reviewed and is unclassified.

NO-OWNER WASTE

This tool cannot establish new requirements; it may only summarize the requirements in federal/state statutes/regulations/permits, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS CALL 7-6259

Definition:

Legacy/No-Owner Waste: Sometimes designated as "orphan waste," this is any material or waste with an unknown origin, history, generator, or process that does not have a defined owner.

General Requirements

Laboratory staff and subcontractors who identify spilled waste or containers of waste, whose ownership cannot be determined, proceed as follows:

1. Serve as first responders:
   - Do not move or contact the waste or waste container.
   - Ensure untrained staff do not approach or contact the waste/waste container.
   - Ensure their FOD's Waste Management Coordinator (WMC) is contacted.

Storage

1. Manage the waste as hazardous until proven otherwise by acceptable knowledge and/or characterization (40 CFR 262.11).
2. Label as hazardous waste and store in a less-than 90-day accumulation area.

This document has been DC reviewed and is unclassified.

GENERAL RADIOACTIVE WASTE MANAGEMENT

This tool cannot establish new requirements; it may only summarize the requirements in federal/state statutes/regulations/permits, DOE Orders, and authorized Laboratory policies.

CLICK HERE TO REPORT ERRORS OR BROKEN LINKS

Signatures

Prepared by: Signature on file Michelle Coriz, WES-WGS	Date: 8/18/10
Approved by: Signature on file Steven J. Singledecker, WES-WGS Group Leader	Date**: 8/18/10
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Classification Review by: Signature on file Deborah Hall, Derivative Classifier	Date: 8/18/10 ☒ Unclassified

**Effective Date

This tool summarizes the requirements in IMP 525, DOE Order 435.1 and the associated manual, DOE M 435.1-1. Triangular (►) bullets identify requirements.

Glossary and Acronyms

All Radioactive Waste

- WMCs must register LLW staging and storage areas and TRU waste storage areas with WES-WGS, but owners/operators/generators must own these areas.
- Radioactive waste generators must ensure their waste is certified for storage and shipment in concurrence with the Waste Management Coordinator.
- This official must be formally designated by facility management, but is usually the WMC. Tools have been developed or are under development for radioactive waste documentation, certification, and shipment for:
  - Low-level waste (LLW)
  - Mixed hazardous low-level waste (MLLW)
  - Transuranic (TRU) waste
  - Mixed hazardous transuranic (MTRU) waste
  - Liquid radioactive waste (low-level and TRU)

Generators and WMCs must employ the appropriate waste-type tool as directed in the waste-type sections below. These tools summarize the requirements for each waste type in DOE Order 435.1, R*adioactive Waste Management*, and the associated DOE Manual 435.1-1, *Radioactive Waste Management* Manual (collectively referred to as DOE O/M 435).

- Radioactive waste-generating facilities must submit Radioactive Waste Management Basis information using the RWMB form and its Continuation Sheet. Contact the Waste Certification Program (WCP) for guidance.
- Unless a formal agreement is in place with DOE, facilities that intend to store radioactive waste for longer than one year must submit a modified RWMB to request a storage extension for the waste as specified in P930-2, *Waste Certification Program,* Section 3.3.

WCP will submit the extension justification to DOE for approval.

Waste with no disposal path may be stored for longer than one year if an approved No Path Package exists for the waste.

Waste generator organizations mischaracterizing waste will be charged for any remediation work required to bring the waste, the site, and/or the facility into compliance with governing regulations.

- Before radioactive waste can be removed from a radiological control area, it must be characterized as nonradioactive or meet the release criteria in Chapter 14, page 99 of P121-1, *Radiation Protection*.

Low-level Waste

The Certification, Documentation, and Shipment of LLW to TA-54 specifies the process from waste generation planning through final disposition.

This document has been DC reviewed and is unclassified.

Follow the requirements summarized in the Radioactive Waste Staging tool and the Radioactive Waste Storage tool.

Mixed Low-level Waste

Radioactive hazardous waste that contains less than 100 nanocuries/gram of alpha-emitting transuranic radionuclides,with a half life greater than 20 years, is mixed low-level waste (MLLW).

The Certification, Documentation, and Shipment of MLLW to TA-54 specifies the process from waste generation planning through final disposition.

Because of its hazardous waste components, MLLW cannot be staged or stored solely in compliance with DOE O/M 435. Follow the requirements summarized in the Satellite Accumulation Area tool, the <90-day Accumulation Area Tool or the Treatment, Storage, or Disposal Area tool.

- Because of the hazardous waste component, MLLW containers must be inspected weekly at a minimum or whenever the waste is actively managed.
- Facilities that must store MLLW in excess of 1-year must:
  1. Before the end of 1 year's MLLW storage, notify LANL's Site Treatment Plan Point of Contact to include the waste in LANL's Site Treatment Plan.
  2. Submit a modified RWMB to request a storage extension for the radiological component of the waste as specified in Waste Certification P930-2, Section 3.3.

TRU Waste

Radioactive waste that contains more than 100 nanocuries/gram of alpha-emitting transuranic radionuclides with a half-life of greater than 20 years is a TRU waste.

Follow the requirements summarized in the Radioactive Waste Storage tool.

Until the TRU Waste Certification, Documentation, and Shipment tool is finalized, ensure the facility's waste storage and shipment certification process is consistent with that specified in the Certification, Documentation, and Shipment of LLW to TA-54.

Mixed TRU Waste

Radioactive RCRA hazardous waste that contains more than 100 nanocuries/gram of alpha-emitting transuranic radionuclides with a half-life of greater than 20 years is mixed TRU waste (MTRU).

Because of the hazardous waste component of MTRU, it cannot be accumulated in a staging area or stored in a radioactive waste storage area; use the Satellite Accumulation Area tool, the <90-day Accumulation Area Tool, or waste management procedures maintained by the TRU Waste Disposition Project.

Until the MTRU Documentation, Certification, and Shipment tool is finalized, ensure the facility's waste storage and shipment certification process is consistent with that specified in the MLLW Certification, Documentation, and Shipment tool.

This document has been DC reviewed and is unclassified.

- Facilities that must store MTRU in excess of 1-year must:
  1. Notify LANL's Site Treatment Plan Point of Contact to include the waste in LANL's Site Treatment Plan.
  2. Submit a modified RWMB to request a storage extension for the radiological component of the waste as specified in Waste Certification P930-2, Section 3.3.

Liquid Low-level Waste

The Radioactive Liquid Waste Generation, Certification, Documentation, and Shipment to TA-50 or TA-53 specifies the process from waste generation planning through final disposition.

Follow the requirements summarized in the Radioactive Waste Staging tool and the Radioactive Waste Storage tool.

Radioactive TSCA Waste (PCBs)

Radioactive waste that contains a substance regulated under the Toxic Substances Control Act (TSCA; most commonly polychlorinated biphenyls–PCBs) must be managed subject to DOE Order 435.1-1 and TSCA.

Use the Radioactive PCB storage tool.

Ensure the facility's waste storage and shipment certification process is consistent with that specified in the MLLW Certification, Documentation, and Shipment tool.

Use of Satellite Accumulation Areas for Radioactive Waste

- PCB radioactive waste cannot be stored in a Satellite Accumulation Area (SAA); it must be stored in a radiological PCB area. MLLW and MTRU waste may be managed in an SAA if the total amount of hazardous waste in the area is less than 55 gal and the total for acutely hazardous (P-listed) waste is less than 1 quart.

Owner/operators of SAAs that are approaching the 55-gal limit must move waste to a less-than 90-day accumulation area (≤90 day area) or at a treatment, storage, or disposal facility .

Planning New Radioactive Waste Streams

All generators that anticipate generating a new waste stream should review the New R&D and New Operations Waste Stream Planning Tool and implement its summary of requirements. This also applies to proposed new research and development laboratory projects or proposed significant modifications to existing waste streams. The waste minimization provisions linked to from this tool must be implemented wherever practicable.

Clean Material from Radiological Areas - GIC

The Green is Clean (GIC) program is designed to reduce the generation of low-level radioactive waste through a waste segregation and verification program based on acceptable knowledge (AK) and screening. Waste generators in radiological control areas segregate clean waste from radiologically contaminated waste, place waste believed to be non-radioactive in Green is Clean

This document has been DC reviewed and is unclassified.

containers, and ship it to TA 54 for GIC verification. Contact Green-is-Clean to arrange for this service.

Storage Prohibitions

- Radioactive waste in storage must not be readily capable of detonation, explosive decomposition, reaction at anticipated pressures and temperatures, or explosive reaction with water. Before storage, pyrophoric materials must be treated, prepared, and packaged to be nonflammable.

Inspections

- MLLW containers must be inspected weekly at a minimum or whenever the waste is actively managed.
- Radioactive waste facilities must inspect their LLW and TRU waste staging and storage areas monthly against the Radioactive Waste Staging Area Monthly Inspection Form or Radioactive Waste Storage Area Monthly Inspection Form.

WCP assesses LANL's radioactive waste staging and storage areas twice a year, at a minimum.

Waste Forecasting

- Upon request of the TSDF, the generator must provide volume projections to each TSDF for the waste applicable to that TSDF. Any generator failing to provide the requested waste forecasting information in a timely manner may be prohibited from transferring waste to the applicable TSDF.

Records

- Retain waste and waste management activity-related documentation pursuant to DOE requirements listed in this document after the "List of Terms."

Training

See the training requirements specified in P409, *Waste Management.*

This document has been DC reviewed and is unclassified.

Radioactive PCB Accumulation Area requirements

This work instruction cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations/permits, DOE Orders, and authorized Laboratory policies.

CALL to REPORT ERRORS 505-667-6259

Signatures

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Approved by: Signature on file Jody Armijo, WM-WMP Acting Group Leader	Date**: 7/8/13
Classification Review by: Signature on file Ellena Martinez, ENV-QPMO	Date: ☒ DUSA ENVPRO

**Effective Date

This work instruction summarizes the requirements in 40 CFR 761.65 for radioactive PCB waste equivalent to or in excess of 50 ppm. For identification of PCB items such as electrical ballasts, compressors, vacuum pumps, capacitors, etc., use the Polychlorinated Biphenyl (PCB) Waste Tool. Triangular (►) bullets identify requirements.

Glossary and Acronyms

- ► WMCs must register radioactive PCB waste accumulation areas with WM-WMP.

For nonradioactive PCB wastes and waste area requirements, see the nonradioactive PCB waste tool.

Training

See the training requirements in P409, *Waste Management*.

Labels and Signs

- ► Include on the approved PCB waste label:
  - ▸ The date of removal from service
  - ▸ The accumulation start date
  - ▸ The PCB item I.D. #

- Include on the radioactive waste label:
  - The word *Radioactive*
  - The container contents
- The area must be evaluated by an RCT and signs must be posted as appropriate.

Storage Time Period Constraints

- If the waste must be stored for longer than one year, contact the Site Treatment Plan Manager.
- Transfer radioactive PCB waste with an identified disposal path to TA-54 within 90 days of the container accumulation start date.

The accumulation start date begins when waste is first put into the container.

Location/Geometry

The facility must:

- Have adequate roof and walls to prevent rain from entering.
- Have a continuous curb around the storage area. The floor and curbing must provide a containment volume equal to at least two times the internal volume of the largest PCB container or 25% of the total internal volume of all PCB containers stored there, whichever is greater.
- Have no drains inside the curbed-in storage area.
- Be located above the 100-yr flood plain.
- Keep written records of accumulation dates and amounts of PCBs stored.
- Maintain a spill prevention, control, and countermeasures (SPCC) plan if liquid PCB waste is stored.

Inspections

- Inspect the facility every 30 days and document the inspections.

Containers

- Must be constructed of polyethylene or stainless steel and must be compatible with the waste (query WM-WMP if other materials must be used.)
- For liquid waste, must be non-leaking
- For non-liquid wastes, must prevent build-up of liquids.
- Must meet nuclear criticality safety requirements (Criticality Safety Program: 667-4789)

LOW-LEVEL WASTE STAGING AREAS

This tool cannot establish new requirements; it may only summarize the requirements in federal/state statutes/regulations/permits, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS Call 7-6259

This tool summarizes the Low-level Waste requirements in DOE O 435.1 and the associated manual, DOE M 435.1-1, Radioactive Waste Management. *Items designated with triangular bullets (►) are LANL implementations to meet requirements by DOE M 435.1-1.*

Glossary and Acronyms

General

The staging seal date begins when the final container for the waste has been filled and sealed. The staging seal date (also known as the rad start date) must then be included on the container. Low-level waste (LLW) can be accumulated in its final container at the point of generation when waste activities are under the control of the generator. Waste can also be accumulated in the final container inside a staging area until filled and sealed. Accumulation points outside of staging areas do **not** have to be registered. There is no set limit to the time waste can be accumulated in its final container as long as this done in a timely manner, given the circumstances of the waste-generating process. Waste streams should be evaluated by the generator annually, for disposition or continued accumulation; as a best management practices. Radioactive waste staging is required per P409, LANL Waste Management.

Stage LLW in a location and manner that minimizes worker exposure and protects the integrity of the waste and waste package for the expected time of storage.

- ► Waste management coordinators (WMCs) must register LLW staging and storage areas and transuranic (TRU) waste storage areas with Waste Management Services (WM-SVS), but owners/operators/generators must own these areas.
- ► LLW may be staged for no more than 90 days pending transport to a LLW storage area or a treatment, storage, and disposal facility (TSDF).
- ► Monthly inspections are required.
- ► Required waste management training is specified in Waste Generation Overview 23264.
- ► Staging and storage areas must be included in an approved Radioactive Waste Management Basis (RWMB) (RWMB form).

Signs and Labels

- ► A waste staging and storage area sign must be posted indicating the Site ID registration number obtained when the site is registered.
- ► TSDFs must register radioactive waste staging areas managing waste generated by the TSDF itself, and these areas must be posted with Waste Staging Area signs within the TSDF generation areas (eg. secondary waste generation, equipment disposal, etc.).

This document has been DC reviewed and is unclassified.

- The area must be evaluated by a radiological control Technician (RCT). The Radiation Protection Programs (RP-PROG) will post signs in the area, as appropriate.
- Signs to meet the requirements of P121-1.0, Radiation Protection, Chapter 7, must be posted. (The RP-1 or WMC may be contacted for Radiation Protection signs.)

Before waste will be accepted by a storage area or TSDF, containers must be labeled, refer to the waste management labels. Additionally, before LLW waste with an added contaminant (non-hazardous) will be accepted by a storage area or TSDF, containers must meet the packaging and labeling requirements summarized in the Asbestos-Containing Material, Polychlorinated Biphenyls, or Beryllium tools.

Waste Characterization

Before LLW can be accepted by a storage area or TSDF, the waste must be characterized as summarized in the Waste Characterization tool.

This document has been DC reviewed and is unclassified.

LOW-LEVEL WASTE AND TRANSURANIC WASTE STORAGE AREAS

This tool cannot establish new requirements; it may only summarize the requirements in federal/state statutes/regulations/permits, DOE Orders, and authorized Laboratory policies.

CLICK HERE TO REPORT ERRORS OR BROKEN LINKS

Signatures

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Approved by: Signature on file Anthony Grieggs, ENV-RCRA Group Leader	Date: 8/25/10
Classification Review by: Signature on file Deborah Hall, Derivative Classifier	Date: 8/18/10 ☒ Unclassified

**Effective Date

This tool summarizes the requirements in DOE O 435.1 and the associated manual, DOE M 435.1-1, Radioactive Waste Management. *Items designated with triangular bullets (►) are required by DOE M 435.1-1.*

Glossary and Acronyms

This tool summarizes the requirements for low-level waste (LLW) and transuranic (TRU) waste storage. If the waste is staged for longer than 90 days, it becomes subject to the requirements summarized in this tool.

Radwaste Management Program

Organizations that generate radioactive waste must meet the applicable requirements in DOE Order 435.1 and the associated manual, DOE M 435.1-1. These organizations must document the LLW/TRU waste management process:

- WMCs must register LLW staging and storage areas and TRU waste storage areas with WES-WGS, but owners/operators/generators must own these areas.
- Generation planning: DOE Manual 435.1-1: *Prior to waste generation, planning shall be performed to address the entire life cycle for all transuranic/low-level waste streams.* This includes waste minimization strategy evaluation using the waste minimization tool and beginning the Waste Profile Form process.
- Generation: The process of generator coordination with radiation control technicians to generate the waste.
- Characterization: Waste analysis, acceptable knowledge package completion, and Waste Disposal Request/Transuranic Waste Storage Request (WDR/TWSR) completion and submittal, as appropriate
- Certification for storage: How the organization's LLW/TRU waste is evaluated against the TA-54, Area G waste acceptance criteria for acceptance into your organization's LLW storage areas or for acceptance after staging by TA-54
- Certification for shipment: How LLW/TRU is certified for shipment
- Documentation: A listing of LLW/TRU records and how they are retained, the retention period, and how documents are maintained for retrievability and auditability

WMCs assigned to each LLW storage area-owning organization serve as the LLW on-site certifying official for the purposes of DOE M 435.1-1.

- Each waste storage area-owning organization must implement a quality assurance program compliant with the requirements in DOE O 414.1B, *Quality Assurance*.
- If no disposal path exists for a specific waste stream, the prospective generator must have DOE approval for waste generation.
- If inventory limits are required by the storage area, the facility must ensure they are not exceeded.
- Each storage area must have an approved Radioactive Waste Management Basis (RWMB; RWMB form, RWMB continuation form) and must be registered with WS-WA.
- Personnel must be trained in accordance with the requirements in P409, *Waste Management*.
- The facility must implement and document the inspection schedule in the facility's Radioactive Waste Management Basis.
- Radioactive waste storage areas must be inspected monthly against the WCP Inspection Form.

This document has been DC reviewed and is unclassified.

- Waste packages cannot be stored for longer than one year. If storage must exceed this limit, the facility must re-submit its RWMB and request a storage extension by following the process outlined in Waste Certification procedure P930-2, Section 3.3.

Storage Areas

- A Waste Storage Area sign must be posted indicating the Site ID registration number obtained when the site is registered.
- Radioactive waste received from generating facilities by Treatment, Storage, or Disposal (TSD) facilities does not require Waste Storage Area signs but the waste in these areas must be included in the RWMB.
- TSDs must register radioactive waste storage areas managing waste generated by the TSD itself and these areas must be posted with Waste Storage Area signs.
- The storage area must be evaluated by an RCT and signs must be posted as appropriate.
- Signs to meet the requirements of P121, *Radiation Protection*, Chapter 7 must be posted. (The RP-1 or your waste management coordinator may be contacted for RP signs.)

Containers and Labels

- Waste must comply with the requirements in the LANL WAC for LLW packaging and labeling and TRU waste packaging and labeling.
- Asbestos and beryllium waste have additional labeling and container requirements.

This document has been DC reviewed and is unclassified.

This work instruction cannot establish new requirements; it may only summarize the requirements in federal/state statutes/regulations/permits, DOE Orders, and authorized Laboratory policies.

This work instruction summarizes the requirements in Chapter IX.B of the March 1, 2005 Order on Consent, DOE O 435.1 and the associated manual, DOE M 435.1-1, and Radiation Protection P121. Triangular bullets (▸) are LANL implementations to meet requirements from the sources above. Diamond (♦) bullets identify requirements resulting from LANL's internal Audits and Assessments findings. Open circle bullets (○) identify LANL best management practices.

CLICK HERE TO REPORT ERRORS OR BROKEN LINKS

POTENTIALLY RADIOACTIVE OR MIXED INVESTIGATION-DERIVED WASTE

Glossary and Acronyms

1. Purpose

This tool supports generators of investigation-derived waste (IDW). IDW-generating activities at Los Alamos National Laboratory (LANL) typically involve environmental remediation and monitoring at Environmental Restoration (ER) Program sites or decontamination and demolition (D&D) sites. These wastes include potentially contaminated soil and debris, monitoring-well-produced water, and excess sample material (Consent Order IX.B.5).

2. Potentially Mixed (Radioactive and Hazardous-Mixed Low-Level Waste) IDW

These provisions stem from the Resource Conservation and Recovery Act waste accumulation requirements in 40 Code of Federal Regulations 262.34. When knowledge of process (KOP) presents the reasonable possibility that IDW is radioactive and contains hazardous waste, the waste must initially be managed in a satellite accumulation or <90-day area:

- When samples are sent for analytical determination, the hazardous waste label is annotated "Pending Analysis."
- Less-than 90-day accumulation areas that store mixed waste must be included in their facilities' Radioactive Waste Management Basis report.
- If analysis shows the material is not mixed waste, hazardous waste labels are removed from the container.

3. Potentially Radioactive (Low-Level Waste) IDW

These provisions stem from the exposure minimization requirements in U.S. Department of Energy Manual 435.1-1, Chapter IV.N.3.

KOP presents a reasonable possibility that a waste is radioactive (and known not to be mixed waste):

- When waste accumulation begins, mark container "Pending Radiological Analysis" and manage in a registered radioactive waste staging area.

- When samples are sent for radiological analysis, the container marking is annotated "Pending Radiological Analysis."

- If waste is known to be radioactive (derived from a radiological posted area or analysis confirms):
  - The waste must be accumulated in a staging area.
  - Waste must be labeled "Radioactive waste."
  - Radiation Protection Program (RP-Programs) must be notified for waste survey and verification of correct labeling.

  NOTE: RP-Programs controls and is responsible for correct tagging and labeling of radioactive materials.

- When the container is full or has received the amount of IDW intended, the container must be managed in a registered area and timely disposal must be pursued.

- The staging seal date is the day the container is full or has received the amount of IDW intended and the container is sealed; the 90-day staging period begins on this day.

- After the container has received the intended amount of IDW, it must be managed in a controlled area, such as a registered radioactive waste staging or storage area.

- Radioactive waste staging and storage areas must be registered with the Waste Certification Program (WCP).

- Owners of staging or storage areas must inspect them against the WCP Monthly Inspection Forms.

- Radioactive waste staging and storage areas must be included in their facilities' Radioactive Waste Management Basis report.

If a waste streams meets land application and the IDW is not radioactive waste, the media can be removed from the container. Questions for questions regarding land application contact ENV-CP.

Note: For requesting authorized release limits for industrial landfill disposition of materials meeting the 1-mrem annual dose limit in compliance with DOE Order 458.1, *Radiation Protection of the Public and the Environment;* refer to *P411, Authorized Release Limits Proposal Process*.

This document has been DC reviewed and is unclassified.

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS Call 7-6259

This tool summarizes the requirements management of lead or gel-cell batteries as Universal Waste New Mexico Hazardous Waste Management Regulations, 20.4.1.1000, which adopts 40 CFR Part 273, Standards for Universal Waste Management.

LEAD ACID/GEL CELL BATTERIES MANAGED AS UNIVERSAL WASTE (40 CFR PART 273)

Definitions

Battery means a device consisting of one or more electrically connected electrochemical cells that are designed to receive, store, and deliver electric energy. An electrochemical cell is a system consisting of an anode, cathode, and an electrolyte, plus such connections (electrical and mechanical) as may be needed to allow the cell to deliver or receive electrical energy. The term "battery" also includes an intact, unbroken battery from which the electrolyte has been removed.

Lead Acid Batteries (e.g., automobile batteries) have a core of elemental lead that uses a liquid acid electrolyte. Acid-based batteries often use sulphuric acid as the major component of the electrolyte. These batteries are hazardous wastes that are characteristic for lead and corrosivity.

Gel Cell Batteries are sealed lead acid batteries. A gel cell battery's electrolyte is in a gelatin form and is absorbed into the plates. The battery is then sealed with epoxy. These batteries are hazardous wastes that are characteristic for lead.

General Requirements

Lead Acid/Gel Cell batteries that have no radioactive or chemical contamination should be recycled. Remove batteries from equipment and reuse them, if possible. If they cannot be reused:

- Segregate lead acid/gel cell batteries from other types of batteries and other materials.
- Ensure that each battery cell is not breached and that it remains intact and closed. If the cell is breached it needs to be in a closed plastic container.
- Although it is not recommended, electrolyte may be removed from batteries. Cells that are opened to remove electrolyte must be immediately closed after fluid removal. The electrolyte and other solid waste generated as a result of this process will be newly generated and must be characterized. If hazardous, it must be managed as a hazardous waste (see "Hazardous Waste ADESH-Tool 206").

Training

See Waste Management Procedure P409, Section 6.0.

This document has been DC reviewed and is unclassified.

Characterization

Laboratory-wide Waste Stream Profile (WSP) number 15651 (Universal Waste Batteries, see Lab-Wide WSP) may be used for batteries. If this WSP is not applicable, complete a new WSP. If sampling and analysis of waste is required, samples must be taken by qualified and experienced personnel with specialized training. Sampling services can be requested by submitting a Request for Analysis to the Waste Management Services Group. Contact your Waste Management Coordinator (WMC) for assistance.

Storage

The batteries must be stored in a Universal Waste Area (UWA) that is registered with ENV-CP:

- Register your accumulation area online.
- The Update Registered Accumulation/Storage Area form must be completed if the generator, WMC, or status (i.e., decommissioned to active) changes.
- If the area will no longer be used, fill out the Hazardous Waste Storage Area Decommissioning Form.

Other UWA requirements are shown in Table 1.

Packaging

The batteries must be shipped in a Department of Transportation-approved container that is compatible with the batteries (non-metallic). Contact your WMC to determine the type of container required.

Transportation

Your WMC will prepare a Waste Disposition Request (WDR). The WDR must be submitted within 6 months of placing a battery in a UWA.

This document has been DC reviewed and is unclassified.

Table 1: UWA Requirements

Volume Limits	No volume limits unless there are safety issues
Storage Containers	Batteries must be stored in a closed, non-metallic container compatible with the batteries
Container Labeling	Container labels must include • The accumulation start date • The words **Universal Waste** and **Batteries**
Time Constraints	One-year storage limit
Location	• Must be set up in a registered storage location • Need not be at the point of generation
Inspections	Inspections are not required
Signs/Posting	The accumulation area must have a sign

This document has been DC reviewed and is unclassified.

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS, Call 7-6259

This tool summarizes the waste management requirements in 40 CFR Part 273.

OTHER BATTERIES

Definitions

Battery means a device consisting of one or more electrically connected electrochemical cells, which is designed to receive, store, and deliver electric energy. An electrochemical cell is a system consisting of an anode, cathode, and an electrolyte, plus such connections (electrical and mechanical) as may be needed to allow the cell to deliver or receive electrical energy. The term "battery" also includes an intact, unbroken battery from which the electrolyte has been removed.

The most common types of Other Batteries found at LANL are:

Silver Oxide Batteries use silver oxide as the positive electrode and zinc as the negative electrode, with an electrolyte of either sodium or potassium hydroxide. They are mainly used in low-drain applications.

Mercuric Oxide Batteries are a type of alkaline primary cell with a positive electrode of mercuric oxide (often with manganese dioxide), a negative electrode of metallic zinc and either potassium or sodium hydroxide as electrolyte.

Lithium-ion Batteries use a negative electrode of lithium-cobalt dioxide and a positive electrode of carbon (coke or graphite), with an electrolyte of a lithium salt dissolved in an organic solvent.

Nickel-Cadmium (NiCad) Batteries use nickel hydroxide as the positive electrode, cadmium/cadmium hydroxide as the negative electrode and potassium hydroxide as the electrolyte.

Nickel-Metal Hydride (Ni-MH) Batteries are rechargeable power sources often used in portable computers. The nickel metal hydride battery has nickel and metal hydride plates with potassium hydroxide as the electrolyte.

Please see your Waste Management Coordinator (WMC) for waste requirements for other types of batteries.

General Requirements

Remove batteries from equipment. Reuse if possible. If they cannot be reused:

- Manage non-radioactive Other Batteries as Universal Waste (40 CFR Part 273).
- Ensure that each battery cell is not breached and that it remains intact and closed. If the cell is breached it needs to be placed in a closed plastic container.
- Although it is not recommended, electrolyte may be removed from batteries. Cells that are opened to remove electrolyte must be immediately closed after fluid removal. The electrolyte and other solid waste generated as a result of this process will be

newly generated and must be characterized. If hazardous, it must be managed as a hazardous waste (see "Hazardous Waste, ADESH-Tool 206").

Generator Training

See Waste Management Procedure P409, Section 6.0.

Characterization

Laboratory-wide Waste Stream Profile (WSP) number 15651 (Universal Waste Batteries, see Lab-Wide WSP) may be used for batteries. If this WSP is not applicable, complete a new WSP in accordance with WSP instructions provided by Waste Services. If sampling and analysis of waste is required, samples must be taken by qualified and experienced personnel with specialized training. Sampling services can be requested by submitting a Request for Analysis to the Waste Management Services Group. Contact your WMC for assistance.

Storage

Waste batteries must be stored in a Universal Waste Area (UWA) that is registered with ENV-CP:

- Register your accumulation online using the Registration Form.
- The Update Registered Accumulation/Storage Area form must be completed if the generator, WMC, or status (i.e., decommissioned to active) changes.
- If the area will no longer be used, fill out the Hazardous Waste Storage Area Decommissioning Form.

UWA requirements are shown in Table 1.

Packaging

The batteries must be shipped in a Department of Transportation-approved container that is compatible with the batteries (non-metallic). Contact your WMC to determine the type of container required.

Transportation

Your WMC will prepare a Waste Disposition Request (WDR). The WDR must be submitted within 6 months of placing a battery in a UWA.

Table 1. UWA Requirements

Volume Limits	No volume limits unless there are safety issues
Storage Containers	Batteries must be stored in a closed, non-metallic container compatible with the batteries
Container Labeling	Container labels must include • The accumulation start date

	• The words **Universal Waste** and **Batteries**
Time Constraints	One-year storage limit
Location	• Must be set up in a registered storage location • Need not be at the point of generation
Inspections	Inspections are not required
Signs/Posting	The accumulation area must have a sign

This document has been DC reviewed and is unclassified.

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS Call 7-6259

This tool summarizes the requirements management of lamps as Universal Waste, New Mexico Hazardous Waste Management Regulations, 20.4.1.1000, which adopts 40 CFR Part 273, Standards for Universal Waste Management.

LAMPS MANAGED AS UNIVERSAL WASTE

Definitions

Universal Waste Lamps are the bulb or tube portion of electric lighting devices that have a hazardous component (usually mercury and occasionally lead). Examples of common universal waste electric lamps include, but are not limited to, fluorescent lights, high intensity discharge, neon, mercury vapor, high pressure sodium, and metal halide lamps.

General Requirements

Lamps that are classified as hazardous waste that have no radioactive or chemical contamination should be managed as Universal Waste. It is suggested, although not required, that non-hazardous lamps also be managed as universal waste. This will ensure that hazardous lamps are not inappropriately identified as non-hazardous.

Note: Crushing of lamps/bulbs is not permitted at the Laboratory.

Generator Training

See Waste Management Procedure P409, Section 6.0.

Characterization

Laboratory-wide Waste Stream Profile (WSP) #34645 (Universal Waste Lamps generated throughout LANL) can be used for most mercury lamps. Laboratory-wide WSP #34647 can be used for incandescent bulbs. If these WSPs are not applicable, prepare a WSPs in accordance with the WSP instructions. If sampling and analysis of waste is required, samples must be taken by qualified and experienced personnel with specialized training. Sampling services can be requested by submitting a Request for Analysis.

Storage

The lamps must be stored in a UWA that is registered with the Environmental Compliance Programs (ENV-CP):

- Register your accumulation area (Registration Form).
- The Update Registered Accumulation/Storage Area form must be completed if the generator, WMC or status (i.e., decommissioned to active) changes.

This document has been DC reviewed and is unclassified.

- If the area will no longer be used, fill out the Hazardous Waste Storage Area Decommissioning Form.

Other UWA requirements are shown in Table 1. Note that a disposal request must be submitted to waste operations within 6 months of placing a lamp in a UWA. Your WMC will prepare the disposal request.

Packaging

The lamps must be shipped in a Department of Transportation-approved container that is compatible with the lamps. If the manufacturer's original box is used as packaging for waste bulbs, all openings must be sealed with tape.

Transportation

Your WMC will prepare a Waste Disposal Request (WDR) shipping request. The WDR must be submitted within 6 months of placing a lamp in a universal storage area.

Table 1: UWA Requirements

Volume Limits	No volume limits unless there are safety issues
Storage Containers	Lamps must be stored in a closed container compatible with the lamps.
Container Labeling	Container labels must include • The accumulation start date • The words **Universal Waste** and **Lamps**
Time Constraints	One-year storage limit
Location	• Must be set up in a registered storage location • Need not be at the point of generation
Inspections	Inspections are not required
Signs/Posting	The accumulation area must have a sign with the words **Universal Waste Area**

This document has been DC reviewed and is unclassified.

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS Call 7-6259

The tool summarizes the requirements of 40 CFR 273.

MERCURY-CONTAINING EQUIPMENT MANAGED AS UNIVERSAL WASTE

Definitions

Mercury-Containing Equipment (MCE) includes devices, items, or articles that are hazardous waste (D009) due to the presence of elemental mercury. The mercury must be "integral" to the function of the equipment. Integral means that the mercury must be part of the function of the device. Some commonly recognized MCE are thermostats, barometers, manometers, flow meters, thermometers, pressure gauges, relays, and switches. Batteries and lamps are not MCE.

Ampule means an airtight vial made of glass, plastic, metal, or any combination of these materials.

General Requirements

Equipment containing mercury should be handled as Universal Waste. Table 1 lists some typical MCE. The following are guidelines for identifying Universal Waste MCE:

- If equipment has been contaminated by an external source of mercury, it is not Universal Waste MCE.
- If the equipment is contaminated by a leak from an internal source of mercury, it can qualify as Universal Waste MCE if the entire piece of equipment is containerized. However, if the piece of equipment is large, it should be decontaminated rather than treating it as MCE. Materials generated from the cleanup of equipment are not MCE.
- MCE does not include any mercury or waste generated from cleaning up spills or leaks, equipment contaminated from an outside source of mercury, and/or other mercury wastes.

Contact the Geri Martinez at 667-6259 for assistance in determining whether your equipment meets the definition of MCE.

There is no requirement to remove ampules/housings containing mercury; the entire piece of equipment can be managed as MCE. However, generators may remove ampules or other housings (which must be immediately sealed) containing mercury and manage them as Universal Waste MCE. Uncontaminated equipment from which the ampule/housing has been removed would no longer be considered MCE. Once the mercury is removed, the remaining equipment is no longer MCE and the generator must make a waste determination whether it is hazardous for a characteristic or listed constituent other than mercury and manage it accordingly.

This document has been DC reviewed and is unclassified.

There are a number of requirements identified in 40 CFR 273.33 that apply to generators removing ampules/housings, including:

- Secondary containment
- Spill clean-up systems
- Ventilation requirements
- Emergency procedures
- Ampule/housing sealing, storage, and packing.

To ensure these provisions are adequately implemented, the generator must call 667-6259 before beginning removal operations.

Characterization

For Universal Waste MCEs, a Waste Stream Profile (WSP) must be prepared. If sampling and analysis of waste is required, samples must be taken by qualified and experienced personnel with specialized training. Sampling services can be requested by submitting a Request for Analysis.

Training

See Waste Management Procedure P409, Section 6.0.

Storage

The Waste must be stored in a Universal Waste Accumulation Area that is registered with ENV-CP:

- Register your accumulation area.
- The Update Registered Accumulation/Storage Area form must be completed if the generator, storage area location, WMC, or status (i.e., decommissioned to active) changes.
- If the area will no longer be used, fill out the Hazardous Waste Storage Area Decommissioning Form.

Universal Waste Accumulation Area requirements are shown in Table 2.

Packaging

Contact your WMC.

Transportation

Your WMC will prepare a Waste Disposition Request (WDR). The WDR must be submitted within 6 months of placing MCE in a universal accumulation area.

This document has been DC reviewed and is unclassified.

Table 1. Typical Universal Waste MCE

Category	Example of Equipment/Devices	Reported Mercury Content (grams/device)
Thermo-meters	Clinical thermometers (oral/rectal/baby and basal temperature), laboratory thermometers, industrial air/water temperature thermometers, veterinary thermometers, Mason's Hygrometers, sling psychrometers	2 – typical) 0-5-0.61 – fever) 2.25 – basal) 3-10 – laboratory) 5 – veterinary) 5.56-19.78 – industrial)
Switches and Relays	Tilt, float switches, silent light switches, mercury reed switches, metal switches, telephone switches, glass switches, alarm switches, limit switches, mercury-wetted relays, displacement plunger relays, reed relays, flame sensors, pilot sensors, gas safety valves, rectifiers, ignition tubes, G-sensors, oscillators, phanatrons, proximity sensors, capacitors	3.5 – typical 2.6 – silent light 3.5-3,600 – industrial 1 – float 0.5-1 – automotive light 2 – chest freezer light 2 – washing machine light 3 – anti-lock brake 1-2 – ride control system 0.14-3 – mercury reed 160 – displacement relay 2.5 – flame sensor
Gages and Meters	Manometer, barometer, sphygmomanometers, vacuum meters, flow, temperature gages, pressure relief gauges, water treatment pressure gages, regulators, airway controllers, permeters, 330 – hagenmeters, ring balances	330 – sphygmomanometer 395 – barometer 85-355 – typical manometer 91,000 – large manometer
Other equipment or devices	Tubes/dilators (gastrointestinal tubes, esophageal tubes, cantor tubes, Miller Abbot tubes, feeding tubes) recoil suppressors, variable force counterweight wheels, printed circuit boards	170 – recoil suppressor 1,000 – dilator

Sources: Lake Michigan Forum (1999), Michigan Mercury Pollution Prevention Task Force (1996), The Pollution Prevention Partnership and the Milwaukee Metropolitan sewerage District (1997), EAIC and RTI (1999), US EPA (1992), US EPA (1997), WSQAG (1995), and Wisconsin Department of Natural Resources (1997)

This document has been DC reviewed and is unclassified.

Table 2. Universal Waste MCE Accumulation Area Requirements

Volume Limits	No volume limits unless there are safety issues
Storage Containers	• Leaking MCE, MCE with open original housings (e.g., barometer or manometer), and ancillary equipment (e.g., valves) must be managed in containers that will not allow escape of mercury to the environment (including volatilization and spills) • Ampules and housings of mercury with airtight seals (open housings must be sealed immediately upon removal from MCE) must be managed to minimize breakage and must be managed in containers that prevent the escape of mercury if breakage does occur • Containers must be closed, structurally sound, compatible with the contents of the device, and designed to prevent the escape of mercury into the environment
Container Labeling	Container labels must include • The accumulation start date • The words **Universal Waste Mercury-Containing Equipment**
Time Constraints	One-year storage limit
Location	• Must be set up in a register storage location • Need not be at the point of generation
Inspections	Inspections are not required
Signs/Posting	The accumulation area must have a sign.

This work instruction cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS Call 7-6259

PESTICIDES

Definitions

Pesticides means a substance used for preventing, destroying, repelling, or mitigating any pest, or used as a plant regulator, defoliant or desiccant. It does not include new animal drugs or animal feed that contains pesticides.

General Requirements

Waste pesticides should never be disposed in the sanitary landfill trash. They may be hazardous waste if they are listed or characteristic hazardous wastes, universal waste if the pesticides have been recalled, or New Mexico Special Waste (See ADESH-Tool 111 "Waste Characterization" and ADESH-Tool 106 "Hazardous Waste". If you have waste pesticides, contact your Waste Management Coordinator (WMC) or the Geri Martinez at 667-6259 for assistance in determining how the pesticides are regulated.

This document has been DC reviewed and is unclassified.

AEROSOL CANS WITH REMAINING PRODUCT

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS Call 7-6259

This tool summarizes the requirements in 20.4.1.1001 NMAC.

Definitions

Aerosol can: A container in which gas under pressure is used to aerate and dispense any material through a valve in the form of a spray or foam.

General Requirements

- Aerosol cans that do not meet the definition of empty (see ADESH-Tool 717 "Empty Aerosol Cans") are considered universal waste.
- Empty aerosol cans may be disposed of as solid waste (see ADESH-Tool 717 Empty Aerosol Cans). However, some generators choose to handle empty aerosol cans as universal waste and the requirements defined in this document apply.
- Universal waste must not be radioactively-contaminated.

Generator Training

See Waste Management Procedure P409, Section 6.0.

Characterization

If a generator has chosen to handle empty aerosol cans as universal waste, use the Laboratory-wide Waste Stream Profile #15618. Use the Laboratory-wide WPF #40711 for new and unused product (aerosol cans with product). If sampling and analysis of waste is required, samples must be taken by qualified and experienced personnel with specialized training. Sampling services can be requested by submitting a Request for Analysis.

Storage

The waste aerosol cans must be stored in a Universal Waste accumulation area that is registered with the ENV-CP:

- Register your accumulation area using the Registration Form.
- The Update Registered Accumulation/Storage form must be completed if the generator, WMC, or status (i.e., decommissioned to active) changes.
- If the area will no longer be used, fill out the Hazardous Waste Storage Area Decommissioning Form.

This document has been DC reviewed and is unclassified.

- Universal waste cannot be accumulated for more than one year.
- Waste containers must be closed and not leaking.
- Universal waste must be stored in containers that are in good condition and compatible with the waste.
- The Universal Waste Accumulation Area must have an approved sign.

Please contact Geri Martinez at 667-6259 if you need additional information.

Labeling

- The words "Universal Waste – Aerosol cans".
- The accumulation start date (the date a waste item was first put into the container).

Packaging

The cans must be packaged in a DOT-compliant container for shipping.

Shipping

Contact your WMC to arrange for shipping.

This document has been DC reviewed and is unclassified.

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS Call 7-6259

This tool summarizes the New Mexico Special Waste (NMSW) requirements in the New Mexico Solid Waste Management Regulations as defined at §20.9.2.7.

NEW MEXICO SPECIAL WASTE: PETROLEUM-CONTAMINATED SOIL

Definitions

Petroleum contaminated soils are soils that have a sum of benzene, toluene, ethyl benzene, and xylene isomer concentrations of greater than 50 milligrams per kilogram (mg/kg), or benzene individually greater than 10 mg/kg, or a total petroleum hydrocarbon concentration of greater than 100 mg/kg.

General Requirements

Ensure that the soil is not a hazardous waste (e.g., toxicity characteristic for benzene, ignitable, or contaminated with another hazardous waste) or radioactive material. Note that petroleum-contaminated media and debris are exempt from regulation as hazardous waste if 1) they exhibit a characteristic of D018-D043 only and 2) are subject to the Part 280 underground storage tank corrective action regulations [40 CFR §261.4(b)(10)]. In addition, check that it is not contaminated with polychlorinated biphenyls (PCBs), asbestos, or other material of concern such as beryllium. These materials may have other handling requirements. Contact your Waste Management Coordinator (WMC) or Geri Martinez at 667-6259 to determine whether the soil is a NMSW and how it should be handled.

Petroleum (or suspect) contaminated soil must be tested, at a minimum, for benzene, toluene, xylene, ethyl benzene, and total petroleum hydrocarbon concentration. The receiving facility may require other analyses. Uncontaminated soils cannot be mixed with contaminated soils.

The waste must meet NMSW packaging, labeling, and storage requirements (see below). If disposed in New Mexico, the waste must be placed in a landfill licensed to dispose NMSW. When shipped in New Mexico, the waste must be accompanied by a NMSW Manifest.

Generator Training

See Waste Management Procedure P409, Section 6.0

This document has been DC reviewed and is unclassified.

Characterization

The generator must prepare a Waste Stream Profile (WSP). For petroleum-contaminated soils, analysis is required for benzene, toluene, xylene, ethyl benzene, total petroleum hydrocarbon concentration, a paint filter test if liquids are present, and/or other constituents required by the receiving facility. A minimum of one representative sample should be taken for each 100 cubic yards of contaminated soil. Waste samples must be taken by qualified and experienced personnel with specialized training. Sampling services can be requested by submitting a Request for Analysis.

Storage

Petroleum contaminated soil must be stored in a NMSW accumulation area that is registered as follows:

- Request that your WMC register your NMSW area online using the Registration Form.
- The Update Registered Accumulation/Storage Area form must be completed if the generator, storage area location, WMC or status (i.e., decommissioned to active) changes.
- If the area will no longer be used, fill out the Hazardous Waste Storage Area Decommissioning Form.

See Table 1 for NMSW accumulation area requirements

Petroleum contaminated soils may be stored temporarily on-site in a bermed area on an impermeable liner or in a manner that does not contaminate ground water, surface water, air, or uncontaminated soil. However, the method of storage must be approved by the New Mexico Environment Department (NMED). Please contact Geri Martinez 667-6259 if you need additional information.

Packaging

Petroleum contaminated soil should be contained in a covered (impermeable) container (e.g., a dumpster or metal drums), unless NMED has approved another storage method.

Shipping

Contact your WMC to arrange for shipping of hazardous wastes. If disposed in New Mexico, the waste must be sent to a permitted Special Waste Landfill. NMSW shipped within New Mexico must be accompanied by a NM Special Waste Manifest.

This document has been DC reviewed and is unclassified.

Table 1. NMSW Accumulation Area Requirements

Volume Limits	No volume limits
Labeling	Each container must have a NMSW Label, which includes: • The words **New Mexico Special Waste** • A list of container contents and their hazards (e.g., inhalation, ingestion, dermal or other hazards identified in documents such as Material Safety Data Sheets). • The container must be labeled with two dates: 1. The date the container is deemed full and placed into storage (initial date.) 2. The date the characterization is complete based on analytical data (final date.) In some cases (e.g. acceptable knowledge) the initial and final date may be the same. Every container stored must at least be labeled with the initial date (i.e., when it was deemed full). • The generator's name and address.
Time Constraints	Waste must not remain in excess of 90 days.
Inspections	Inspections are not required but may be conducted as a best management practice to ensure labels and containers are intact and time limits have not been exceeded.
Signs/Postings	The area must have a sign with the words: **Special Waste.**

This document has been DC reviewed and is unclassified.

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS Call 7-6259

This tool summarizes the New Mexico Special Waste (NMSW) requirements in the New Mexico Solid Waste Management Regulations as defined at §20.9.2.7?.

NEW MEXICO SPECIAL WASTE SPILL CLEANUP MATERIALS

Definitions

New Mexico Special Waste (NMSW) Spill Cleanup Materials are residues (that are not hazardous, radioactive, PCB-regulated, or other regulated wastes) resulting from cleanup of a spill of a chemical substance or commercial product that, unless specially handled or disposed, may harm the environment or endanger the public health or safety.

General Requirements

Ensure that the material is not contaminated with hazardous waste or radioactive material. In addition, check that it is not contaminated with polychlorinated biphenyls (PCBs), asbestos, or other material of concern such as beryllium, or petroleum. These materials may have other handling requirements. Contact your Waste Management Coordinator (WMC) or Geri Martinez at 667-6259 to determine whether the spill cleanup materials are a NMSW and how they should be handled.

NMSW Spill Cleanup Materials must meet NMSW packaging, labeling, and storage requirements (see below). If disposed in New Mexico, the waste must be placed in a landfill licensed to dispose NMSW. When shipped in New Mexico, the waste must be accompanied by a NMSW Manifest.

Generator Training

See Waste Management Procedure P409, Section 6.0.

Characterization

Spill cleanup materials can be analyzed but it always remains a Special Waste. Generators of NMSW must prepare a WSP in accordance with the WSP instructions. If sampling and analysis of waste is required, samples must be taken by qualified and experienced personnel with specialized training. Sampling services can be requested by submitting a Request for Analysis.

Storage

NMSW Spill Cleanup Materials must be stored in a NMSW accumulation area that is registered with ENV-CP, as follows:

- Register your NMSW area online using the Registration Form.

- The Update Registered Accumulation/Storage Area form must be completed if the generator, storage area location, WMC, or status (i.e., decommissioned to active) changes.
- If the area will no longer be used, the WMC must fill out the Hazardous Waste Storage Area Decommissioning Form.

See Table 1 for NMSW accumulation area requirements. Please contact the Geri Martinez at 667-6259 if you need additional information.

Packaging

NMSW Spill Cleanup Materials must be stored in a closed container compatible with the waste.

Shipping

Contact your WMC to arrange for shipping of NMSW. If disposed in New Mexico, the waste must be sent to a permitted Special Waste Landfill. NMSW shipped within New Mexico must accompanied by a NM Special Waste Manifest.

This document has been DC reviewed and is unclassified.

Table 1. NMSW Accumulation Area Requirements

Volume Limits	No volume limits
Labeling	Each container must have a NMSW Label, which includes: • The words **New Mexico Special Waste** • A list of container contents and their hazards (e.g., inhalation, ingestion, dermal or other hazards identified in documents such as Material Safety Data Sheets). • The container must be labeled with a date: 1. The date the container is deemed full and placed into storage. The name and address of the generator.
Time Constraints	Waste must not remain in excess of 90 days.
Inspections	Inspections are not required but may be conducted as a best management practice to ensure labels and containers are intact and time limits have not been exceeded.
Signs/Postings	The area must have a sign with the words: **Special Waste**.

This document has been DC reviewed and is unclassified.

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS Call 7-6259

This tool summarizes EPA's waste antifreeze guidance.

ANTIFREEZE FOR RECYCLE

Definitions

Antifreeze: A substance, often a liquid such as ethylene glycol, propylene glycol, or alcohol mixed with another liquid to lower its freezing point.

Ethylene glycol: A colorless syrupy alcohol, $HOCH_2CH_2OH$, used as an antifreeze in cooling and heating systems.

Propylene glycol: A colorless viscous hygroscopic liquid, $CH_3CHOHCH_2OH$, used in antifreeze solutions, in hydraulic fluids, and as a solvent.

Note: Antifreeze does not fall under the definition of Used Oil.

General Requirements

- Recycle antifreeze that is not hazardous waste or radioactively contaminated. Antifreeze with greater than 2 parts per million (ppm) PCBs or 1000 ppm of halogens are not acceptable for recycle. Contact your Waste Management Coordinator (WMC) to determine a path forward for PCB-or halogen-contaminated antifreeze.
- If antifreeze is hazardous, follow the requirements under the Hazardous Waste ADESH-Tool 206.

Generator Training

See Waste Management Procedure P409, Section 6.0.

Characterization

If antifreeze is contaminated with metals or other solvents contact your WMC for assistance. If sampling and analysis of waste is required, samples must be taken by qualified and experienced personnel with specialized training. Sampling services can be requested by submitting a Request for Analysis.

Storage

Preferably, store antifreeze in closed containers in secondary containment in an area protected from the elements. Containers may be stored outside in secondary containment but should be recycled frequently to ensure containers do not degrade.

Labeling

Label waste antifreeze containers as **Non-Hazardous** and the contents (e.g., antifreeze, ethylene glycol, or propylene glycol).

This document has been DC reviewed and is unclassified.

Transportation

Contact your WMC; they will complete the paperwork to arrange for shipping of the antifreeze.

This document has been DC reviewed and is unclassified.

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS Call 7-6259

This tool provides guidance only.

ALKALINE OR CARBON BATTERIES

Definitions

Batteries are devices consisting of one or more electrically connected electrochemical cells, which is designed to receive, store, and deliver electric energy. An electrochemical cell is a system consisting of an anode, cathode, and an electrolyte, plus such connections (electrical and mechanical) as may be needed to allow the cell to deliver or receive electrical energy. The term "battery" also includes an intact, unbroken battery from which the electrolyte has been removed.

Alkaline batteries are batteries with the positive pole (anode) of the battery containing zinc, while the negative pole (cathode) contains manganese dioxide. Potassium or sodium hydroxide is used as the electrolyte. Alkaline batteries are usually not rechargeable and are often used in pagers.

Carbon batteries are batteries composed of a manganese dioxide-and carbon cathode, a zinc anode, and zinc chloride (or ammonium chloride) as the electrolyte. Ordinary D cell flashlight batteries are an example of zinc-carbon batteries.

General Requirements:

Alkaline and carbon batteries are not hazardous wastes. If not radioactive or otherwise contaminated with hazardous wastes, these batteries can be placed in office trashcans and be disposed in the regional landfill.

If you have any questions regarding the type of battery you have, please contact your Waste Management Coordinator for assistance.

This document has been DC reviewed and is unclassified.

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS Call 7-6259

CONSTRUCTION AND DEMOLITION DEBRIS

Definitions

Clean Fill is broken concrete, brick, rock, stone, glass, reclaimed asphalt pavement, or soil generated from construction and demolition activities. It must be free of contamination by materials such as radionuclides, polychlorinated biphenyls (PCBs), asbestos, beryllium, hazardous waste or other contaminants. Reinforcement materials that are an integral part, such as rebar, are considered part of clean fill.

Construction and Demolition (C&D) Debris is material resulting from construction, remodeling, repair, and demolition of structures. The New Mexico Environment Department has defined C&D debris as: materials generally considered to be not water soluble and nonhazardous in nature, including, but not limited to, steel, glass, brick, concrete, asphalt roofing materials, pipe, gypsum wallboard and lumber from the construction or destruction of a structure project, and includes rocks, soil, tree remains, trees and other vegetative matter that normally results from land clearing. If construction and demolition debris is mixed with any other types of solid waste, it loses its classification as construction and demolition debris. Construction and demolition debris does not include asbestos or liquids including but not limited to waste paints, solvents, sealers, adhesives or potentially hazardous materials.

Excavation is any soil penetration, disturbance, or ground breaking, including penetrations through slabs (where the soil will be disturbed), using powered equipment or hand tools.

Facility Operations Director (FOD) is the facility director having the ultimate responsibility, authority, and accountability for compliance of all work activities within his/her facility.

Fill is the placement of any dirt or other fill material (e.g., base course, asphalt, or concrete) on top of an existing surface.

Potential Release Site (PRS) is an area that is potentially contaminated from past operations or waste disposal.

General Requirements

- All C&D projects must have a LANL-approved Waste Management Coordinator (WMC) and a generator assigned to the project that has taken LANL waste generator training (see Training) or approved equivalent training.
- C&D projects must undergo a Project Review and Requirements Identification System (PR-ID).
- If the C&D involves excavation or fill activities, an Excavation Permit is required.
- Demolition projects must complete a Waste Characterization Strategy Form in accordance with the Waste and Materials Characterization for Demolition Projects to ensure proper characterization and management of wastes.

This document has been DC reviewed and is unclassified.

- If the PR-ID or Excavation Permit Application do not include complete and accurate information on wastes or activities that will generate wastes, the project manager should ensure that ENV-CP is updated as information becomes available so that the waste subject matter experts can comment appropriately on these documents.
- C&D debris should be staged near the work site in a manner which will prevent dispersion by water and wind.
- If the C&D is generated from a PRS or hazardous waste treatment, storage, or disposal facility, requirements for its handling will be identified as part of the PR-ID and/or Excavation Permit reviews. Note it is extremely important that the waste subject matter expert provide complete and accurate information on waste characterization and management requirements.
- No C&D debris can be left at the project site after project completion unless written permission has been received from the FOD.
- C&D projects may generate a significant amount of waste that is not C&D debris. By definition, C&D debris does not include hazardous waste, asbestos, liquids, or other hazardous materials. For example, solder, paints, glazes, adhesives, sealers, thinners, and other solvent-based materials used in construction are not C&D debris. Nor are lamps; thermostats; electronic equipment such as control panels, smoke detectors, alarms; other equipment; emergency lighting systems; batteries; and similar materials generated during demolition. The non-C&D wastes must be segregated from the C&D debris and properly characterized and managed. Please contact your WMC for assistance in determining how these and other types of waste streams are regulated and managed.
- Requirements for uncontaminated C&D debris are described in Table 1.
- Some types of C&D debris can be reused. Check with your WMC or Geri Martinez 667-6259 to determine whether off-site transfer of these materials is appropriate. The Los Alamos Transfer Station (662-8050) may have additional recycle options such as treated wood recycling. Please contact the Environmental Stewardship Services Group at 667-2278 for additional assistance.

Generator Training

See Waste Management Procedure P409, Section 6.0.

Characterization

WSPs are required for some C&D debris, as described in Table 1. ENV-CP might require sampling and analysis after the review of the documentation provided by the generator/WMC. If sampling and analysis of waste is required, samples must be taken by qualified and experienced personnel with specialized training. Sampling services can be requested by submitting a Request for Analysis.

Storage

Storage and handling requirements will be provided by ENV-CP Subject Matter Expert as comments to a PR-ID and/or Excavation Permit review request.

Packaging

Uncontaminated C&D wastes are usually packaged for transfer in roll-off bins or dump trucks that are covered to minimize material loss. The WMC will provide information on packing requirements.

Shipping

Shipping of C&D debris will be arranged by C&D project personnel, their subcontractors, or the WMC.

This document has been DC reviewed and is unclassified.

Table 1. C&D Debris Disposition

Waste Type	Requirement
Metal (e.g., piping)	Clean metal should be recycled. See the Scrap Metal tool (ADESH-TOOL-715).
Wood	The Los Alamos (LA) Transfer Station may be willing to accept treated lumber for reuse. It is recommended that the waste generator contact the Los Alamos Transfer Station prior to shipment for confirmation of acceptance.
Vegetation	• Uncontaminated vegetation can be taken to the LA Transfer Station for reuse as mulch. • Vegetation potentially contaminated by operations (e.g., depleted uranium or shrapnel from shots or vegetation from some PRSs that have the potential for root uptake of contaminants) cannot be reused and must be treated as a waste.
Reused as clean fill at the same Technical Area	• An Excavation Permit application must be prepared for the location where the material will be used as fill or stored until reuse. • The material must not be placed on a PRS or within a TSDF or watercourse.
Reused as clean fill at another Technical Area	• An Excavation Permit application must be prepared for the location where the material will be used as fill or stored until reuse. • The Excavation Permit will require approval from the FOD (or their designee) receiving the material. • The material must not be placed on a PRS or within a TSDF or watercourse.

Reusable material sent to the LA Transfer Station	• Clean concrete and asphalt are accepted at the LA Transfer Station as reusable fill.
	• Segregate concrete and asphalt soil from all other wastes.
	• Asphalt and concrete must be segregated from each other and can contain up to 15 percent soil.
	• The LA Transfer Station will require an approved WSP if approval is not obtained from Geri Martinez, ENV-CP. Passes are given to subcontractors on a case-by-case basis.
	• If LOG Division is delivering clean concrete, asphalt, or soil to the LA Transfer Station, the following process may be used:
	  • Obtain approval from Geri Martinez to the move the material to LA Transfer Station.
	  • Call Geri Martinez at 667-6259 for inspection of the spoil pile before it is taken to the LA Transfer Station.
	  • If the material is considered "clean fill," ENV-CP will issue a LANL Pass for Entrance to LA Transfer Station, which the LA Transfer Station requires before it will accept the material. The material must be delivered the same day the pass is issued. If ENV-CP does not issue a pass, the generator is required to submit a WSP for review and approval and manage the material as waste.

Waste sent to the LA Transfer Station	Non-reusable materials must have a current, approved WSP before being sent to the LA Transfer Station.
Sent to another off-site location	• Material sent off-site for disposal or reuse must have a current, approved WSP.

This document has been DC reviewed and is unclassified.

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations/permits, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS CALL 7-6259

This tool summarizes the requirements in 40 CFR § 261.7.

EMPTY CONTAINERS

Definitions

Acute hazardous waste is a waste listed as an acute hazard (H) in §§261.31, 261.32, or 261.33(e). This currently includes all P-listed wastes and F020-F023, F026-F028 wastes (see F-listed Waste),

Empty hazardous waste container is one of the following:

1. A container or an inner liner removed from a container that has held any hazardous waste (except a compressed gas or an acute hazardous waste) if:
   - All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container (e.g., pouring, pumping, and aspirating), and
   - No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner, or
     - if the container is less than or equal to 119 gallons in size, no more than 3 percent by weight of the total capacity of the container remains in the container or inner liner, or
     - if the container is greater than 119 gallons in size, no more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner
2. A container that has held a compressed gas (e.g. aerosol can, cylinder, tube truck) is empty when the pressure in the container approaches atmospheric, unless it contained P-listed waste (see item 3, below).
   - Cylinders >1.1 liters in size must have the valve removed or have a hole drilled in them;
   - Cylinders < 1.1 liters in size must have the valve open and have a tag to indicate they are empty.
   - All cylinders must be empty through use, not through venting to atmosphere.

   For additional information on aerosol cans, see the following: Empty Aerosol Cans ADESH-Tool 717 and Aerosol Cans with Remaining Product ADESH-Tool 407.
3. A container or an inner liner removed from a container that has held a P-listed waste is empty if:
   - The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;

- The container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or
- In the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container has been removed.

The Waste Management Programs Group discourages the cleaning of containers that held acute hazardous chemicals because the rinsate is classified as acute hazardous and is of a greater volume than the original waste. These containers should be disposed as hazardous waste (Hazardous Waste – General Tool 206).

General Requirements

Unused empty containers, empty containers that did not hold hazardous waste, or empty hazardous waste containers (as defined above) may be handled as follows:

- Compressed gas cylinders should be returned to the Gas Plant. The Gas Plant can be contacted at 667-4406 or a Gas Plant Operations Pickup Form can be filled (Form 1891).
- Empty gas cylinders not accepted by the Gas Plant and other empty metal containers may be placed in metal recycle bins or sent directly to the Material Recycling Facility (contact wastenot@lanl.gov).
- Empty plastic containers with the numbers 1-7 in the recycling triangle on the bottom of the container may be recycled. Contact wastenot@lanl.gov.
- Other empty containers smaller than 30 gallons may be discarded as commercial solid waste at a municipal landfill as long as the container did not contain an acute hazardous chemical.
- Other empty containers larger than 30 gallons may be recycled by contacting wastenot@lanl.gov.

If containers cannot be recycled they should be disposed of through TA-54. Contact your Waste Management Coordinator (WMC) for assistance.

Generator Training

There is no training required for generators who handle empty containers that are managed as non-hazardous waste.

Characterization

Generators must use acceptable knowledge or analysis to ensure their containers did not hold acute (P-listed) materials. If analysis is required, your WMC will submit a Request for Analysis. If the container contained P-listed materials, it should be handled as a hazardous waste in accordance with the ADESH-Tool 206 Hazardous Waste.

This document has been DC reviewed and is unclassified.

Storage

The empty cans should either be placed a bin specifically intended for metal recycle or in another location identified by your WMC. Clean drums stored outside should be turned upside down so rainwater cannot fill them. Send empty containers to recycling promptly.

Labeling

Empty containers should be labeled with the blue and white Empty label. They should not be labeled with the radioactive materials white Empty label.

Packaging

No packaging is required.

Shipping

Contact your WMC to arrange for pickup of containers that are to be recycled, reused, or disposed at locations other than the sanitary landfill.

This document has been DC reviewed and is unclassified.

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS Call 7-6259

This tool summarizes the best management practices at Los Alamos National Laboratory.

SCRAP METAL

Definitions:

Scrap metal is metal (other than lead, mercury, and precious metals) that is useful only as a raw material and is suitable for recycling. **Precious metals** include gold, silver, platinum, palladium, iridium, osmium, rhodium, ruthenium or any combination of these.

General Requirements:

Scrap metal identified as acceptable in Table 1 can be recycled through the Material Recycling Facility (MRF). The Environmental Protection Agency exempts scrap metal from hazardous waste accumulation and transportation requirements, as long as it is not dangerous. For example, scrap metal with lead paint can be recycled as long as the receiving facility will accept it. Also, equipment that used to contain F-listed solvents can be recycled, as long as the liquids are removed and only residual contamination remains. However, scrap metal with detonable quantities of high explosives is dangerous to handle; it cannot be recycled until the high explosives are removed. Similarly, beryllium- or asbestos-contaminated equipment is potentially dangerous to worker's health and may not be recycled. Contact your Waste Management Coordinator (WMC) for assistance in determining whether your scrap metal is recyclable.

To recycle metals, the generator must:

- Ensure that the material is not radioactive, classified, sensitive, or otherwise restricted for release.
- Drain oils or other free liquids from all equipment. Manage used oils in accordance with the ADESH-Tool-716 "Used Oil". In old equipment, test the oil to ensure that it is not contaminated with polychlorinated biphenyls (PCBs). If it is, follow the requirements ADESH-Tool-712 "PCBs". If the equipment contains refrigerant, the refrigerant must be removed and managed in accordance with ADESH-Tool-713 "Refrigerant."
- If the scrap metal is mercury-containing, manage it in accordance with ADESH-Tool-404 "Mercury-Containing Equipment."
- Ensure that the material is not dangerous (e.g., asbestos, high explosive or beryllium contaminated).
- If practical, segregate more valuable scrap metals (copper, aluminum, steel, brass) from tin and less valuable metals.

Scrap lead and precious metals must be managed through Salvage (salvage@lanl.gov). Place other metals in a designated metal recycle bin located at your facility. E-mail wastenot@lanl.gov to pick up a bin when it is full and replace it with an empty bin. Indicate "Pickup Scrap Metal" in the Subject line of the e-mail. Please include the location of the bin and a point of contact. If

items are too large to fit into a recycle bin or a bin is not available, transport scrap directly to the MRF (TA 60, Building 85) between 7:00 am and 3:30 pm Monday through Friday.

Generator Training:

Waste generator training is not required.

Characterization:

Generators must perform characterization required by the MRF. Screening for radioactivity (contact your Radioactive Control Technician) or for high explosives (contact your high explosives safety representative) may be required. Old equipment that contained oil may be PCB-contaminated and must be sampled. The generator must also use process knowledge or sampling to ensure that the equipment is not dangerous to release. If sampling and analysis of waste is required, samples must be taken by qualified and experienced personnel with specialized training. Sampling services can be requested by submitting a Request for Analysis.

Storage

Equipment should be stored in a location (preferably covered) so that leaks (e.g., oil or other liquids) do not impact the environment. Equipment should not be stored for long periods of time because they become a waste issue. Whenever possible, scrap metal should be containerized.

Keep all dumpsters or other containers containing scrap metal for recycle under cover or fit with a lid that must remain closed when not in use. For metal recycle dumpsters that are not leak proof, ensure small metal pieces, metal from grinding, and shavings are placed in a closed metal container, which can then be placed within a larger dumpster.

Labeling/Packaging

Labeling and packaging of individual scrap metal items is not required.

Transportation

E-mail wastenot@lanl.gov to pick up a bin when it is full and replace it with an empty bin. Indicate "Pickup Scrap Metal" in the Subject line of the e-mail and include location of the bin and a point of contact.

This document has been DC reviewed and is unclassified.

Table 1. Acceptable and Unacceptable Scrap Metal

Acceptable as Scrap Metal	Not Acceptable as Scrap Metal
• Cadmium • Copper • Mixed steel • Electrical equipment (no dielectric fluids, except as described for capacitors) • Empty gas cylinders not accepted by the Gas Plant (cylinders >1.1 liters in size must have valve removed or have a hole drilled in them; cylinders < 1.1 liters in size must have the valve open and have a tag to indicate they are empty. All cylinders must be empty through use, not through venting to atmosphere. • Tin, iron • Brass, aluminum, stainless steel • Empty five-gallon paint cans • Empty punctured aerosol cans • Non-PCB ballasts (must be in separate container and marked "non-PCB ballasts") • Non-PCB capacitors (dry, no weight limit; with oil, 100 pound limit per load for free recycling services; with oil, <100 pounds, there will be a recycling charge)	• Radiological or dangerous materials (e.g., asbestos-beryllium-, HE-, or perchlorate-containing material) • Lead or precious metals (must be managed through salvage) • Mercury (managed by TA-54) • Pressurized vessels • Dangerous • Liquids or oil (other than sealed capacitors) • Non-metal material such as concrete, soil, rags, wood, PVC pipe, paper, or cardboard. • Empty drums and containers (10 gallon to 110 gallon steel – handled by TA-54) • Computers (managed through salvage) • Controlled or bar coded property (manage as salvage).

This document has been DC reviewed and is unclassified.

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS Call 7-6259

This tool summarizes the waste management requirements in 40 CFR Part 279.

USED OIL FOR RECYCLE

Definitions

Used Oil, as defined by EPA in 40 CFR 279.1, is "any oil that has been refined from crude oil or any synthetic oil that has been used and as a result of such use is contaminated by physical or chemical impurities."

Used oils must be intended for recycle and may include:

- Oils drained or removed from equipment
- Used oils mixed with characteristic-only hazardous wastes if the mixture is not characteristic.
- Materials (e.g. rags, absorbents, wipes, scrap metal, etc.) that are contaminated with visible signs of free-flowing oil.
- Used oils mixed with fuels (even if not used for energy recovery).
- Oil filters that have not been drained.

Materials NOT covered by the used oil definition because they cannot be recycled include:

- Unused oil
- Oil or oil-contaminated material that will not be recycled
- Oil containing, contaminated with, or mixed with:
  - >1000 parts per million (ppm) halogens (e.g., chlorinated solvents)
  - Fuels not mixed with used oil
  - >1% asbestos
  - Vegetable or food oils
  - > 2 ppm polychlorinated biphenyls (PCBs)
  - Radioactive materials or listed hazardous waste
  - Characteristic-only hazardous wastes, if the oil/waste mixture is characteristic
  - Non-oils such as solvents, kerosene, antifreeze, fuel storage, tank bottoms, etc.

Unless generators can show otherwise, oils with concentrations of more than 1000 ppm are considered hazardous wastes because they are assumed to have been mixed with F-listed chlorinated solvents. If they are hazardous wastes, they must be managed in accordance with ADESH-Tool 206 "Hazardous Waste." If oils are contaminated by halon-containing refrigerants, there are some exemptions from the definition of hazardous waste. See ADESH-Tool 713

"Refrigerant – Containing Equipment." Contact your Waste Management Coordinator (WMC) or Geri Martinez 667-6259 for assistance in determining whether you have a Used Oil or whether other waste requirements apply.

Generator Training

See Waste Management Procedure P409, Section 6.0.

Characterization

Prepare a Waste Stream Profile Form (WSP) in accordance with the instructions provided through a link at the top of the form. If analysis of the waste is required to complete the WPF, waste samples must be taken by qualified and experienced personnel with specialized training. Sampling services can be requested by submitting a Request for Analysis.

Storage

Used oil must be stored in containers that are in good condition and closed. If you accumulate 10 gallons or more in a single location maintain a log sheet of origin/generator of the oil and request that your WMC register your UOA using the online Registration Form.

The used oil must be stored in a Used Oil accumulation area that is registered with the ENV-CP:

- Register your accumulation area using the Registration Form.
- The Update Registered Accumulation/Storage form must be completed if the generator, WMC, or status (i.e., decommissioned to active) changes.
- If the area will no longer be used, fill out the Hazardous Waste Storage Area Decommissioning Form.

Table 1 shows additional requirements for UOAs.

Packaging

Package the oil in a leak-proof, covered container.

Transportation

Contact your WMC, who will complete the appropriate paperwork.

Table 1. UOA Requirements

Volume Limits	No volume limits
Labeling	Individual containers must have a **Used Oil** label
Time Constraints	There are no time limits for storing Used Oil
Inspections	Not required
Signs/Posting	It is suggested, although not required, that the area have a sign with the words **Used Oil** and the **name and phone number** of the primary user

This document has been DC reviewed and is unclassified.

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS Call 7-6259

This tool summarizes the recycling requirements in 40 CFR 261.6 and for qualification as scrap metal in 261(c)(6) for aerosol cans that meet the definition of "empty."

EMPTY AEROSOL CANS

Note: Empty aerosol cans cannot be punctured until you receive approval from ENV-CP (Call Geri Martinez 667-6259).

Definitions

Aerosol can: A container in which gas under pressure is used to aerate and dispense any material through a valve in the form of a spray or foam.

Empty: An aerosol can is considered empty when:

- It has not held a P- listed material
- The can is in good working order (i.e. proper nozzle present and not plugged), and it passes the following two tests:
  1. After shaking the can; if the nozzle is depressed and there is no discharge of aerosol or propellant from the can, then it can be determined there is no internal pressure (i.e. the can is at atmospheric pressure)

AND

  2. While shaking the can if there is no evidence of liquid remaining (i.e. the generator cannot hear or feel liquid moving in the can) then it can be determined there is no discernable liquid remaining in the can

General Requirements

- Empty aerosol cans cannot be placed in trash receptacles unless they are punctured.
- Empty aerosol cans must be punctured before being placed in scrap metal recycling containers.
- Generators may wish to treat empty aerosol cans as hazardous to facilitate handling (e.g., so that they can store empty and non-empty cans in one waste area). If so, the cans must be handled in accordance with ADESH-Tool 407 "Aerosol Cans with Remaining Product."
- Contact Geri Martinez at 667-6259 before puncturing empty aerosol cans. Empty aerosol cans cannot be punctured until you receive approval from ENV-CP.

This document has been DC reviewed and is unclassified.

Characterization

No characterization is required for empty aerosol cans except to ensure they are empty in accordance with the methods described under Definitions above. If the aerosol cans do not meet the definition of empty they must be handled in accordance with ADESH-Tool 407 "Aerosol Cans with Remaining Product."

Storage

Punctured empty aerosol cans should be placed in a bin specifically intended for metal recycle. Non-punctured empty aerosol cans should be placed in a location identified by your Waste Management Coordinator (WMC).

Packaging and Shipping

Contact your WMC.

This document has been DC reviewed and is unclassified.

PERMITTED STORAGE REQUIREMENTS

This tool cannot establish new requirements; it may only summarize the requirements in federal or state statutes/regulations/permits, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS CALL 7-6259

This tool summarizes the requirements in 40 CFR 264 and Permit Part 3 "Storage in Containers" of LANL's Hazardous Waste Facility Permit.

General

Permitted storage units are hazardous waste management units where authorized (see LANL's Hazardous Waste Facility Permit, Attachment B for a list of authorized waste for each unit and Attachment J for list of authorized permitted storage units and structures) waste are allowed to be stored. Storage must be in containers and in authorized storage structures.

Waste analysis/characterization (see ADESH-Tool-111 "Waste Characterization") requirements must be met prior to acceptance of hazardous waste at the permitted units.

Registration

Permitted storage area must be registered and updated with ENV-CP. Contact your WMC or ENV-CP at 7-6259.

Requirements

POSTING/MARKINGS

- Warning signs must be located at each unit that warn against prohibited entry in two languages (English and Spanish) or three languages (Tewa, English and Spanish).
- Each unit must have established lines of demarcation that identify the boundaries of the unit.

VOLUME

- Check LANL's Hazardous Waste Facility Permit, Attachment J for storage capacity of each permitted unit.

CONTAINER REQUIREMENTS

- Containers must be closed when waste is not being added or removed.
- Containers must be made of or lined with materials that are compatible with the waste.
- Containers must be stored and handled so as to prevent container rupture or leakage.

- Containers with a concentration of volatile organic compounds (VOCs) greater than 500 ppm by weight must be monitored for emissions unless they meet DOT specifications under 49 CFR Part 178. Other exclusions from the emission monitoring requirement can be found in 40 CFR 265.1080.
- Containers must be tracked by location within the permitted unit and as moved to other units.
- Containers must have a minimum aisle space and emergency egress of 2 ft.
- Oversized items may be wrapped in plastic two times if they cannot be containerized.
- Containers or tanks of ignitable or reactive waste must not have no sources of open flames in, on, or around the container.
- Containers equal to or greater than 30 gallons can be stacked up to 3 high if palletized and banded.
- Containers of ignitable and reactive wastes can be stacked no more than 2 drums high to comply with the National Fire Protection Association's (NFPA) Flammable and Combustible Liquids Code.
- Containers must be elevated.
- Containers with free liquids must have secondary containment.

LABELS

- Containers must be labeled "Hazardous Waste" and list the generator's name and address.
- Containers must be marked with the date it was placed in storage.
- Containers must have EPA Hazardous Waste Number(s) associated with waste.
- Containers holding free liquids must be labeled "Free Liquids".
- Containers holding mixed waste must be labeled "Radioactive".

TIME LIMITS

- Containers must not be stored beyond one year from the date it was first placed in storage.
- Containers of mixed waste can be stored beyond one year if it is documented in the Site Treatment Plan (STP).

SEGREGATION

- Containers of ignitable or reactive waste must be segregated, separated and protected from sources of ignition or reaction such as cutting, welding, frictional heat, sparks (e.g., static, electrical, mechanical), spontaneous ignition, and radiant heat.

- Requirements for ignitable, reactive or incompatible waste. Reactions that could lead to or cause the following to occur must be prevented:

  - generation of extreme heat, pressure, fire, explosions, or violent reactions;
  - production of uncontrolled toxic mist, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;
  - production of uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;
  - damage to the structural integrity of the container, tank, permitted unit, or other structure associated with the permitted unit; and
  - threats to human health or the environment.

SAFETY

- See LANL's Hazardous Waste Facility Permit, Attachment D for the list of all required equipment at the permitted unit.

- Ensure that equipment is tested, maintained and accessible.

- Repair of equipment or damage within the unit must be repaired or mitigated within 24 hours of discovery:

  - Backups, safety precautions, and work-arounds must be put in place and documented within the 24 hours in the operating record.
  - Missing or nonfunctioning equipment must be clearly marked, a substitute provided, and training of use of substitute equipment must occur, if appropriate.

- Ensure that each permitted unit's fire suppression system is compatible with the hazardous waste being stored or treated at the permitted unit.

- Maintain adequate clearance around fire hydrants at permitted units.

- Ensure appropriate lightning protection is provided for all storage and treatment units that manage ignitable and reactive waste.

- Confine smoking and open flames to designated areas that are a minimum of 50 feet from areas where ignitable or reactive wastes are handled.

- Use only non-sparking tools when managing hazardous waste containers that contain ignitable or reactive wastes.

- Ensure spills are cleaned up and managed appropriately.

DOCUMENTATION

- Most recent contingency plan must be located at each unit
- Characterization documentation be kept and inspectable.

INSPECTION

- Inspect the accumulation area weekly or on any day waste is actively managed.
- Perform ongoing inspection, testing, and maintenance of fire protection equipment to determine appropriate test criteria and preventative maintenance activities.

TRAINING

- See Waste Management P409, Section 6.0.

This tool cannot establish new requirements; it may only summarize the requirements in federal/state statutes/regulations, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS CALL 7-6259

The tool summarizes the requirements in 40 CFR § 264.73 (Operating Record), Section 2.12.2 of LANL's Hazardous Waste Facility Permit (Facility Operating Record, http://int.lanl.gov/environment/waste/permit_tracking.shtml), and various other references to the Facility Operating Record within the Permit.

FACILITY TSF OPERATING RECORD

Definition

A written Operating Record is intended to keep track of hazardous waste activity at the facility and shall:

- Describe the hazardous waste received
- Describe methods and dates of treatment
- Describe location of wastes in the facility.
- Maintained in Waste Compliance and Tracking System (WCATS)

Interim Status and Permitted Areas Operating Record Requirements

The following are all the elements of the operating record as delineated in Section 2.12.2 of LANL's Hazardous Waste Facility Permit as well as other sections of the Permit. The Facility Operating Record for the operations of each permitted unit and interim status unit at the Facility are maintained for the life of the unit, including the post-closure care period.

1. *A description of the hazardous waste received, that it is an authorized waste, and the methods and dates of treatment and/or storage at each permitted unit.*

    - Ensure descriptions of waste received and storage records are kept for storage units this information can be found in WCATS in most cases.

    - Ensure treatment units document when hazardous waste was received, and methods and dates of treatment at each unit.

2. *The location of each type of hazardous waste within each permitted unit and the total quantity of all wastes and waste types at each unit (unit and structure).*

    - Ensure the location within each unit, total quantity of waste and waste types for storage units is documented in WCATS. For certain units, portions of this information is kept separately from WCATS in a separate database for security reasons.

    - Ensure treatment units keep this information available for each unit at their facility.

3. *Documentation that treatment reagents are compatible with waste to be treated.*

- Ensure documentation is kept at the applicable units at TA-16, TA-36, TA-39 and TA-55. This includes documentation about any secondary material/chemical/neutralizer that is added to the waste prior to or during treatment.

4. *Documentation that containers and liners are compatible with waste stored.*

   - Ensure documentation is kept within the records specific to the permitted and interim status units.

5. *Records and results of waste analyses and waste determinations (AK and sampling and analysis).*

   - Ensure waste characterization documentation is located within WCATS (as an updated document), or a reference to the documentation is included in the waste stream profile in WCATS. All AK documentation must include a unique identifier.

6. *Records and results of inspections including:*
   a. Inspection Record Form (IRF),
   b. TA-50-69 storm water controls,
   c. TA-54, Area L holding tank,
   d. TA-63 retention basin,
   e. documentation of items that are carried as issues, and
   f. close-out of issues.

   - Ensure documents that records inspections are kept within the records specific for the applicable units. These include the inspection record forms, any documentation (including database information) of issues identified, and documentation of close-out of those items.

7. *Documentation of inspections by a registered engineer trained and experienced in the proper installation of tank systems or components prior to replacing a portion of the tank or stabilization unit systems (40 CFR § 264.192(b) and Permit Section 4.3(3)).*

   - Ensure documentation is kept by the owner of the TA-55 for the tank storage system and stabilization unit.

8. *Documentation of maintenance and repair activities conducted at permitted and interim status units that involve equipment used for storage and/or treatment activities at the unit.*

   - Ensure documentation is kept with records specific for the applicable units. This includes maintenance documentation, replacement part procurement, restart inspections, and mitigations put in place while the equipment was out of service.

9. *Documentation demonstrating the installation and maintenance of secondary containment system coatings, sealants, or liners as required at Permit Sections 3.7.1(4) and 4.4(4).*

- Ensure documentation is kept by the unit owner with records specific to the applicable units at TA-3, TA-54 and TA-55.

10. Documentation of removal of liquids from secondary containment structures and from TA-54, Area G, Dome 224.

- Ensure documentation is kept by the unit owner of TA-54, Area G, and Pad 5.

11. Correspondence between the Permittees and the NMED-HWB, including by not limited to permit applications, modifications, reporting, notifications, and noncompliance.

- Ensure correspondence documentation is kept by ENV-CP and may exist in the LANL electronic public reading room (EPRR).

12. Documentation of all instances where an indoor fire suppression system has been activated resulting in fire suppressants contacting a waste storage floor.

- Ensure documentation is kept with the records specific to the applicable units at TA-3, TA-50, TA-54, and TA-55.

13. Documentation of notifications and trainings associated with alternate emergency equipment as required at Permit Section 2.10.2.

- Ensure facility notifications and training are documented by the owner of the unit.

14. Record keeping and reporting requirements associated with manifests in accordance with 40 CFR §§ 264.71, 264.72, and 264.76, whenever a shipment of hazardous waste is either received at, or initiated from a permitted unit.

- Ensure manifests for hazardous and mixed wastes are kept in WCATS. Manifests for transuranic waste are kept by OS-PT.

15. Documentation that waste stored for greater than one year meet the conditions outlined in Permit Section 2.3.1.

- Ensure documentation for the Site Treatment Plan is kept by WM-SVS.

16. Documentation that waste from off-site sources meets the requirements outlined in Permit Section 2.2.1.

- Ensure documentation about program is kept by OSPR.

17. For stored wastes, the notice (or information contained in the notice for wastes generated on-site) and certification required at 40 CFR § 268.7.

- Ensure that a one-time notice is kept in the record for wastes that have been determined to be excluded from the definition of hazardous or solid waste or exempted from the regulation (e.g. deactivated characteristic hazardous waste managed in a waste water treatment system or materials used or reused as ingredients in an industrial process to make a product). Information on the generation of the material is included in WCATS.

18. *For treated wastes, information documenting if the treatment meets LDR standards as outlined in 40 CFR § 268.7(b).*

    - Ensure documentation associated with testing of residuals or treated wastes is kept within the records specific to the applicable units at TA-16, TA-36, TA-39 and TA-55.

    - Ensure documentation associated with whether a waste is treated to meet land disposal restriction standards is also kept within the records specific to the applicable units at TA-16, TA-36, TA-39 and TA-55.

19. *Monitoring, testing, analytical data, and response actions when there are issues with the integrity of tanks or secondary containment for tanks, miscellaneous units, or volatile organic control devices.*

    - Ensure documentation is kept within the records specific for the applicable units. This includes the inspection record forms, any documentation (including database information) of issues identified, and documentation of close-out of those items.

20. *Personnel training records.*

    - Ensure training records are kept in Utrain.

21. *Records required by the Permit during the course of any unresolved enforcement action regarding the Facility or as required by the Department.*

    - Ensure documentation of this information is kept with ENV-CP.

22. *A copy of emergency response agreements.*

    - Ensure documentation of agreements is kept with ENV-CP.

23. *Notices to off-site generators or notices of ownership transfer.*

    - Ensure notifications from the TSDF to the generator of off-site sources that the facility has the appropriate permit(s) for the waste must be kept with the specific program brokering with the generator (the off-site source recovery program) and within the records specific for the applicable units at TA-54.

24. *Annual certification stating a Facility program is in place to reduce the volume and toxicity of hazardous waste generated (waste minimization report).*

    - Ensure ENV-CP keeps the annual waste minimization report that documents this program.

25. *Documentation demonstrating distribution of the Contingency Plan (Attachment D)*

    - Ensure documentation of the distribution of the Contingency Plan is kept with by ENV-CP.

26. *Documentation of the annual review of the Contingency Plan (Attachment D) by the emergency managers.*

    - Ensure documentation of the annual review is kept with ENV-CP.

27. *Annual certification that emergency response personnel are familiar with the potential hazards in performing their duties associated with the hazardous wastes at LANL's permitted hazardous waste management units.*

    - Ensure documentation of the certification is institutional and is kept with ENV-CP

28. *Documentation associated with the implementation of the Contingency Plan (Attachment D) and all subsequent reporting and notification.*

    - Ensure documentation of implementation of the Contingency Plan (and all associated reporting) is kept with ENV-CP.

29. *Monitoring, corrective action program, and closure of unit considerations (264.73(b)(17) & (18)):*

    - Ensure all monitoring records associated with the implementation of a remediation program are kept.
    - Ensure all monitoring reports and records required by this Permit are kept, including but not limited to:
        a. sampling procedures, records of field measurements, laboratory analytical data, quality assurance/quality control documents, chain-of-custody records, well completion reports and periodic monitoring reports;
        b. records of all monitoring data used to complete Permit Application(s);
        c. sampling and analysis and removal of contents within holding tank at TA-54, Area L;
        d. sampling and analysis of contents within TA-54, Area G, Dome 224;
        e. sampling and analysis and removal of contents of TA-63 retention basin;
        f. vapor monitoring at TA-63;
        g. all data gathered or generated during the closure or post-closure process;
        h. all documentation of implementation and planned corrective action activities; and

i. all laboratory reports, drilling logs, bench-scale or pilot scale data.

- Ensure documentation of permit application data and the closure process is currently kept with ENV-CP.

- Ensure documentation associated with bench-scale or pilot scale data and laboratory reports that are used for waste characterization purposes should be included or referenced within WCATS.

- Ensure documentation associated with bench-scale or pilot scale data and laboratory reports for the purposes of proving waste treatment methodologies are kept within the records specific for the applicable units at TA-3, TA-16, TA-36, TA-39, TA-50, TA-54, and TA-55.

30. *For disposal units, for hazardous wastes left in the ground after closure the information required of a treatment facility.*

- Ensure documentation of closure and post-closure activities is currently kept with ENV-CP.

For assistance or questions regarding the Facility Operating Record please call ENV-CP at 7-6259.

WASTE PROCESSING AT PERMITTED UNITS

This tool cannot establish new requirements; it may only summarize the requirements in federal/state statutes/regulations/permits, DOE Orders, and authorized Laboratory policies.

TO REPORT ERRORS Call 7-6259

This tool summarizes the activities that are conducted at permitted units and are authorized under the storage portions of the LANL Hazardous Waste Facility Permit.

Definitions

Waste processing includes any process tasks that change the contents, composition, or form of the waste being prepared for disposal. Waste processing at the Facility that is not defined as treatment is limited to sorting, segregating, repackaging, high efficiency neutron counter (HENC), Real-Time Radiography (RTR), drum venting, and heated storage. These activities can be conducted within generator areas and at Treatment Storage and Disposal Facilities (TSDFs) to make waste amenable for shipment off-site for disposal. These processing activities are not considered treatment of waste because they do not change the physical, chemical, or biological characteristics of the waste.

Secondary material includes but is not limited to items such as gloves, tools, swipes, rags, kimwipes, plastic, personal protective equipment, empty product containers and original packaging material (e.g, plastic bags, plywood sheathing, rigid drums, and empty drums).

Resizing for waste management purposes incorporates any activity that can be categorized as resizing waste to fit into shipping containers including but not limited to compaction and size reduction using hand tools.

Requirements

Requirements established in the 2010 Los Alamos National Laboratory Hazardous Waste Facility Permit (and all updates) must be met for all waste processing activities.

Note: Secondary material should be segregated from the regulated waste being processed. If secondary material is added during the process, the activity becomes a waste generating process and must undergo waste characterization. Additionally, the Waste Generator must ensure that any secondary material added to the waste is compatible with the waste.

Note: Prior to conducting any resizing activities, contact ENV-CP. A permit modification may be required.

Location and Type of Waste Processing at TSDFs

TA-50

TA-50-69, Waste Characterization, Reduction, and Repackaging Facility (WCRRF), is used primary for repackaging transuranic waste into standard sized containers for transport to, and disposal at, the Waste Isolation Pilot Plan (WIPP).

TA-54

TA-54, Area G, Pad 11, Dome 375 contains a modular structure that is used for decontamination, segregation, waste assay, reclassification activities and repackaging of transuranic waste prior to shipment offsite. Also located on the pad is the unit, RTR1, which is used to provide X-ray examination of the contents of waste drums.

TA-54, Area G, Pad 1, Dome 412 contains five cells each of which are used for sorting and segregating transuranic waste and mixed transuranic waste, decontamination, and packaging waste items.

TA-54, Area G, Pad 10, also includes following activities:

- The multichannel scaling (MCS) and a HENC. The HENC are designed to provide a passive neutron and gamma measurement of transuranic waste drums in 55 gallon containers.
- The Super High Efficiency Neutron Coincidence (SuperHENC) counter is designed to provide a passive neutron and gamma measurement of large transuranic waste containers like standard waste boxes.
- RTR system #2 is designed to provide X-ray examination of the contents of a waste drum.
- Heated storage is utilized for storing transuranic and mixed transuranic waste storage prior to characterization.

TA-54, Area G, Structure 33, contains a drum venting system.

TA-63

TA-63, Transuranic Waste Facility (TWF) when constructed will include pads for trailer housing and the following characterization equipment:

- RTR unit. The non-destructive assay (NDA) equipment in the trailer is designed to provide X-ray examination of the contents of transuranic waste drums.
- HENC unit. The NDA equipment in the trailer is designed to provide a passive neutron and gamma measurement of 55 gallon transuranic waste drums.
- The SuperHENC unit. The NDA equipment in the trailer is similar to the HENC but includes a high efficiency neutron counter and a gamma counter that are both designed to handle standard waste boxes.

Exclusions

There are no exclusions for waste processing activities. If there are any changes to the unit, additions to the waste, or resizing of waste to be conducted, a permit modification may be required. Contact ENV-CP.

Characterization

Refer to ADESH-TOOL-111.2 for waste characterization.

Training

See Waste Management P409, Section 6.0.

Registration

Permitted storage area must be registered and updated with ENV-CP. Contact your WMC or ENV-CP.

Attachment J
Threatened and Endangered Species Habitat Management Plan for Los Alamos National Laboratory

LA-UR-14-21863
Approved for public release;
distribution is unlimited.

Title:	**Threatened and Endangered Species Habitat Management Plan for Los Alamos National Laboratory**
Author(s):	Environmental Protection Division Resources Management Team
Intended for:	Reference purposes
Date:	March 2014



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ACRONYMS

AEI	Area of Environmental Interest
BA	biological assessment
Bd	Batrachochytrium dendrobatidis
BSL-3	Biosafety Level 3
COPCs	chemicals of potential concern
DARHT	Dual-Axis Radiographic Hydrodynamic Test (Facility)
dB	Decibel
DDT	(dichloro-diphenyl-trichloroethane)
DOE	U.S. Department of Energy
EPA	Environmental Protection Agency
ESA	Endangered Species Act of 1973
fc	foot candles
FR	Federal Register
GIS	geographic information system
HMP	Threatened and Endangered Species Habitat Management Plan
HVAC	heating, ventilation, and air conditioning
LANL	Los Alamos National Laboratory
NEPA	National Environmental Policy Act
NMED	New Mexico Environment Department
NPDES	National Pollutant Discharge Eliminations System
PCBs	polychlorinated biphenyls
PR-ID	Permits and Requirements Identification
SME	subject matter expert
USFWS	U.S. Fish and Wildlife Service

I. THREATENED AND ENDANGERED SPECIES HABITAT MANAGEMENT PLAN GENERAL OVERVIEW

1.0 INTRODUCTION

Los Alamos National Laboratory's (LANL) Threatened and Endangered Species Habitat Management Plan (HMP) was prepared to fulfill a commitment made in the U.S. Department of Energy's (DOE) "Final Environmental Impact Statement for the Dual-Axis Radiographic Hydrodynamic Test Facility Mitigation Action Plan" (DOE 1996). The HMP received concurrence from the U.S. Fish and Wildlife Service (USFWS) in 1999 (USFWS consultation numbers 2-22-98-I-336 and 2-22-95-I-108). In this 2014 update, we retained the management guidelines from the 1999 HMP for listed species, updated some descriptive information, and added the Jemez Mountains salamander (*Plethodon neomexicanus*), which was federally listed in September 2013 (USFWS consultation number 02ENNM00-2014-I-0014).

2.0 ROLE OF SITE PLANS IN THE HMP

The purpose of the HMP is to provide a management strategy for the protection of threatened and endangered species and their habitats on LANL property. The HMP consists of site plans for federally listed threatened or endangered species with a moderate or high probability of occurring at LANL. The following federally listed threatened or endangered species currently have site plans at LANL: Mexican Spotted Owl (*Strix occidentalis lucida*), Southwestern Willow Flycatcher (*Empidonax trailii extimus*), and the Jemez Mountains salamander. Site plans provide guidance to ensure that LANL operations do not adversely affect threatened or endangered species or their habitats.

3.0 DESCRIPTION OF AREAS OF ENVIRONMENTAL INTEREST

Suitable habitats for federally listed threatened and endangered species have been designated as Areas of Environmental Interest (AEIs). AEIs are geographical units at LANL that are managed for the protection of federally listed species and consist of core habitat areas and buffer areas. The purpose of the core habitat is to protect areas essential for the existence of the specific threatened or endangered species. This includes the appropriate habitat type for breeding, prey availability, and micro-climate conditions. The purpose of buffer areas is to protect core areas from undue disturbance and habitat degradation.

Site plans identify restrictions on activities within the AEIs. Allowable activities are activities that the USFWS has reviewed and provided concurrence that these activities are not likely to adversely affect federally listed species. Activities discussed in site plans include day-to-day activities causing disturbance (hereafter referred to as "disturbance activities"), such as access into an AEI, and long-term impacts, such as habitat alteration.

3.1 Definition and Role of Developed Areas in AEI Management

Summary: Habitat alteration is not restricted in developed areas unless it impacts undeveloped core areas of an AEI (e.g., noise and light impacts on a core area). Current ongoing disturbance activities are not restricted in developed areas. Disturbance activities not currently ongoing are

restricted when impacts occur to undeveloped core areas of an AEI that are occupied by a threatened or endangered species.

Developed areas include all building structures, paved roads, improved gravel roads, paved and unpaved parking lots, and firing sites. The extent of developed areas in each AEI was determined using two methods. First, LANL geographic information system (GIS) analysts placed a 15 m (49 ft) border around all buildings and parking lots. For paved and improved gravel roads, the developed area was defined as the area to a roadside fence, if one exists within 9 m (30 ft) of the road, or 5 m (15 ft) on each side of the road, if there is no fence within 9 m (30 ft). If an area of highly fragmented habitat was enclosed by roads, a security fence, or connected buildings, that area was also classified as developed. Developed areas at firing sites were defined as a circle with a 91-m (300-ft) radius from the most centrally located firing pad. Second, LANL GIS analysts overlaid scanned orthophotos onto a map of the Los Alamos area and digitized all areas that appeared developed. These two information sources were overlaid and combined, so that areas classified as developed by either method were considered developed in final maps and analyses. Some areas were confirmed by ground surveys, such as the firing sites. Developed areas are contained in the HMP GIS database.

Developed areas are located in the core and/or buffer of some AEIs. However, developed areas do not constitute suitable habitat for federally listed species. Current ongoing activities in developed areas constitute a baseline condition for the AEIs and are not restricted. New activities including further development within already existing developed areas are not restricted unless they impact undeveloped portions of an AEI core. For example, if light or noise from a new office building in a developed area were to raise levels in an undeveloped core area, those light and noise levels would be subject to the guidelines on habitat alterations. If a proposed action within a developed area does not meet site plan guidelines, it must be individually reviewed for compliance with the Endangered Species Act of 1973 (ESA).

Building a new structure or clearing land within a previously designated developed area in an AEI core does not add to the size of the developed area. New structures in core areas will not be given any developed-area border unless they are individually reviewed for ESA compliance.

Development occurring in the developed area in an AEI buffer can be given a 15 m (49 ft) developed-area border at the discretion of the project leader or facility manager. To expand the size of a developed area in a buffer based on new developments, please contact a LANL biological resources subject matter expert (SME) (http://int.lanl.gov/environment/bio/controls/index.shtml).

3.2 General Description of Buffer Areas and Allowable Buffer Area Development

Summary: Limited future development is allowed in the currently undeveloped DOE-controlled buffer area under the guidelines of this HMP as long as it does not alter habitat in the undeveloped AEI core (including light and noise guidelines). Development beyond the cap established for each AEI, or greater than 2 ha (5 ac) in size including the developed-area border, requires independent review for ESA compliance.

The purpose of buffer areas is to protect core areas from undue disturbance or habitat degradation. The current levels of development in buffer and core areas represent baseline conditions for this

HMP. No further development is allowed in the core area under the guidelines of this HMP. A limited amount of development is allowed in buffer areas. Under the guidelines of this HMP, individual development projects are limited to 2 ha (5 ac) in size, including a 15 m (49 ft) developed-area border around structures and a 5 m (15 ft) developed-area border around paved and improved gravel roads. Projects greater than 2 ha (5 ac) in area require individual review for ESA compliance (see exceptions for fuels management activities and utility corridor maintenance). New development projects in AEI buffer areas must be reported to LANL biological resources SMEs for tracking (http://int.lanl.gov/environment/bio/controls/index.shtml). Descriptions of each of the AEIs give the total area in each buffer area available for development.

3.3 Emergency Actions

Summary: Contact DOE and LANL biological resources SMEs as soon as possible.

If safety and/or property is immediately threatened by something occurring within an AEI (for example, wildfire, water line breakage, etc.) managers may activate emergency actions. Contact a LANL biological resources SME (http://int.lanl.gov/environment/bio/controls/index.shtml), the Environmental Stewardship Group (1-505-665-8855), or the DOE Los Alamos Field Office (Field Office; 1-505-667-6819) as soon as possible. If the emergency occurs outside of regular business hours, contact the Emergency Management Office (1-505-667-6211). This office will then communicate with the appropriate LANL and DOE Field Office personnel.

4.0 IMPLEMENTATION OF SITE PLANS

4.1 Roles and Responsibilities

Summary: LANL's facility managers and operational staff are responsible for ensuring that activities are reviewed for compliance with all applicable site plans. Figure 1 illustrates the process for utilizing site plans. If activities follow approved guidance, there is no requirement for additional ESA regulatory compliance. However, additional National Environmental Policy Act (NEPA), cultural resources, wetlands, or other regulatory compliance actions may be required.

If an activity or project occurs outside of all LANL AEIs and will not impact habitat within an AEI, it does not have to be reviewed for ESA compliance, unless it is a large project. Projects that are larger than 2 ha (5 ac) or cost more than $5 million require an individual ESA compliance review, even if they are not located within an AEI.

LANL's facility managers are responsible for determining if operations within their geographic and/or programmatic area of responsibility comply with the guidelines in these site plans. Submission of a Permits and Requirements Identification (PR-ID) for a new or modified project is required under Program Description 400 (LANL 2013) and allows managers to identify the requirements within their project area. Deployed environmental professionals and core LANL biological resources SMEs are available to support facility managers. If activities follow site plan guidelines, they do not require any additional ESA regulatory compliance action. However, NEPA, cultural resources, wetlands, or other regulatory compliance actions are not addressed in site plans and additional compliance actions may be required. It is the responsibility of the project leader or facility management staff to ensure that all requirements are satisfied. If you have

questions, contact biological, cultural, NEPA, or other environmental SMEs. Contacts can be found at http://int.lanl.gov/environment/compliance/ier/index.shtml.

A single facility may have one or more AEIs within its boundary and the AEIs may be for different species. Some AEIs overlap. In areas where overlap occurs, project managers must follow the guidelines for AEIs of all involved species.

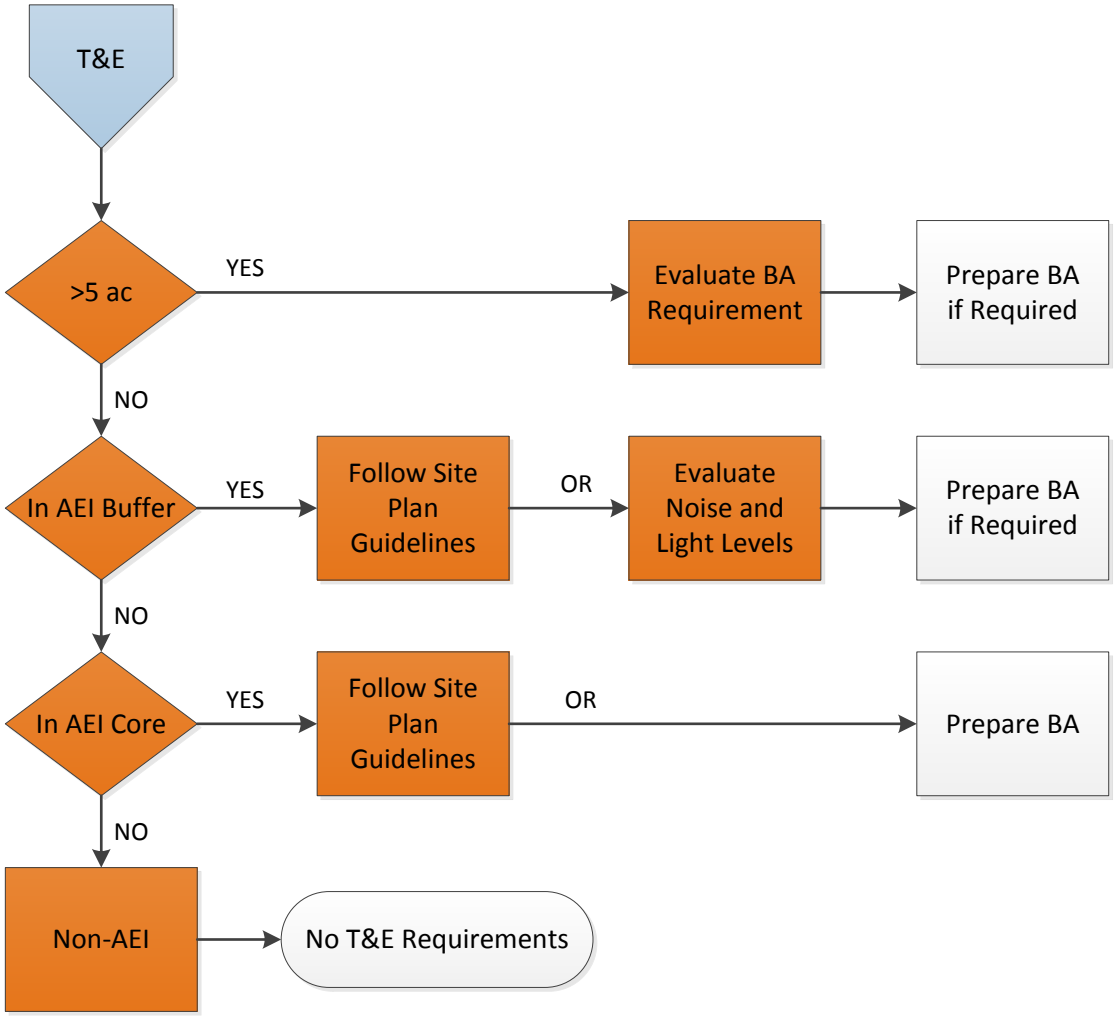

Figure 1. Process flowchart for determining site plan requirements.

4.2 If an Activity Does Not Meet Site Plan Guidelines

Summary: Activities or projects that do not meet all applicable site plan guidelines must be evaluated individually for compliance with the ESA.

If a project reviewer determines that an activity or project cannot meet the guidelines in applicable site plans, LANL biological resources SMEs evaluate that activity individually for compliance with the ESA. Results of the evaluation of potential impacts allow LANL biological resources SMEs to make recommendations to the DOE Field Office Biological Resources Program Manager

regarding the need for USFWS consultation. An evaluation may result in 1) a DOE Field Office determination that there is no possibility of adverse effects and the activity can proceed, 2) a DOE Field Office suggestion for modifications of the action to avoid adverse effects so that it can proceed, or 3) a DOE Field Office decision to prepare a biological assessment (BA) for the activity and submit it to the USFWS for concurrence. Fieldwork and preparation of a BA can take a few months with an additional 2 to 12 months for DOE Field Office review and then final USFWS concurrence.

4.3 Dissemination of Information

Although information about threatened and endangered species is not classified, it is considered sensitive information. It is in the best interest of threatened and endangered species to restrict specific knowledge about their locations. Habitat locations of threatened and endangered species are not considered sensitive.

5.0 CHANGES IN THE HMP SINCE IMPLEMENTION

The HMP received concurrence from USFWS and was first implemented in 1999. Since that time, both the Peregrine Falcon (*Falco peregrinus*) and the Bald Eagle (*Haliaeetus leucocephalus*) have been delisted. Site plans for those species have been removed from LANL's HMP. Both species are protected at LANL under the Migratory Bird Treaty Act, and the Bald Eagle is also protected under the Bald and Golden Eagle Protection Act.

The black-footed ferret (*Mustela nigripes*) is federally listed as endangered. However, no sightings of black-footed ferrets have been reported in Los Alamos County for more than 50 years. In addition, no large prairie dog towns, which are prime habitat for black-footed ferrets, have been observed on DOE property around LANL. Therefore, there is no site plan for this species.

In 2005, the USFWS concurred with DOE's proposal for new Mexican Spotted Owl habitat boundaries based on a revised analysis of Mexican Spotted Owl habitat quality within DOE property around LANL (USFWS consultation number22420-2006-I-0010).

In 2012, the USFWS concurred with DOE's proposal to modify the habitat boundaries for the Los Alamos Canyon Mexican Spotted Owl AEI due to changes from the fire response activities after the Las Conchas wildfire (USFWS consultation number 02ENNM00-2012-IE-0088).

In 2013, the USFWS concurred with the DOE's new site plan for the Jemez Mountains salamander and its addition to LANL's HMP (USFWS consultation number 02ENNM00-2014-I-0014).

6.0 DATA MANAGEMENT

The data used in the implementation of the HMP is stored in a GIS database at LANL.

II. AREA OF ENVIRONMENTAL INTEREST SITE PLAN FOR THE MEXICAN SPOTTED OWL

1.0 SPECIES DESCRIPTION—MEXICAN SPOTTED OWL

1.1 Status

In 1993, the USFWS determined the Mexican Spotted Owl to be a threatened species under the authority of the ESA, as amended (58 Federal Register [FR] 14248). In 1995, the USFWS released its final recovery plan for the owl (USFWS 1995), which was revised in 2012 (USFWS 2012). The USFWS most recently designated critical habitat for Mexican Spotted Owl in 2004 (69 FR 53181).

1.2 General Biology

The Mexican Spotted Owl is found in northern Arizona, southeastern Utah, and southwestern Colorado south through New Mexico, west Texas, and into Mexico. It is the only subspecies of Spotted Owl recognized in New Mexico (USFWS 1995).

The Mexican Spotted Owl generally inhabits mixed conifer and ponderosa pine (*Pinus ponderosa;* Lawson & C. Lawson) - Gambel oak (*Quercus gambelli;* Nutt.) forests in mountains and canyons. High canopy closure, high stand diversity, multilayered canopy resulting from an uneven-aged stand, large, mature trees, downed logs, snags, and stand decadence as indicated by the presence of mistletoe are characteristic of Mexican Spotted Owl habitat. Some owls have been found in second-growth forests (i.e., younger forests that have been logged); however, these areas were found to contain characteristics typical of old-growth forests. Mexican Spotted Owls in the Jemez Mountains seem to prefer cliff faces in canyons for their nest sites (Johnson and Johnson 1985). The recovery plan for the Mexican Spotted Owl recommends that mixed conifer and pine-oak woodland types on slopes greater than 40 percent be protected for the conservation of this owl.

A mated pair of adult Spotted Owls may use the same home range and general nesting areas throughout their lives. A pair of owls requires approximately 800 ha (1,976 ac) of suitable nesting and foraging habitat to ensure reproductive success. Incubation is carried out by the female. The incubation period is approximately 30 days, and most eggs hatch by the end of May. Most owlets fledge in June, 34 to 36 days after hatching (USFWS 1995). The owlets are "semi-independent" by late August or early September, although juvenile begging calls have been heard as late as September 30. Young are fully independent by early October. The non-breeding season runs from September 1 through February 28. Although seasonal movements vary among owls, most adults remain within their summer home ranges throughout the year.

The diet of Mexican Spotted Owls nesting in canyons consists primarily of woodrats (*Neotoma* spp.) and mice (*Peromyscus* spp.) with lesser amounts of rabbits, birds, reptiles, and arthropods (Willey 2013). The relative abundance of prey types in Mexican Spotted Owl pellets collected at LANL are listed in Table A-1 in the Appendix. Ganey and Balda (1994) found core areas of individuals (i.e., where owls spent 60 percent of their time) averaged 134 ha (331 ac), and core areas for pairs averaged 160 ha (395 ac).

1.3 Threats

The Mexican Spotted Owl was listed as threatened because of destruction and modification of habitat caused by timber harvest and fires, increased predation on owls associated with habitat fragmentation, and a lack of adequate protective regulations.

2.0 IMPACT OF HUMAN ACTIVITIES

2.1 Introduction

The primary threats to Mexican Spotted Owls on DOE property around LANL property are 1) impacts to habitat quality from LANL operations and 2) disturbance of nesting owls. This section provides a review and summary of scientific knowledge of the effects of various types of human activities on the Mexican Spotted Owl and provides an overview of the current levels of activities at LANL.

2.2 Impacts on Habitat Quality

2.2.1 Development

The type of habitat used by Mexican Spotted Owls, late seral stage forests with large trees, are usually not found in large quantities near developed areas or near areas that have had recent agricultural or forest product extraction land uses. Therefore, Mexican Spotted Owls are generally not found near developments. Whether it is the development itself or a lack of suitable habitat that discourages colonization of these areas by Mexican Spotted Owls is unknown.

Areas of LANL vary from remote undeveloped areas to heavily developed and/or industrialized facilities. Most LANL facilities are situated atop mesas, primarily in the northern and western portion of the DOE property. LANL is bounded by developed residential, industrial, and retail areas along its northern boundary (the town of Los Alamos) and by residential and retail development along a portion of its eastern boundary (the town of White Rock). Three major paved roads traverse LANL from northeast to southwest. Sandia, Pajarito, and Los Alamos canyons have paved roads within AEIs, and several AEIs have dirt roads along at least a portion of the canyon bottom. AEIs containing paved or dirt roads in the canyon bottoms have not been occupied at LANL (Hathcock et al. 2010).

2.2.2 Ecological Risk

There is no specific information on the impact of chemicals on the Mexican Spotted Owl, although experience with other raptor species suggests that exposure to polychlorinated biphenyls (PCBs), dichloro-diphenyl-trichloroethane (DDT) and its derivatives, and other organophosphate or organochlorine pesticides would probably be harmful. Exposure to other chemicals could also be harmful (Cain 1988).

LANL completed three ecological risk assessments that included the Mexican Spotted Owl between 1997 and 2009. The ecological risk assessment process involves using computer modeling to assess potential effects to animals from chemicals of potential concern (COPCs) that have been detected in the environment. All of the following ecological risk assessments concluded that, on average, no appreciable impact is expected to Mexican Spotted Owls from COPCs (Gallegos et al. 1997; Gonzales et al. 2004; Gonzales et al. 2009).

2.2.3 Disturbance

2.2.3.1 Pedestrians and Vehicles

Based on work with other raptors, LANL biological resources SMEs assume that Mexican Spotted Owls would likely be disturbed by the approach of either pedestrians or vehicles. At an equal distance, pedestrians are frequently more disturbing to raptors than vehicles (Grubb and King 1991). Brown and Stevens (1997) reported that during surveys in Grand Canyon National Park, 22 times more Bald Eagles were found in canyon reaches with low human recreational use compared to reaches with moderate to high human recreational use. Human activity 100 m (328 ft) from Bald Eagle nests in Alaska caused clear and consistent changes in behavior of breeding eagles (Steidl and Anthony 2000).

Swarthout and Steidl (2001) found that both juvenile and adult roosting Mexican Spotted Owls were unlikely to alter their behavior in the presence of a single hiker at distances greater than 55 m (180 ft). Swarthout and Steidl (2003) concluded that cumulative effects of high levels of short-duration recreational hiking near Mexican Spotted Owl nests may be detrimental.

Many canyon bottoms and mesa tops at LANL have dirt roads traversing them. Most of these roads are gated. However, these roads are accessible to LANL employees and some of them are accessible to the public on foot or by bike. LANL biological resources SMEs have found that AEIs are occupied less often if there is recreational access into a canyon (Hathcock et al. 2010).

2.2.3.2 Aircraft

Ground-based disturbances appear to impact raptor reproductive success more than aerial disturbances (Grubb and King 1991). Grubb and Bowerman (1997) concluded that an exclusion of aircraft within 600 m (1,968 ft) of Bald Eagle nest sites would limit Bald Eagle response frequency to 19 percent.

Delaney et al. (1999) found for Mexican Spotted Owls that chainsaws consistently elicited higher response rates than helicopters at similar distances. Owl flush rates did not differ between nesting and non-nesting seasons. No owls flushed when noise stimuli (helicopter or chainsaws) were at distances greater than 105 m (344 ft). Distance was generally a better predictor of owl response to helicopter overflights than sound level.

LANL is restricted airspace, and planes infrequently fly less than 609 m (2,000 ft) above ground level. The County of Los Alamos operates an airport along the northern edge of LANL. The airport is located on the southern rim of Pueblo Canyon. Most flights approach and depart to the east of the airport, over the Rio Grande.

2.2.3.3 Explosives

There is no specific information on the reaction of Mexican Spotted Owls to explosives detonation currently available. Explosive blasts set off 120 to 140 m (393 to 459 ft) from active Prairie Falcon (*Falco mexicanus*) nests caused perched Prairie Falcons to flush from perches 79 percent of the time, and, in 26 percent of the cases, caused incubating Prairie Falcons to flush from nests. Measured sound levels at aerie entrances during blasts ranged from 129 to 141 decibel (dB) (Holthuijzen et al. 1990). Explosives blasting for dam construction 560 to 1,000 m (1,837 to 3,280 ft) from active Prairie Falcon nests caused a change in behavior 26 percent of the time, and

birds flushed in 17 percent of all cases. No incubating birds flushed (Holthuijzen et al. 1990). Brown et al. (1999) found little activity change in roosting or nesting Bald Eagles and no population-level impacts from weapons detonations at the Aberdeen Proving Ground. Holthuijzen et al. (1990) found that a 167-g (5.89-oz) charge of Kinestik produced noise levels between 138 and 141 dB at 100 m (328 ft), and that a 500-g (17.6-oz) charge of TNT produced noise levels between 144 and 146 dB at 100 m (328 ft). A 20-kg (44-lb) charge of TNT produced noise levels that measured 163 dB at 100 m (328 ft) (Paakkonen 1991).

Measurements of noise levels during explosives testing were conducted at three locations at LANL using quantities of high explosives ranging from 4.5 to 67.5 kg (10 to 148 lb) of TNT during six shots. Noise levels increased during the test from a background level of 31 dB(A)[1] to a range between 64 and 71 dB(A) during shots at a distance of 1.8 km (1.1 mi). At a distance of 4.3 km (2.67 mi), noise levels rose from a background range of 35 to 64 dB(A) to a range of 60 to 63 dB(A) (Vigil 1995). At a distance of 6.7 km (4.16 mi), noise levels rose from a background range of 38 to 51 dB(A) to a range of 60 to 71 dB(A) (Burns 1995). LANL biological resources SMEs estimated that the noise from a shot at the Dual-Axis Radiographic Hydrodynamic Test (DARHT) Facility would be 150 dB(A) at the source and 80 dB(A) at 400 m (1,312 ft) (Keller and Risberg 1995). LANL biological resources SMEs found that Mexican Spotted Owl AEIs located within the explosives testing buffer area were occupied more frequently than AEIs in other locations (Hathcock et al. 2010). This is likely due to the strict access control in explosives areas which limit human activity and development in the canyon bottoms.

2.2.3.4 Other Sources of Noise

Major noise-producing activities at LANL include automobile and truck traffic and noise associated with office buildings, construction activities, a live-fire range, and explosives testing. Also, there is noise associated with aircraft traffic at the Los Alamos County airport. Construction and maintenance activities involved with operations at LANL are fairly common. In addition, implementation of the 2005 Compliance Order on Consent (NMED 2005) issued by the New Mexico Environmental Department (NMED) has resulted in an increased frequency of drilling groundwater monitoring wells in protected habitat at LANL. Also, forest fuels management operations use chainsaws, chippers, and other noise-generating equipment. The 2010 National Pollutant Discharge Elimination System (NPDES) Individual Permit (EPA 2010) issued by the Environmental Protection Agency (EPA) requires sediment control features such as berms and small rock check dams to be installed at various sites with stormwater runoff; these are sometimes installed in protected habitat. LANL biological resources SMEs conducted a study of noise levels in canyons and found that the primary sources of noise exceeding 55 dB(A) were cars and trucks. Readings taken near flowing water were up to 11 dB(A) higher than readings taken elsewhere. The average dB(A) in canyons near paved roads ranged from 41 to 62, with maximum values ranging from 62 to 74. Away from paved roads 1.6 km (1 mi) or more, average dB(A) in canyons ranged from 37 to 50, with all but one average below 45. Maximum dB(A) away from paved roads ranged from 38 to 76 [76 dB(A) was measured during a thunder clap] (Huchton et al. 1997).

[1] Sound can be measured as decibels (dB), C-weighted dB [dB(C)], or A-weighted dB [dB(A)]. The dB(A) measurement best resembles the response of the human ear by filtering out lower and higher frequency sound not normally heard by the human ear.

Noise measurements were conducted by LANL biological resources SMEs at the Los Alamos County airport and in Bayo and Pueblo canyons, including the Los Alamos County Sewage Treatment Facility, in December 1997. Sound levels near the airport runway during the maximum use time (6:30 to 7:30 am) had background values averaging 54 dB(A). Noise during plane arrivals ranged from 47 to 63 dB(A). No measurements were collected during plane take-off. Sound measurements conducted in the bottoms of Pueblo and Bayo canyons ranged from 37 to 40 dB(A) in most areas of the canyon. At the sewage treatment facility parking lot during a working day, the average dB(A) during a three-minute period was 46 (range 45 to 49). At the intersection of the road going into Pueblo Canyon with State Road 502, the average dB(A) during a three-minute period was 60 (range 41 to 70).

LANL biological resources SMEs conducted sound measurements at successive distances from an industrial area near a canyon rim, into the canyon, and to the opposite rim, using a C-weighted decibel scale (Keller and Foxx 1997). Measurements of noise levels using the C-weighted decibel scale are greater than if measured using A-weighted decibels. The average background noise on the mesa was 65.8 dB(C) [with a range of 43–81 dB(C)]. The average background noise in the canyon bottom was 62.3 dB(C) [with a range of 54–78 dB(C)]. The average background noise at the bottom of the north-facing slope was 53.8 dB(C) [with a range of 48–64 dB(C)]. Measurements were taken mid-day.

LANL biological resources SMEs measured sound levels from various pieces of construction equipment used at project sites at LANL over 5-minute intervals at distances of 6 to 31 m (20 to 100 ft) (Knight and Vrooman 1999). Average values ranged from 58.5 dB(A) to 80.9 dB(A). Peak values ranged from 75.7 to 155.4 dB(A). Additional data were collected by other LANL operators on specific pieces of construction equipment and on the Security Computer Complex construction site fence perimeter at Technical Area 3 before and during construction (Knight and Vrooman 1999). The average noise levels before construction began was 56.6 dB(A), and the average during construction was 82.1 dB(A).

LANL biological resources SMEs conducted a series of sound measurements at LANL to investigate background noise levels around AEIs (Vrooman et al. 2000). Background noise levels were significantly higher in daytime than in nighttime. AEIs with greater than 10 percent developed area in their buffers had significantly higher levels of background noise than undeveloped AEIs. Mean background sound levels were 51.3 dB(A) in developed AEIs and 39.6 dB(A) in undeveloped AEIs. The LANL biological resources project review process uses the individual AEI background measurements from Vrooman et al. (2000) to screen project activities for increases more than 6 dB(A) above background.

LANL biological resources SMEs took sound level measurements of heavy equipment use associated with concrete recycling on Sigma Mesa at LANL in 2004 (Hansen 2004). At this location, background noise levels at two different locations were 55.2 and 58.8 dB(A). Operation of a dump truck hauling and dumping concrete increased noise levels above background by a mean of 22.7 dB(A) at 30 m (98 ft) and 2.4 dB(A) at 80 m (262 ft). Additional sound level measurements were taken in the same general area on Sigma Mesa in 2005 as part of a BA for the operation of an asphalt batch plant (Hansen 2005). Measurements were taken on the north rim of Mortandad Canyon (south of the asphalt batch plant at distances of approximately 30 to 122 m (100 to 400 ft), at the bottom of Mortandad Canyon, approximately 183 to 244 m (600 to 800 ft) from the asphalt

batch plant, and on the south rim of Mortandad Canyon approximately 305 m (1,000 ft) from the asphalt batch plant. Background noise levels at the various locations ranged from 41.1 to 48.7 dB(A). The only locations with increases greater than 3 dB(A) during operation of the asphalt batch plant were the locations on the north rim of Mortandad Canyon, within 122 m (400 ft) of the asphalt batch plant. Noise from the operation of the asphalt batch plant was not detected in the bottom of Mortandad Canyon or on the south rim.

LANL biological resources SMEs took sound level measurements around the LANL Biosafety Level 3 (BSL-3) Laboratory with the heating, ventilation, and air conditioning (HVAC) system on and with it off (Hansen 2009). The area to the north of the BSL-3 is developed, the area to the south is not. Background noise levels north of the facility ranged from 53.6 to 57.6 dB(A). Background noise levels south of the facility ranged from 41.6 to 49.7 dB(A). Noise from the HVAC system was detected at 25 m (82 ft) from the facility on both sides, but was not detected at 81 m (266 ft) on the north side, or at 107 m (351 ft) on the south side.

Overall, these studies appear to show that areas adjacent to or within developed areas or paved roads are likely to have daytime average background noise levels between 45 and 63 dB(A). Less disturbed areas are likely to have average background noise levels between 37 and 50 dB(A).

2.2.3.5 Artificially Produced Light

There is no information available on the effects of artificially produced light on Mexican Spotted Owls. Under the Los Alamos County Code, commercial site development plans are reviewed to ensure that lighting serves the intended use of the site while minimizing adverse impacts to adjacent residential property (Section 16-276). Section 16-276 of the County Code includes light source measurement limitations by zoning district. The code allows off-site light to be 0.5 foot candles (fc) in residential areas. By comparison, full moonlight measures 0.1 fc, and a crescent moon was measured at 0.01 fc. Table A-2 in the Appendix presents preliminary light measurements in fc.

Preliminary surveys were conducted for light levels within Los Alamos Canyon at the Omega Reactor (Keller and Foxx 1997). The Omega Reactor was brightly lit for purposes of security; therefore, total light intensity was greater than the average street lighting. Measurements were conducted at a light pole with an open parking lot at the reactor as the source. Trees did not obscure the area. Using the relationship of light intensity reducing as a square of the distance, calculations using the field data indicated that at 30 m (98 ft) from the source the light levels would be equivalent or nearly equivalent to full moonlight.

3.0 AEI GENERAL DESCRIPTION FOR MEXICAN SPOTTED OWL

An AEI consists of two areas—a core and a buffer. The core of the habitat is defined as suitable canyon habitat from rim to rim and 100 m (328 ft) out from the top of the canyon rim. The buffer area is 400 m (1,312 ft) wide extending outward from the edge of the core area. Although adult Mexican Spotted Owls may be found within their home range anytime throughout the year, the primary threat from disturbance to the owls is during the breeding season when owl pairs are tied to their nest sites. Therefore, management of disturbance in Mexican Spotted Owl AEIs is concentrated on the breeding season.

3.1 Method for Identifying a Mexican Spotted Owl AEI

The original location of each Mexican Spotted Owl AEI was identified using a habitat model developed by Johnson (1998) that classified nesting and roosting habitat for Mexican Spotted Owls using topographic characteristics and vegetative diversity. LANL biological resources SMEs compared the results from the Johnson (1998) model to a different model identifying slopes >40 percent in mixed conifer and ponderosa pine cover types at LANL. Areas identified from the Johnson (1998) model application to LANL that were over five contiguous 30 × 30 m (97 × 98 ft) pixels in size, were above 1,980 m (6,496 ft) in elevation, and that had mixed conifer or ponderosa pine forest cover, were considered suitable Mexican Spotted Owl habitat. Where suitable habitat was identified, AEI core area boundaries were established to include the canyons and 100 m (328 ft) outward from the canyon rims.

A new Mexican Spotted Owl habitat model was developed and refined for application on LANL following the Cerro Grande wildfire (Hathcock and Haarmann 2008). This model incorporated finer-scale vegetation characteristics into the Mexican Spotted Owl habitat quality assessment. This model was used to redelineate the boundaries of the Mexican Spotted Owl AEIs at LANL in 2005 following wildfire, drought, and a regional bark beetle outbreak (USFWS consultation number 22420-2006-I-0010).

The new core boundaries were delineated with an area approximately 0.4 km (0.25 mi) from the edge of the nearest suitable habitat, up and down canyon. Core boundaries were established along readily recognizable geologic features or anthropogenic features in the terrain wherever possible to facilitate the ease of identification of core boundaries when in the field.

3.2 Location and Number of Mexican Spotted Owl AEIs

There are currently five Mexican Spotted Owl AEIs on LANL, each encompassing one or more canyons. In general, the AEI cores are centered in canyons on the western side of LANL. The canyons with AEIs are Cañon de Valle, Water, Pajarito, Los Alamos, Sandia, Mortandad, and Three-Mile. AEI boundaries are maintained in the LANL biological resources program GIS database.

4.0 AEI MANAGEMENT

4.1 Overview

This AEI management section provides guidelines for LANL operations to reduce or eliminate the threats to Mexican Spotted Owls from 1) habitat alterations that reduce habitat quality and 2) disturbance of breeding or potentially breeding owls. Habitat alterations are considered for all AEIs and for both core and buffer areas. Disturbance activities to owls are considered only for occupied AEIs and only for impacts on core areas. Developed areas (see Part I, Section 3.1) that have ongoing baseline levels of activities and are not suitable habitat for Mexican Spotted Owls have different restrictions than undeveloped core or buffer areas. Therefore, the location of the disturbance activity within the AEI, the occupancy status of the AEI, and the type of activity all affect whether or not the activity is allowable. AEIs for different species may overlap, and an activity must meet the guidelines of all applicable site plans to be allowable.

4.2 Definition and Role of Occupancy in AEI Management

Summary: The occupancy status of an AEI affects what disturbance activities are allowable in different areas (core, buffer, developed) of the AEI. All Mexican Spotted Owl AEIs are considered occupied during March 1 through August 31 or until surveys show the AEI to be unoccupied. See the Activity Table (Table 1, Section 4.5.2) for restrictions on occupied undeveloped core and buffer areas, and Part I, Section 3.1 for restrictions on developed areas.

Occupancy simply refers to whether or not an AEI is occupied during a species' period of sensitivity. For Mexican Spotted Owls, LANL is primarily concerned with protecting the owls from disturbance during the breeding season. Because individuals may colonize suitable habitat, all Mexican Spotted Owl AEIs are treated as though they are occupied from March 1 through August 31 or until surveys show an AEI to be unoccupied. Mexican Spotted Owl surveys are conducted from late March through June. In general, surveys in areas with ongoing or proposed projects are completed by May 15. If a nest is located during surveys, then the AEI can be treated as unoccupied except for the area within a 400 m (1,312 ft) radius of the nest site. Because owls are not as sensitive to disturbance during the non-breeding season, Mexican Spotted Owl AEIs are treated as unoccupied from September 1 to February 28.

The occupancy status of an AEI affects what activities are allowable in the AEI. Although activities causing habitat alterations are restricted in all AEIs, disturbance activities are restricted only in occupied AEIs. The Activity Table (Table 1, Section 4.5.2) provides dates and levels of allowable disturbance activities within occupied Mexican Spotted Owl AEIs under the guidelines of this site plan. Contact a LANL biological resources SME to find out the current occupancy status of an AEI (http://int.lanl.gov/environment/bio/controls/index.shtml).

4.3 Introduction to AEI Management Guidelines

Summary: The habitat alterations section and the activities section give the guidelines for habitat alteration and disturbance activities, respectively, for Mexican Spotted Owl AEIs. The flow chart (see Figure 1) provides a quick reference to determine what, if any, guidelines need to be consulted for a specific activity. Protective measures give management practices that should be applied when working or considering work in AEIs. LANL biological resources SMEs are available to answer questions and provide advice (http://int.lanl.gov/environment/bio/controls/index.shtml).

Sections 4.4 and 4.5 provide the guidelines for habitat alterations and allowable activities in AEI core and buffer areas. Section 4.4 describes what and where habitat alterations are allowed under the guidelines of this site plan. Section 4.5 describes what, when, and where disturbance activities are allowed in occupied AEIs under the guidelines of this site plan. If an activity does not meet the restrictions given in the guidelines, the activity must be individually reviewed for ESA compliance. This site plan only provides guidelines for Mexican Spotted Owl AEIs. If an activity is desired in an area with overlapping AEIs, all applicable site plans must be consulted. AEI maps show the location of all AEIs in an area. Section 4.6 describes management practices that should be applied when working or considering work in an AEI. LANL biological resources SMEs are available to answer questions and provide advice (http://int.lanl.gov/environment/bio/controls/index.shtml).

4.4 Definition of and Restrictions on Habitat Alterations

4.4.1 Definition of Habitat Alterations

Habitat alteration includes any action that alters the soil structure, vegetative components necessary to the species, prey quality and quantity, water quality, hydrology, or noise or light levels in undeveloped areas of an AEI. Long-term means the alteration lasts for more than one year. For physical disturbances, in general, any activity that can be accomplished by one person with a hand tool is generally not considered habitat alteration; any activity that requires mechanized equipment on a landscape is habitat alteration. An actual activity may take place outside of the AEI and will be considered habitat alteration if consequences of the activity have effects inside the AEI core.

The habitat components most important to Mexican Spotted Owls include vegetative structure, food quality and quantity, and disturbance levels, including noise and light. The forest structure within a canyon designated as a Mexican Spotted Owl AEI is important because it provides roost sites and a suitable habitat for nesting and foraging. Trees along the canyon rim are used for foraging and territorial calling, and they shelter the canyon interior from light and noise disturbances.

A long-term change in light or noise levels within the undeveloped core of an AEI is considered to be a habitat alteration if it increases average noise levels by $\geq$6 dB(A) during any portion of the 24-hour day, or it increases average light levels by $\geq$0.05 fc at night. Changes in noise and light levels are measured at the core area boundary if the source is outside the core area, or at 10 m (33 ft) from the source if the source is inside the undeveloped core area. Impacts of changes in developed areas on undeveloped cores are measured at the developed area boundary if it is within the core, or at the core area boundary if the developed area is outside of the core.

4.4.2 Fuels Management Practices to Reduce Wildfire Risk

The recovery plan for the Mexican Spotted Owl lists stand-replacing wildfires as a primary threat to their habitat and encourages land managers to reduce fuel levels and abate fire risks in ways compatible with owl presence on the landscape (USFWS 1995). Within undeveloped core areas, on slopes >40 percent, in the bottoms of steep canyons, and within 30 m (100 ft) of a canyon rim, thinning of trees <22 cm (9 in) diameter at breast height, treatment of fuels, and prescribed and natural prescribed fires are allowed. Exceptions allowing trees >22 cm (9 in) to be thinned within 30 m (100 ft) of buildings are granted to protect facilities. Large logs (>30 cm [11.8 in] midpoint diameter) and snags should be retained. Thinning within core areas not meeting the characteristics listed above, and in buffer areas, may include trees of any size to achieve 8 m (25 ft) spacing between tree crowns. However, clear cutting is not allowed in undeveloped core areas.

For health and safety reasons, any trees within 30 m (100 ft) of buildings, but outside a developed area, may be thinned to achieve 8 m (25 ft) spacing between crowns. Habitat alterations including thinning are not restricted in developed areas. However, LANL biological resources SMEs encourage the retention of trees and snags along canyon rims if the rim is in a developed area. Because of the extreme fire danger associated with firing sites and the potential impact of a fire on Mexican Spotted Owl habitat, firing sites and burn areas are treated separately for the purposes of fuels management. Trees within 380 m (1,246 ft) of firing sites and burn areas in both core and

buffer areas may be thinned to a 15 m (49 ft) spacing between trees everywhere except on slopes >40 percent or in the bottoms of steep canyons. Any tree over 22 cm (9 in) diameter at breast height within 380 m (1,246 ft) of a firing site may be delimbed to a height of 2 m (6 ft) to help prevent crown fires.

In historically occupied core areas, fuels treatment may not exceed 10 percent of the undeveloped core area and is not allowed within 400 m (1,312 ft) of nesting areas. In occupied core areas, forest management activities must take place during the nonbreeding season (September 1 to February 28) (USFWS 1995). Fuels management activities that are allowable in core areas have to be reported to LANL biological resources SMEs for tracking.

4.4.3 Utility Corridors

Habitat alterations such as cutting down trees that threaten power lines are allowed within 8 m (26 ft) of either side of an existing utility line in all areas of an AEI (Trujillo and Racinez 1995). New utility lines and utility lines requiring clearance of a right-of-way greater than 16 m (52 ft) total must be individually reviewed for ESA compliance. Disturbance activities must follow the guidelines given in the Activities Table (Table 1, Section 4.5.2) for occupied AEIs.

4.4.4 Restrictions on Habitat Alterations

Summary: Habitat alterations other than fuels management practices and utility corridor maintenance are not allowed in undeveloped core areas. Habitat alterations in buffer areas are restricted to 2 ha (5 ac) per project, with a maximum cap on development in the buffer for each AEI. Habitat alterations other than fuels management and utility corridor maintenance must be reported to LANL biological resources SMEs for tracking (http://int.lanl.gov/environment/bio/controls/index.shtml).

Habitat alterations other than the fuels management practices and utility corridor maintenance described above are not allowed in undeveloped core areas under the guidelines of this site plan. If a project or activity is planned that would alter habitat in an undeveloped core area, it must be individually evaluated for ESA compliance. Habitat alterations in undeveloped buffer areas other than the fuels management activities and utility corridor maintenance described above are restricted to 2 ha (5 ac) in area per project and are subject to other restrictions including light and noise effects in the core (see Section 2.2.3). Projects in the buffer over 2 ha (5 ac) in size will require individual ESA compliance review.

Habitat alterations in a buffer area other than the fuels management and utility corridor maintenance described above must be reported to LANL's biological resources SMEs for tracking (http://int.lanl.gov/environment/bio/controls/index.shtml). There is a cumulative maximum area that can be developed in each AEI's buffer. Once that cumulative area is reached, all habitat alterations in a buffer will require individual ESA reviews for compliance.

4.5 Definition of and Restrictions on Disturbance Activities

4.5.1 Definitions of Disturbance Activities

LANL biological resources SMEs considered six categories of activities that might cause disturbance in an AEI. Most of the categories were first identified in the document "Peregrine

Falcon Habitat Management in the National Forests of New Mexico," prepared for the United States Forest Service (Johnson 1994). LANL biological resources SMEs added explosives detonation, other light production, and other noise production to provide the most comprehensive list of activities possible, thereby reducing the need for individual review of activities for ESA compliance. The categories of activities are people, vehicles, aircraft, other light production, other noise production, and explosives detonation. LANL biological resources SMEs have defined low, medium, and high levels of impact for these activities except for explosives detonation. Activity levels for explosives detonation have been designed to follow the guidelines agreed upon by LANL, DOE, and USFWS in the DARHT BA (Keller and Risberg 1995). Restrictions on explosives detonation are described in the definition of the activity, but are not included in the Activity Table (Table 1, Section 4.5.2). These six categories of activities are restricted only in AEIs that are classified as occupied.

People—includes any entry of people into an AEI on foot.

- Low impact is the presence of three or fewer people per project and duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of people or the duration criteria.
- High impact is the exceedance of both the number of people and the duration criteria.

Vehicles—includes the entry of any two-axle highway vehicle, all-terrain vehicle, or motorized machinery into an AEI by any route other than a paved road or an improved gravel road.

- Low impact is the presence of two or fewer vehicles per project and duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of vehicles or the duration criteria.
- High impact is the exceedance of both the number of vehicles and the duration criteria.

Aircraft—includes the operation of any aircraft below an elevation of 600 m (2,000 ft) above the highest ground level in the local vicinity.

- Low impact is the presence of one single-engine airplane and the duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of aircraft or the duration criteria.
- High impact is the exceedance of both the number of aircraft and the duration criteria.

Any use of helicopters, jet airplanes, and propeller airplanes with two or more engines is classified as medium impact or above, depending on duration.

Other Light Production—includes any activity not previously listed that causes additional light to occur in an AEI core area. For example, plans for construction of a new building at the edge of a developed area may call for lighting at night to facilitate nighttime work that impacts an undeveloped core area.

- Low impact is the increase of light intensity by ≤0.05 fc and a duration of one night or less per project per breeding season.
- Medium impact is the exceedance of either the intensity or duration criteria.
- High impact is the exceedance of both the intensity and duration criteria.

Measurements for increases in light are taken at the AEI core area boundary closest to the light source if the source is outside the core and at 10 m (33 ft) from the source if the source is inside the core. Light measurements for developed areas are taken at the edge of the developed area if the developed area is within an AEI core or at the closest core boundary if the developed area is outside of an AEI core.

Other Noise Production—includes any activity not previously listed except for explosives detonation that causes additional noise to occur in an AEI. For example, operation of machinery creates noise.

- Low impact is increasing noise levels in an AEI core by 6 dB(A) or less for one day or less per project per breeding season.
- Medium impact is the exceedance of either the level or the duration criteria.
- High impact is the exceedance of both the level and the duration criteria.

Measurements for increases in noise are taken at the AEI core boundary closest to the noise source if the source is outside the core and at 10 m (33 ft) from the source if the source is inside the core. Noise measurements for developed areas are taken at the edge of the developed area if the developed area is within an AEI core or at the closest core boundary if the developed area is outside of an AEI core.

Explosives Detonation—includes the use of high explosives for any purpose. LANL biological resources SMEs did not define low, medium, and high levels of this activity because of the difficulty of determining levels for a shot before actually doing the shot. For the purpose of explosives detonation near Mexican Spotted Owl AEIs, occupied habitat is defined as the area within 400 m (1,312 ft) of the current year's nest/roost sites or the previous year's nest site if a current site has not been identified. No explosives detonation will take place within 400 m (1,312 ft) of nest/roost sites in occupied habitat between March 1 and August 31. Explosives detonation at night at sites within 400 to 800 m (1,312 to 2,624 ft) of a nest site in occupied habitat is restricted to once a month from March 1 and August 31.There are no restrictions on daytime explosives testing between 400 and 800 m (1,312 to 2,624 ft). There are no restrictions between September 1 and February 28 or in unoccupied habitat. Explosives detonation adjacent to AEIs that have not previously been recorded by LANL as occupied will have no restrictions unless surveys detect Mexican Spotted Owls. Explosives tests not allowed under the guidelines of this site plan must be individually reviewed for ESA compliance.

4.5.2 Activity Table

The dates shown in the Activity Table (Table 1) are the dates between which the activity in the row is restricted under the guidelines of this site plan. All AEIs are considered occupied from March 1 to August 31 or until surveys show an AEI to be unoccupied. If owls are detected, AEIs

are considered occupied until August 31 within 400 m (1,312 ft) of the nest site. Consult with LANL biological resources SMEs to find out occupancy status of AEIs and what locations are within 400 m (1,312 ft) of nest sites (http://int.lanl.gov/environment/bio/controls/index.shtml).

Table 1. Restrictions on Activities in Undeveloped Occupied Mexican Spotted Owl AEIs

		Core	Buffer
People			
	Low	No Restrictions*	No Restrictions
	Medium	March 1 to August 31	No Restrictions
	High	March 1 to August 31	No Restrictions
Vehicles			
	Low	No Restrictions	No Restrictions
	Medium	March 1 to August 31	No Restrictions
	High	March 1 to August 31	No Restrictions
Aircraft			
	Low	March 1 to August 31	No Restrictions
	Medium	March 1 to August 31	March 1 to May 15
	High	March 1 to August 31	March 1 to August 31
Other Light Production			
	Low	March 1 to August 31	No Restrictions**
	Medium	March 1 to August 31	No Restrictions**
	High	March 1 to August 31	No Restrictions**
Other Noise Production			
	Low	March 1 to August 31	No Restrictions**
	Medium	March 1 to August 31	No Restrictions**
	High	March 1 to August 31	No Restrictions**
Explosives Detonation (see text in Section 4.5.1)			

*Entry is restricted in core areas that are occupied within 400 m (1,312 ft) of the nest site from March 1 to August 31. If the current nest has not been located, entry is restricted within 400 m (1,312 ft) of the previous year's nest site.

**Noise or light production in the buffer is restricted if the activity would violate core area restrictions on noise or light.

4.6 Protective Measures

Summary: This section provides a list of management practices to apply in Mexican Spotted Owl AEIs.

- Timing of projects must take into account that projects in core areas or projects that violate restrictions for occupied buffer areas must stop on February 28 each year until occupancy status of the AEI is determined.
- Every reasonable effort should be made to reduce the noise from explosives testing within 800 m (2,624 ft) of occupied habitat. Methods to reduce noise could include contained shots, noise shields in the direction of AEI cores, etc. For night shots, every reasonable effort should be made to limit the amount of light directed into AEI core areas.

- Put signs on dirt roads and trails leading into AEIs labeling them as restricted access areas and providing a number to contact for access restrictions.
- Keep disturbance and noise to a minimum.
- Avoid unnecessary disturbance to vegetation (e.g., excessive parking areas or equipment storage areas, off-road travel, materials storage areas, crossing of streams or washes).
- Avoid removal of vegetation along drainage systems and stream channels.
- Avoid all vegetation removals not absolutely necessary.
- Appropriate erosion and runoff controls should be employed to reduce soil loss. The controls must be put in place and periodically checked throughout the life of projects.
- All exposed soils must be revegetated as soon as feasible after construction to minimize erosion.
- In the Los Alamos Canyon AEI, development should be focused away from undeveloped areas on the western end of the AEI.

5.0 LEVELS OF DEVELOPMENT IN AEI CORE AND BUFFERS

5.1 Allowable Habitat Alteration in the Buffer Areas

The following quantifications of development and guidance for allowable habitat alteration in buffer areas were published and consulted on in the 1999 version of the HMP. Most AEIs changed in dimensions during the 2005 redelination of the habitats, and many have experienced additional development. Development in buffer habitat was not addressed during the 2005 consultation. Many projects were reviewed and received USFWS concurrence between 1999 and 2014.

LANL biological resources SMEs have provided the current development status for each of the AEIs at the end of each paragraph. The percent developed numbers were derived with the original size of the AEIs.

Cañon de Valle—In 1999, 16.3 ha (40.3 ac, 2.9 percent) of the core was developed and 52.2 ha (129 ac, 6.8 percent) of the DOE-controlled buffer was developed. For this AEI, it was recommended that only an additional 25.30 ha (62.5 ac) of the AEI buffer be developed. The 1999 HMP stated that once this cap is reached or a large-scale project is proposed, additional consultation with USFWS would be required. By 2011, 28 ha (69.2 ac) of the core and 84 ha (207.5 ac) of the buffer had been developed.

Pajarito—In 1999, there were 6.7 ha (16.5 ac, 5.5 percent) of the core developed and 75.1 ha (186.5 ac, 16.7percent) developed in the buffer. LANL biological resources SMEs recommended only an additional 35 ha (86.4 ac) of the buffer be developed before additional USFWS consultations take place. The 1999 HMP stated that once the cap is reached or a single large-scale project is proposed, additional consultation would be required. By 2011, 27 ha (66.7 ac) of the core and 89 ha (220 ac) of the buffer had been developed.

Los Alamos—In 1999, there were 77.16 ha (190 ac) of the core developed and 167.2 ha (413.1 ac) developed in the buffer. For this AEI, LANL biological resources SMEs recommended only an

additional 28.6 ha (70.6 ac, 5.9 percent) of the DOE-owned buffer be developed before additional USFWS consultations take place.

Because this AEI is so heavily developed, additional development was restricted to a few selected areas within the buffer. Development outside of these areas requires individual review for ESA compliance. A large percentage of this AEI was removed in the 2005 and 2013 BAs. By 2011, 94 ha (232.2 ac) of the core and 181 ha (447.3 ac) of the buffer had been developed.

Sandia-Mortandad—In 1999, 98.4 ha (243.2 ac) of this AEI on DOE lands were developed, including 29 ha (71.7 ac, 10.7 percent) of the core and 75.1 ha (185.6 ac, 16.7 percent) of the buffer. For this AEI, LANL biological resources SMEs recommended only an additional 38.1 ha (94.1 ac) of the buffer be developed before additional USFWS consultations take place. Once this cap is reached or a single large-scale project is proposed, additional consultation will be required. By 2011, 45 ha (111.2 ac) of the core and 83 ha (205.1 ac) of the buffer had been developed.

Three Mile—In 1999, 25.3 ha (62.5 ac) of this AEI on DOE lands were developed, including 3.8 ha (9.4 ac, 2.8percent) of the core and 21.5 ha (51.1 ac, 7.3 percent) of the buffer. For this AEI, LANL biological resources SMEs recommended only 64.3 ha (158.8 ac) additional area of buffer be developed before additional USFWS consultations take place. Once this cap is reached or a single large-scale project is proposed, additional consultation will be required. By 2011, 12 ha (29.6 ac) of the core and 37 ha (91.4 ac) of the buffer had been developed.

III. AREA OF ENVIRONMENTAL INTEREST SITE PLAN FOR THE SOUTHWESTERN WILLOW FLYCATCHER

1.0 SPECIES DESCRIPTION—SOUTHWESTERN WILLOW FLYCATCHER

1.1 Status

In 1995, the USFWS designated the Southwestern Willow Flycatcher as a federally endangered species (60 FR 10693). The USFWS most recently designated critical habitat for the Southwestern Willow Flycatcher in 2005 (70 FR 60885). The most recent recovery plan was published for Southwestern Willow Flycatcher in 2002 (USFWS 2002).

1.2 General Biology

The Southwestern Willow Flycatcher is one of four subspecies of the Willow Flycatcher. The historic range of the Southwestern Willow Flycatcher included Arizona, California, Colorado, New Mexico, Texas, Utah, and Mexico. Currently, this flycatcher breeds in riparian habitats from southern California to Arizona and New Mexico, plus southern Colorado, Utah, Nevada, and far western Texas. In winter it is found in southern Mexico, Central America, and northern South America (USFWS 2002).

Southwestern Willow Flycatchers are present in New Mexico from early May through mid-September and breed from late May through late July (Finch and Kelly 1999; USFWS 2002; Yong and Finch 1997). The flycatcher's nesting cycle is approximately 28 days. Three or four eggs are laid at one-day intervals, and incubation begins when the clutch is complete. The female incubates eggs for approximately 12 days, and the young fledge about 13 days after hatching.

Southwestern Willow Flycatchers typically raise one brood per year (USFWS 2002). Because arrival dates vary, northbound migrant Willow Flycatchers (of all subspecies) pass through areas where Southwestern Willow Flycatchers have already begun nesting. Similarly, southbound migrants (of all subspecies) in late July and August may occur where Southwestern Willow Flycatchers are still breeding. Therefore, it is only during a short period of the breeding season (approximately June15 through July 20) that one can assume that a Willow Flycatcher seen within Southwestern Willow Flycatcher range is probably of that subspecies (USFWS 2002).

The Southwestern Willow Flycatcher only nests along rivers, streams, and other wetlands. It is found in close association with dense stands of willows (*Salix* spp.), arrowweed (*Pluchea* spp.), buttonbush (*Cephalanthus* spp.), tamarisk (*Tamarix* spp.), Russian olive (*Eleagnus angustifolia* L.), and other riparian vegetation, often with a scattered overstory of cottonwood (*Populus* spp.) (USFWS 2002). The size of vegetation patches or habitat mosaics used by Southwestern Willow Flycatchers varies considerably and ranges from as small as 0.8 ha (1.9 ac) to several hundred hectares (Hatten and Paradzick 2003). The Southwestern Willow Flycatcher nests in thickets of trees and shrubs approximately 2 to 15 m (6 to 49 ft) tall, with a high percentage of canopy cover and dense foliage from 0 to 4 m (0 to 13 ft) above ground. Regardless of the plant species composition or height, occupied sites always have dense vegetation in the patch interior (Allison et al. 2003; USFWS 2002).

The Southwestern Willow Flycatcher is an insectivore. It forages within and occasionally above dense riparian vegetation, taking insects on the wing and gleaning them from foliage. The flycatcher's prey includes flies, bees, wasps, ants, beetles, moths, butterflies, grasshoppers, crickets, dragonflies, damselflies, and spiders (Durst et al. 2008; Wiesenborn and Heydon 2007).

1.3 Threats

The current population of Southwestern Willow Flycatchers in the United States is estimated at 1,214 territories (Durst et al. 2006). The distribution of breeding groups is highly fragmented, with groups often separated by considerable distances. This subspecies has suffered declines attributed to extensive loss of its cottonwood-willow habitat and to poor productivity resulting from brood parasitism by Brown-headed Cowbirds (*Molothrus ater*) (USFWS 2002).

2.0 IMPACT OF HUMAN ACTIVITIES

2.1 Introduction

The primary threats to the Southwestern Willow Flycatcher on LANL property are 1) impacts on habitat quality from LANL operations and 2) disturbance of nesting flycatchers. This section includes a review and summary of the known effects of various types of human activities to the Southwestern Willow Flycatcher and an overview of the current levels of activities at LANL within species habitat.

2.2 Impacts on Habitat Quality

2.2.1 Development

Throughout the Southwest, riparian habitats are rare and tend to be small and separated by vast expanses of arid lands. The Southwestern Willow Flycatcher has experienced extensive loss and

modification of its habitat resulting from urban and agricultural development, water diversion and impoundment, channelization of waterways, livestock grazing, off-road vehicle and other recreational uses, and hydrological changes resulting from these and other land uses (USFWS 2002). River and stream impoundments, groundwater pumping, and overuse of riparian areas have altered as much as 90 percent of the Southwestern Willow Flycatcher's habitat (USFWS 2002). Loss of cottonwood-willow riparian forests has had widespread impact on the distribution and abundance of bird species associated with that forest. Development itself may be tolerated if the habitat is left intact.

Because watercourses at LANL tend to be intermittent to ephemeral, riparian habitat is uncommon. There has been extensive degradation of the riparian zone along the Rio Grande caused by feral cattle grazing and flood control operations of Cochiti Lake. There are other riparian/wetland areas on LANL associated with canyon bottoms, the most significant one being Pajarito wetlands in the lower end of Pajarito Canyon. A major paved road traverses the wetlands area in Pajarito Canyon.

2.2.2 Ecological Risk

There is no specific information on the impact of chemicals on Southwestern Willow Flycatcher.

2.2.2.1 Ecorisk Assessment

LANL completed two ecological risk assessments that included the Southwestern Willow Flycatcher between 1997 and 2009. The ecological risk assessment process involves using computer modeling to assess potential effects to animals from COPCs that have been detected in the environment. The ecological risk assessments concluded that, in general, there is a small potential for effects to Southwestern Willow Flycatcher from COPCs (Gonzales et al. 1998; Gonzales et al. 2009).

An ecotoxicological risk assessment for the Southwestern Willow Flycatcher, centered on the Pajarito wetlands, found that between 7 and 16 percent of 100 hypothetical nest sites examined had hazard indices >1.0 and <10.0, depending on the foraging scenario (Gonzales et al. 1998). This indicates a small potential for impacts from chemicals. The primary chemicals driving the risk scenario were pentachlorophenol, aluminum, radium-226, calcium, and thorium-228. Aluminum, radium, and thorium are naturally occurring substances in northern New Mexico.

2.2.3 Disturbance

2.2.3.1 Pedestrians and Vehicles

There is no specific information on the reactions of Southwestern Willow Flycatchers to pedestrians and vehicles available. The recovery plan for the Southwestern Willow Flycatcher recommends providing protected areas, reducing unpredictable activities providing visual barriers, and reducing noise disturbance (USFWS 2002).

2.2.3.2 Aircraft

There is no specific information on the reaction of Southwestern Willow Flycatchers to aircraft available.

LANL lies within restricted airspace and planes infrequently fly less than 609 m (2,000 ft) above ground level. The County of Los Alamos operates an airport along the northern edge of LANL. The airport is located on the southern rim of Pueblo Canyon. Most flights approach and depart to the east of the airport, over the Rio Grande.

2.2.3.3 Explosives

There is no specific information on the reaction of Southwestern Willow Flycatchers to explosives detonation available. The Southwestern Willow Flycatcher AEI is not located close to any explosives testing sites at LANL.

2.2.3.4 Other Sources of Noise

LANL biological resources SMEs do not have good information on the effects of noise, including machinery operation, on Southwestern Willow Flycatchers. However, Southwestern Willow Flycatchers are probably not as sensitive to disturbance as some other threatened or endangered species (USFWS 2002). For a description of noise levels at LANL, see Part I, Section 2.2.3.

2.2.3.5 Artificially Produced Light

There is no information on the effects of artificially produced light on Southwestern Willow Flycatchers available. Under the Los Alamos County Code, commercial site development plans are reviewed to ensure that lighting serves the intended use of the site while minimizing adverse impacts to adjacent residential property (Section 16-276). Section 16-276 of the County Code includes light source measurement limitations by zoning district. The code allows off-site light to be 0.5 fc in residential areas. By comparison, full moonlight measures 0.1 fc, and a crescent moon was measured at 0.01 fc.

3.0 AEI GENERAL DESCRIPTION FOR SOUTHWESTERN WILLOW FLYCATCHER

The AEI consists of two types of areas—core and buffer. Core areas represent wetland areas with suitable vegetation for nesting, primarily dense willows. The buffer area is the area within 100 m (328 ft) of core areas. The Southwestern Willow Flycatcher AEI on LANL consists of two separate core areas. For purposes of this site plan, both core areas and associated buffers are considered one AEI unit.

3.1 Method for Identifying the Southwestern Willow Flycatcher AEI

The core areas were defined by the presence of riparian habitat and suitable wetland vegetation. These areas were identified in 1994 during a survey of wetlands at LANL and mapped using a global positioning system receiver. Wetlands without stands of dense willows at least 2 m (7 ft) tall and 30 m (98 ft) wide were not included in the AEI. The buffer area is the area within 100 m (328 ft) of the core areas.

3.2 Location of the Southwestern Willow Flycatcher AEI

LANL has one AEI for Southwestern Willow Flycatcher. It is composed of two core areas with associated buffers. The AEI core areas are located in the bottom of Pajarito Canyon, on the eastern side of LANL adjacent to Pajarito Road and State Road 4. The boundaries of the Southwestern

Willow Flycatcher AEI are maintained in the biological resources program GIS database at LANL.

4.0 AEI MANAGEMENT

4.1 Overview

This AEI management section provides guidelines for LANL operations to reduce or eliminate the threats to the Southwestern Willow Flycatcher from 1) habitat alterations that reduce habitat quality and 2) disturbance of breeding or potentially breeding flycatchers. Habitat alterations are considered for all AEIs and for both core and buffer areas. Disturbance activities to flycatchers are considered only for occupied AEIs and only for impacts on core areas. Developed areas (see Part I, Section 2.3) with ongoing baseline levels of activities and are not suitable habitat for Southwestern Willow Flycatchers have different restrictions than undeveloped core or buffer areas. Therefore, the location of the disturbance activity within the AEI, the occupancy status of the AEI, and the type of activity all affect whether or not the activity is allowable. AEIs for different species may overlap, and an activity must meet the guidelines of all applicable site plans to be allowable. Protective measures are described as management practices that should be followed when working in AEIs.

4.2 Definition and Role of Occupancy in AEI Management

Summary: The occupancy status of an AEI affects what disturbance activities are allowable in different areas (core, buffer, developed) of the AEI. The Southwestern Willow Flycatcher AEI is considered occupied during May 15 through September 15 or until the surveys show the AEI to be unoccupied. See the Activity Table (Table 2, Section 4.5.2) for restrictions on occupied undeveloped core and buffer areas, and Part I, Section 2.3 for restrictions on developed areas.

Occupancy simply refers to whether or not an AEI is occupied during a species' period of sensitivity. For Southwestern Willow Flycatchers, LANL biological resources SMEs are primarily concerned with protecting the birds from disturbance during the breeding season. Because individuals may colonize suitable habitat, the Southwestern Willow Flycatcher AEI is treated as though it is occupied from May 15 through September 15 or until surveys show an AEI to be unoccupied. Southwestern Willow Flycatcher surveys are conducted during May, June, and July. Because Southwestern Willow Flycatchers migrate south for the winter, the AEI is treated as unoccupied from September 16 to May 14.

The occupancy status of an AEI affects what activities are allowable in the AEI. Although activities causing habitat alterations are always restricted, disturbance activities are restricted only in occupied AEIs. Table 2 provides dates and levels of disturbance activities allowable in the occupied Southwestern Willow Flycatcher AEI under the guidelines of this site plan. The dates in Table 2 indicate the time period during which the activity is restricted. Contact a LANL biological resources SME to find out the current occupancy status of an AEI (http://int.lanl.gov/environment/bio/controls/index.shtml).

4.3 Introduction to AEI Management Guidelines

Summary: The habitat alterations section (Section 4.4) and the activities section (Section 4.5) gives the guidelines for habitat alteration and disturbance activities, respectively, for the

Southwestern Willow Flycatcher AEI. The flow chart (see Figure 1) provides a quick reference to determine what, if any, guidelines need to be consulted for a specific activity. Protective measures give management practices that should be applied when working or considering work in AEIs. LANL biological resources SMEs are available to answer questions and provide advice (http://int.lanl.gov/environment/bio/controls/index.shtml).

Sections 4.4 and 4.5 provide the guidelines for habitat alterations and allowable activities in AEI core and buffer areas. The flow chart (see Figure 1) provides a quick reference that should be used to determine whether a project or activity will affect an AEI and what sections of the site plan need to be consulted. The section on habitat alterations (Section 4.4) describes what and where habitat alterations are allowed under the guidelines of this site plan. The section and table on allowable activities (Section 4.5 and Table 2) describe what, when, and where disturbance activities are allowed in occupied AEIs under the guidelines of this site plan. If an activity does not meet the restrictions given in the guidelines, the activity must be individually reviewed for ESA compliance. This site plan only provides guidelines for the Southwestern Willow Flycatcher AEI. If an activity is desired in an area with overlapping AEIs, all applicable site plans must be consulted. Section 4.6 describes management practices that should be applied when working or considering work in an AEI. LANL biological resources SMEs are available to help interpret site plans and answer questions (http://int.lanl.gov/environment/bio/controls/index.shtml).

4.4 Definition of and Restrictions on Habitat Alterations

4.4.1 Definition of Habitat Alterations

Habitat alteration includes any action that alters over the long-term the soil structure, vegetative components necessary to the species, prey quality and quantity, water quality, hydrology, or noise or light levels in undeveloped areas of an AEI. Long-term means the alteration lasts for more than one year. Habitat alteration includes any activity that removes vegetative components important to the Southwestern Willow Flycatcher (primarily trees and shrubs). An actual activity may take place outside of the AEI and will be considered habitat alteration if consequences of the activity have effects inside the AEI core.

The habitat components most important to flycatchers include vegetative structure, food quality and quantity, and disturbance levels, including noise and light. The thickets of certain trees and shrubs along wetlands are important because they provide roost sites and a suitable habitat for nesting and foraging.

4.4.2 Fuels Management Practices to Reduce Wildfire Risk

Thinning within undeveloped buffer areas may include trees of any size to achieve 7.6 m (25 ft) spacing between tree crowns. However, clear cutting is not allowed in undeveloped buffer areas. No fuels management practices are allowed in core areas. Habitat alterations including thinning are not restricted in developed areas. All fuels management activities in developed and buffer areas must follow the guidelines in the Activity Table (Table 2, Section 4.5.2) if the AEI is occupied.

4.4.3 Utility Corridors

Habitat alterations such as cutting down trees that threaten power lines are allowed within 8 m (26 ft) of either side of an existing utility line in all areas of an AEI (Trujillo and Racinez 1995).

New utility lines and utility lines requiring clearance of a right-of-way greater than 16 m (52 ft) total must be individually reviewed for ESA compliance. Disturbance activities must follow the guidelines given in the Activities Table for occupied AEIs.

4.4.4 Restrictions on Habitat Alterations

Summary: Habitat alterations other than the utility corridor maintenance described above are not allowed in undeveloped core areas under the guidelines of this site plan. Habitat alteration in buffers is limited. If a project or activity is planned that would alter habitat in an undeveloped core area, it must be individually evaluated for ESA compliance. Habitat alterations in a buffer area other than fuels management activities or utility corridor maintenance must be reported to a LANL biological resources SME for tracking (http://int.lanl.gov/environment/bio/controls/index.shtml).

4.5 Definition of and Restrictions on Disturbance Activities

4.5.1 Definition of Disturbance Activities

LANL biological resources SMEs considered five categories of activities that might cause disturbance in an AEI. Most of the categories were first identified in the document "Peregrine Falcon Habitat Management in the National Forests of New Mexico" prepared for the U.S. Forest Service (Johnson 1994). Other light production and other noise production were included to provide the most comprehensive list of activities possible, reducing the need for individual review of activities for ESA compliance. The categories of activities are people, vehicles, aircraft, other light production, and other noise production. The impact of explosives detonation on this species is not considered here because there are no explosives testing sites within 2 km (1.25 mi) of potential nesting habitat. Low, medium, and high levels of impact for these activities are considered here. The following categories of activities are restricted only in AEIs that are classified as occupied.

People—includes any entry of people into an AEI on foot.

- Low impact is the presence of three or fewer people per project and duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of people or the duration criteria.
- High impact is the exceedance of both the number of people and the duration criteria.

Vehicles—includes the entry of any two-axle highway vehicle, all-terrain vehicle, or motorized machinery into an AEI by any route other than a paved road or an improved gravel road.

- Low impact is the presence of two or fewer vehicles per project and duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of vehicles or the duration criteria.
- High impact is the exceedance of both the number of vehicles and the duration criteria.

Aircraft—includes the operation of any aircraft below an elevation of 600 m (2,000 ft) above the highest ground level in the local vicinity.

- Low impact is the presence of one single-engine airplane and duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of aircraft or the duration criteria.
- High impact is the exceedance of both the number of aircraft and the duration criteria.

Any use of helicopters, jet airplanes, and propeller airplanes with two or more engines is classified as medium impact or above, depending on duration.

Other Light Production—includes any activity not previously listed that causes additional light to occur in an AEI core area (e.g., plans for construction of a new building at the edge of a developed area may call for lighting at night to facilitate nighttime work that impacts an undeveloped core area).

- Low impact is the increase of light intensity by up to 0.05 fc and a duration of one night or less per project per breeding season.
- Medium impact is the exceedance of either the intensity or duration criteria.
- High impact is the exceedance of both the intensity and duration criteria.

Measurements for increases in light are taken at the AEI core area boundary closest to the light source, if the source is outside the core, and at 10 m (33 ft) from the source if the source is inside the core. Light measurements for developed areas are taken at the edge of the developed area if the developed area is within an AEI core, or at the closest core boundary, if the developed area is outside of an AEI core.

Other Noise Production—includes any activity not previously listed except for explosives detonation that causes additional noise to occur in an AEI. For example, operation of machinery causes noise.

- Low impact is increasing noise levels in an AEI core by 6 dB(A) or less for one day or less per project per breeding season.
- Medium impact is the exceedance of either the level or the duration criteria.
- High impact is the exceedance of both the level and the duration criteria.

Measurements for increases in noise are taken at the AEI core boundary closest to the noise source if the source is outside the core, and at 10 m (33 ft) from the source if the source is inside the core. Noise measurements for developed areas are taken at the edge of the developed area if the developed area is within an AEI core, or at the closest core boundary if the developed area is outside of an AEI core.

4.5.2 Activity Table

Disturbance activities are of concern only when Southwestern Willow Flycatchers occupy an AEI. The AEI is always considered occupied between May 15 and September 15, or until surveys show the AEI to be unoccupied. The Southwestern Willow Flycatcher AEI is always considered unoccupied between September 16 and May 14, when flycatchers have migrated for the winter.

For occupancy status of an AEI after completion of surveys, contact a LANL biological resources SME (http://int.lanl.gov/environment/bio/controls/index.shtml).

Table 2. Restrictions on Activities in Undeveloped Occupied Southwestern Willow Flycatcher AEI

		Core	Buffer
Restrictions on Occupied Habitat			
People			
	Low	No Restrictions	No Restrictions
	Medium	May 15 to August 15	No Restrictions
	High	May 15 to September 15	No Restrictions
Vehicles			
	Low	May 15 to September 15	No Restrictions
	Medium	May 15 to September 15	No Restrictions
	High	May 15 to September 15	No Restrictions
Aircraft			
	Low	No Restrictions	No Restrictions
	Medium	May 15 to August 15	May 15 to August 15
	High	May 15 to September 15	May 15 to August 15
Other Light/Noise Production			
	Low	May 15 to September 15	No Restrictions*
	Medium	May 15 to September 15	No Restrictions*
	High	May 15 to September 15	No Restrictions*

*Noise or light production in the buffer is restricted if the activity would violate core area restriction on noise or light.

4.6 Protective Measures

Summary: This section provides a list of management practices to apply in the AEI.

- No wetland vegetation will be removed outside of developed areas.
- Appropriate erosion and runoff controls should be employed to reduce soil loss.
- Avoid unnecessary disturbance to vegetation (e.g., excessive parking areas or equipment storage areas, off-road travel, materials storage areas, crossing of streams or washes).
- Avoid removal of vegetation along drainage systems and stream channels.
- Avoid all vegetation removals not absolutely necessary.
- Appropriate erosion controls must be put in place and periodically checked throughout the life of any projects.
- All exposed soils must be revegetated as soon as feasible after disturbance to minimize erosion.

5.0 SOUTHWESTERN WILLOW FLYCATCHER AEI DESCRIPTION

5.1 Pajarito Canyon Southwestern Willow Flycatcher AEI

5.1.1 Allowable Habitat Alteration in the Buffer Area

Since the purpose of the buffer area is to help maintain the core area as suitable Southwestern Willow Flycatcher habitat, habitat alteration in the buffer area will be extremely limited. There are two areas in which restrictions on habitat alteration are relaxed.

1. The mesa top of Mesita del Buey. This mesa top can be developed as long as restrictions on impacts to the core area are met.

2. Pajarito Road within the AEI. Mowing of upland vegetation is allowed up to 5 m (15 ft) from Pajarito Road, or to the fence, if the fence is within 9 m (30 ft). Vegetation must cover the roadsides to prevent sediment runoff, so mowed plants should be at least 5 cm (2 in) high. LANL biological resources SMEs encourage the growth of willow throughout the AEI—even the area along Pajarito Road—to enhance habitat. If, within this area, it is absolutely necessary to remove new willow growth (i.e., to improve visibility for human safety), LANL biological resources SMEs recommend that only willows at or above the level of the roadway surface be mowed.

IV. AREA OF ENVIRONMENTAL INTEREST SITE PLAN FOR THE JEMEZ MOUNTAINS SALAMANDER

1.0 SPECIES DESCRIPTION—JEMEZ MOUNTAINS SALAMANDER

1.1 Status

The Jemez Mountains Salamander (*Plethodon neomexicanus*) was listed in New Mexico as endangered under the Wildlife Conservation Act of New Mexico in 2006 (NMDGF 2006). In September 2012 the USFWS proposed the Jemez Mountains Salamander as endangered under the ESA (FR 2012) and the final listing as endangered was on 10 September 2013 (FR 2013a)

1.2 General Biology

The Jemez Mountains Salamander is endemic to the Jemez Mountains of north-central New Mexico and is found in Los Alamos, Rio Arriba, and Sandoval counties (Stebbins and Riemer 1950). It is one of two endemic plethodontid salamanders that occur in New Mexico. It occurs predominantly at elevations between 2,130 to 3,430 m (6,988 to 11,254 ft) in mixed-conifer forest with greater than 50 percent canopy cover consisting mainly of Douglas fir (*Pseudotsuga menziesii* [Mirb.] Franco), blue spruce (*Picea pungens* Engelm.), Engelmann spruce (*Picea engelmannii* Parry ex Engelm.), white fir (*Abies concolor* [Gord. & Glend.] Lindl. ex Hildebr.), limber pine (*Pinus flexilis* James), ponderosa pine, and quaking aspen (*Populus tremuloides* Michx.). The ground surface in forest areas has (a) moderate to high volumes of large fallen trees and other woody debris, especially coniferous logs at least 25 cm (10 in) in diameter, particularly Douglas fir, which are in contact with the soil in varying stages of decay from freshly fallen to nearly fully decomposed; or (b) structural features, such as rocks, bark, and moss mats that provide

the species with food and cover. Underground habitat in forest or meadow areas contains interstitial spaces provided by (a) igneous rock with fractures or loose rocky soils, (b) rotted tree root channels, or (c) burrows of rodents or large invertebrates (Degenhardt et al. 1996; FR 2013b).

Plethodontid salamanders, which lack both lungs and gills, breathe through the mucous membranes in their mouth and throat and through their moist skin. The Jemez Mountains Salamander is completely terrestrial and does not use standing surface water for any life stage (FR 2012). Present in its habitat year-round, the Jemez Mountains Salamander spends most of its life underground, but can be found on the surface when conditions are warm and wet, approximately July through October. During this time, the Jemez Mountains Salamander can be found under rocks, bark, and moss mats and inside and under logs (Ramotnik 1986, Everett 2003). The Jemez Mountains Salamander eats invertebrates, including ants, mites, and beetles, and is thought to lay its eggs underground (FR 2013b).

1.3 Threats

Principal threats to habitat include historical fire exclusion and suppression and severe wildland fires; forest composition and structure conversions; post-fire rehabilitation; forest and fire management; roads, trails, and habitat fragmentation; recreation; and disease (FR 2012).

2.0 IMPACT OF HUMAN ACTIVITIES

2.1 Introduction

Primary threats to the Jemez Mountains Salamander on LANL property are impacts to habitat quality or destruction of individual salamanders caused by LANL or Los Alamos County operations. Forested LANL property is also subject to impacts from severe wildland fire and wildfire suppression.

2.2 Impacts on Habitat Quality

2.2.1 Development

Property at LANL varies from remote isolated land to heavily developed and/or industrialized. Most of the large developed areas at LANL are found on mesa tops, generally in the northern and western portion of LANL. The areas of Jemez Mountains Salamander habitat currently most impacted by development occur in Los Alamos Canyon. There is a secondary paved road (West Road) in the bottom of the canyon that exits the canyon on the north-facing slope through Jemez Mountains Salamander habitat. The canyon bottom also contains a recreational ice rink operated by Los Alamos County on an inholding owned by Los Alamos County. Development that reduces the occurrence of primary constituent elements of Jemez Mountains Salamander in core habitat would likely have a negative impact on the species.

2.2.2 Pedestrians and Vehicles

Many canyon bottoms and mesa tops at LANL have dirt roads traversing them. Most of these roads are gated; however, many of these roads are accessible to LANL employees and the public on foot or by bike. Some areas, such as Los Alamos Canyon, are frequently used by hikers and dog owners on active and historic trails which traverse the canyon, through Jemez Mountains

Salamander habitat in places. Maintenance of roads and trails in the habitat may have a negative impact on the species.

2.2.3 Severe Wildland Fire and Wildfire Suppression

Stand-replacing wildfires significantly change forest composition and structure, and reduce canopy cover. Even ground wildfires may reduce the volume of fallen logs and large woody debris. Large areas of historic Jemez Mountains Salamander habitat have been impacted by stand-replacing wildfires associated with current forest stocking conditions, drought, and high temperatures (FR 2012). Forested habitats on LANL are also subject to severe wildland fires. To mitigate wildfire risks, some areas of LANL have been treated for fuels reduction and creation of fuel breaks both pre-emptively and during active wildfire suppression. Both wildfires and wildfire suppression activities can negatively impact the primary constituent elements of Jemez Mountains Salamander core habitat.

2.3 Impacts on Individual Salamanders

2.3.1 Disease

The amphibian pathogenic fungus *Batrachochytrium dendrobatidis* (Bd) was found in a wild-caught Jemez Mountains Salamander in 2003 (Cummer et al. 2005) on the east side of the species' range and again in another Jemez Mountains Salamander in 2010 on the west side of the species' range (FR 2012). Bd causes the disease chytridiomycosis, whereby the Bd fungus attacks keratin in amphibians. In adult amphibians, keratin primarily occurs in the skin. The symptoms of chytridiomycosis can include sloughing of skin, lethargy, morbidity, and death. Chytridiomycosis has been linked with worldwide amphibian declines, die-offs, and extinctions, possibly in association with climate change (Pounds et al. 2006). Chytridiomycosis may be a threat to the Jemez Mountains Salamander because this disease is a threat to many other species of amphibians and the pathogen has been detected in the Jemez Mountains Salamander (FR 2012).

As part of a cooperative study with the New Mexico Department of Game and Fish between 2007 and 2013, various amphibian species including the canyon tree frog (*Hyla arenicolor*), western chorus frog (*Pseudacris triseriata*), Woodhouse's toad (*Anaxyrus woodhousii*), tiger salamander (*Ambystoma tigrinum*), and Jemez Mountains Salamander were tested for Bd infection at LANL. To date, all sampling has been negative for Bd infection (Fresquez et al. 2013).

2.3.2 Destruction of Individual Salamanders

During periods of the year when Jemez Mountains Salamander are on the soil surface, when conditions are warm and wet (generally July to October), they are vulnerable to injury and mortality from soil-disturbing activities, including operation of heavy equipment in core habitat. They also are at risk to be found and collected by people.

3.0 AEI GENERAL DESCRIPTION FOR JEMEZ MOUNTAINS SALAMANDER

The AEI consists of two areas, a core area and a buffer area. The core habitat is defined as suitable habitat where the Jemez Mountains Salamander occurs or may occur at LANL. The core habitat consists of sections of north-facing slope that contain the required micro-habitat to support Jemez

Mountains Salamander. The buffer area is 100 m (328 ft) wide extending outward from the edge of the core area.

3.1 Method for Identifying a Jemez Mountains Salamander AEI

The first step in identifying potential Jemez Mountains Salamander at LANL was to use a GIS to model habitat. Early modeling efforts by Hathcock (2008) identified areas of potential habitat and that model was further refined. The following parameters were modeled in the GIS:

- Elevation: 7,000 ft (2,150 m) and above
- Slope: Greater than 20 degrees
- Aspect: north-facing +/- 20 degrees
- Land cover: Mixed conifer
- Land use: Undeveloped
- Modeled habitat is only selected if it is greater than five contiguous 30 × 30 m (98 × 98 ft) pixels in size

Once this habitat layer was developed, a second layer was modeled that examined the level of shade in the habitat, also known as an illumination index. Since the Jemez Mountains Salamander needs cool moist conditions, an illumination index model would further highlight areas where this habitat type may occur or further reinforce the areas selected by the GIS modeling. The illumination index describes the amount and extent of solar radiation reaching the Earth's surface at a given point. This takes into account the topography that may cast shadows. The illumination model was developed using the 5 m (16 ft) resolution digital elevation model hillshade and using the Surface toolbox in ArcToolbox (Environmental Science Research Institute, Redlands, California) using the highest height of the sun on June 21 at 1:00 pm, altitude of 74.4 and Azimuth of 178.4, when the sun would be at its maximum height. These procedures were based on work done by Reilly et al. (2009).

Once this modeling was complete, LANL biological resources SMEs performed field validation to verify the suitability of the modeled habitat. The goal was to verify that mixed conifer was still the dominant cover class in the selected area. The GIS analysis used data from a landcover map created by McKown et al. (2003). There have been changes in habitat since this landcover map was published from fire and extreme drought effects. Since LANL is on the extreme edge of Jemez Mountains Salamander lower elevational range, a key component in this part of its range is soil moisture content. During field validation, evidence of a moist mixed conifer habitat versus a dry mixed conifer habitat was noted. One of the key indicators used to delimit areas of moist versus dry mixed conifer during the field validation was the presence of white fir (Evans et al. 2011) combined with a high canopy cover.

Field validation of the model occurred in May 2013, or decisions were based on earlier field visits to the sites from other projects. Each field validation consisted of LANL biological resources SMEs walking down all of the modeled habitat polygons to look for the presence of indictor features. If a polygon of modeled habitat contained white fir, indicating a moist wet conifer type habitat, a high canopy closure, and other signs of high habitat quality such as dead logs, moss or

other areas that could be used as cover by the Jemez Mountains Salamander, then the polygon was marked for retention in the final core habitat. Polygons that did not contain the necessary habitat requirements were omitted.

After the field validation was complete, the final core habitat boundaries that LANL would recognize were hand digitized using ArcGIS (Environmental Science Research Institute, Redlands, California) by LANL biological resources SMEs in and around the validated modeled polygon and areas between polygons if appropriate. The final identified core habitat at LANL occurs on the north-facing slopes of canyons. Toward the rim of the canyon the core boundaries end where the mixed conifer ends. In the canyon bottoms the core boundary extends to the edge of the stream channel. The upstream and downstream core boundaries end where the mixed conifer ends. A buffer habitat was extended around the core to a distance of 100 m (328 ft) outward. The LANL Fenton Hill satellite facility in the Jemez Mountains off of New Mexico Highway 126 is on land leased to DOE by the Santa Fe National Forest. The entire footprint is considered to be developed core habitat for the Jemez Mountains Salamander, since proposed critical habitat is adjacent to the facility.

3.2 Location and Number of Jemez Mountains Salamander AEIs

The identified Jemez Mountains Salamander core habitats were grouped by canyon system into AEIs, which contain contiguous and noncontiguous habitat areas. The largest contiguous section of habitat at LANL is in Los Alamos Canyon. There are two noncontiguous areas of habitat in Two-mile Canyon, four in Pajarito Canyon, one contiguous area in Cañon de Valle, and the entire Fenton Hill facility.

4.0 AEI MANAGEMENT

4.1 Overview

This AEI management section provides guidelines for LANL operations to reduce or eliminate the threats to the Jemez Mountains Salamander from habitat alterations that reduce habitat quality. Habitat alterations are considered for all AEIs and for both core and buffer areas. Developed areas that have ongoing baseline levels of activities and are not suitable habitat for Jemez Mountains Salamander have different restrictions than undeveloped core or buffer areas. AEIs for different species may overlap, and an activity must meet the guidelines of all applicable site plans to be allowable. Protective measures are described as management practices that should be followed when working in AEIs.

4.2 Definition and Role of Occupancy in AEI Management

Occupancy simply refers to whether or not an AEI is occupied by the Jemez Mountains Salamander. The Los Alamos Canyon AEI is known to be occupied based on past surveys. Surveys for the Jemez Mountains Salamander are known to have a very low detection rate for occupied areas, so at LANL all AEIs are assumed to be occupied at all times. If needed, site-specific surveys will be conducted by federally permitted LANL biological resources SMEs.

4.3 Definition and Role of Developed Areas in AEI Management

Developed areas include all building structures, paved roads, improved gravel roads, and paved and unpaved parking lots. The majority of Jemez Mountains Salamander core habitat is in undeveloped areas, except for the satellite facility at Fenton Hill and a small amount of habitat in Los Alamos Canyon where West Road crosses the habitat. Generally, developed areas will not have restrictions; however, some of the undeveloped sections within the footprint of Fenton Hill may have restrictions because they may contain Jemez Mountains Salamanders when they move to the surface between July and October. Any project that occurs within developed core habitat will be evaluated by LANL biological resources SMEs for ESA compliance.

4.4 General Description of Core and Buffer Areas and Allowable Area Development

The purpose of buffer areas is to protect core areas from habitat degradation. The current levels of development in buffer and core areas represent baseline conditions for this site plan. No further development is allowed in the core area under the guidelines of this site plan. Any development in a buffer area will be reviewed by LANL biological resources SMEs to ensure that there are no impacts to the core habitat.

4.5 Emergency Actions

If safety and/or property are immediately threatened by something occurring within an AEI (for example, wildfire, water line breakage, etc.) please contact a LANL biological resources SME (1-505-665-3366) as soon as possible. If the emergency occurs outside of regular business hours, contact the Emergency Management Office (1-505-667-6211). This office will then communicate with the appropriate LANL personnel.

4.6 Introduction to AEI Management Guidelines

Section 4.7 provides the guidelines for habitat alterations and allowable activities in AEI core and buffer areas. It describes what and where habitat alterations are allowed under the guidelines of this site plan. If an activity does not meet the restrictions given in the guidelines, the activity must be individually reviewed for ESA compliance. This site plan only provides guidelines for the Jemez Mountains Salamander AEIs. If an activity is desired in an area with overlapping AEIs, all applicable site plans must be consulted. AEI maps show the location of all AEIs in an area. LANL biological resources SMEs are always available to help interpret site plans and answer questions (http://int.lanl.gov/environment/bio/controls/index.shtml).

4.7 Definition of and Restrictions on Habitat Alterations

4.7.1 Definition of Habitat Alterations

Habitat alteration includes any action that alters the soil structure, vegetative components necessary to the species, water quality, or hydrology in undeveloped areas of an AEI. An actual activity may take place outside of the AEI and will be considered habitat alteration if consequences of the activity have effects inside the AEI core. Habitat alterations would also include soil pits for soil samples deeper than 15 cm (6 in) using either hand or mechanized augers. Any activity that might disturb the soil will need to be reviewed by LANL biological resources SMEs.

The habitat components most important to the Jemez Mountains Salamander include soil structure and vegetative structure. The forest structure within an area designated as a Jemez Mountains Salamander AEI is important because it provides the necessary moist, cool microclimate.

4.7.2 Fuels Management Practices to Reduce Wildfire Risk

One of the primary threats to the Jemez Mountains Salamander is wildfire (FR 2012), but they also require habitat with a high canopy cover which makes fuels reduction challenging. Within undeveloped core areas, thinning trees to a level of 80 percent canopy cover or higher is approved. Trees may not be thinned below 80 percent canopy cover without further ESA review by LANL biological resources SMEs. Large logs on the ground should be left in place and not chipped. Understory thinning that does not reduce total canopy cover below 80 percent is permitted. Large trees that are felled should be left as large logs on the ground. Smaller trees and understory shrubs that may be thinned should be dispersed and left on-site to aid in soil moisture retention. Thinning activities should not occur during the rainy season between July to October (or when freezing temperatures begin, whichever comes first) when the Jemez Mountains Salamander is found on the surface.

In buffer areas, thinning of trees can occur to the current LANL-approved prescription level (LAAO 2000). LANL biological resources SMEs are available to provide guidance and mark trees for thinning (http://int.lanl.gov/environment/bio/controls/index.shtml).

4.7.3 Utility Corridors

Habitat alterations such as cutting down trees that threaten power lines are allowed within 8 m (26 ft) of either side of an existing electrical utility line at LANL under existing guidelines and engineering controls (Hathcock 2013). This level is approved in all areas of an AEI. New utility lines and utility lines requiring clearance of a right-of-way greater than 16 m (52 ft) total in core habitat must be individually reviewed for ESA compliance.

4.7.4 Restrictions on Habitat Alterations

Habitat alterations other than the fuels management practices and utility corridor maintenance described above are not allowed in undeveloped core areas under the guidelines of this site plan. If a project or activity is planned that would alter habitat in an undeveloped core area, it must be individually evaluated for ESA compliance. Habitat alterations in buffer areas must be reviewed by LANL biological resources SMEs to ensure that there are no impacts to core habitat.

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APPENDIX

Table A-1. The percentage of each food type found in Mexican Spotted Owl food remains at LANL

Species	Relative Abundance
Neotoma spp.	26.22
Peromyscus spp.	10.22
Microtus spp.	4.44
Gophers	4.89
Bats	5.78
Chipmunks	0.89
Rabbits	12.89
Shrews	1.33
Small Mammal	1.33
Medium Mammal	1.78
Medium Bird	8.00
Small Bird	4.89
Nocturnal Birds	0.89
Reptiles	4.89
Arthropods	11.56

Table A-2. Preliminary light measurements in ftc for Mexican Spotted Owl site plan

		Distance from Source			
	Source (street light)	5 m	10 m	15 m	20 m
ftc	3.70	2.28	1.20	0.62	0.32

U.S. Fish & Wildlife Service

MSGP TA-54 Facilities

IPaC Trust Resource Report

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US Fish & Wildlife Service

IPaC Trust Resource Report

Project Description

NAME

MSGP TA-54 Facilities

PROJECT CODE

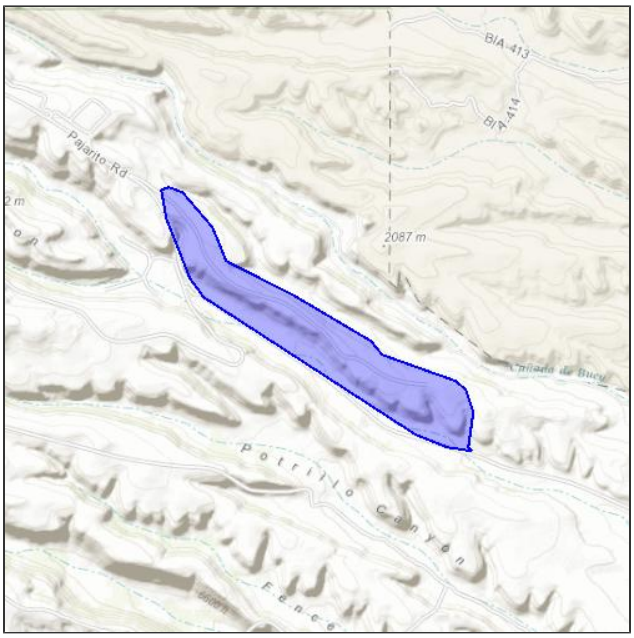
MGYAW-OJOTF-DIJEO-ZGXLF-BYW6OE

LOCATION

Los Alamos County, New Mexico

DESCRIPTION

No description provided



U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

New Mexico Ecological Services Field Office
2105 Osuna Road Ne
Albuquerque, NM 87113-1001
(505) 346-2525

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the Endangered Species Program and should be considered as part of an effect analysis for this project.

This unofficial species list is for informational purposes only and does not fulfill the requirements under Section 7 of the Endangered Species Act, which states that Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action." This requirement applies to projects which are conducted, permitted or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can be obtained by returning to this project on the IPaC website and requesting an Official Species List from the regulatory documents section.

Amphibians

Jemez Mountains Salamander Plethodon neomexicanus **Endangered**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=D019

Birds

Mexican Spotted Owl Strix occidentalis lucida **Threatened**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B074

Southwestern Willow Flycatcher Empidonax traillii extimus **Endangered**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B094

Yellow-billed Cuckoo Coccyzus americanus **Threatened**

CRITICAL HABITAT
There is **proposed** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06R

Mammals

New Mexico Meadow Jumping Mouse Zapus hudsonius luteus **Endangered**

CRITICAL HABITAT
There is **proposed** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A0BX

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

Bald Eagle Haliaeetus leucocephalus — **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008

Bendire's Thrasher Toxostoma bendirei — **Bird of conservation concern**
Season: Breeding

Brewer's Sparrow Spizella breweri — **Bird of conservation concern**
Season: Migrating
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HA

Brown-capped Rosy-finch Leucosticte australis — **Bird of conservation concern**
Season: Wintering

Burrowing Owl Athene cunicularia — **Bird of conservation concern**
Season: Breeding

Flammulated Owl Otus flammeolus — **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DK

Fox Sparrow Passerella iliaca — **Bird of conservation concern**
Season: Wintering

Golden Eagle Aquila chrysaetos — **Bird of conservation concern**
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DV

Grace's Warbler Dendroica graciae — **Bird of conservation concern**
Season: Breeding

Juniper Titmouse Baeolophus ridgwayi — **Bird of conservation concern**
Year-round

Lewis's Woodpecker Melanerpes lewis — **Bird of conservation concern**
Year-round

Loggerhead Shrike Lanius ludovicianus — **Bird of conservation concern**
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FY

Mountain Plover Charadrius montanus — **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B078

Olive-sided Flycatcher Contopus cooperi — **Bird of conservation concern**

Season: Breeding

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0AN

Peregrine Falcon Falco peregrinus — **Bird of conservation concern**

Season: Breeding

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FU

Pinyon Jay Gymnorhinus cyanocephalus — **Bird of conservation concern**

Year-round

Prairie Falcon Falco mexicanus — **Bird of conservation concern**

Year-round

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0ER

Swainson's Hawk Buteo swainsoni — **Bird of conservation concern**

Season: Breeding

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B070

Williamson's Sapsucker Sphyrapicus thyroideus — **Bird of conservation concern**

Season: Breeding

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FX

Willow Flycatcher Empidonax traillii — **Bird of conservation concern**

Season: Breeding

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F6

Refuges

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

Wetlands

Impacts to NWI wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

There are no wetlands identified in this project area

Attachment K
Concurrence_8DEC2013_Biological Assessment of Jemez Mtn Salamander
Site Plan

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113
Phone: (505) 346-2525 Fax: (505) 346-2542

December 9, 2013

Cons. #02ENNM00-2014-I-0014

Geoffrey L. Beausoleil, Acting Manager
National Nuclear Security Administration, Los Alamos Field Office
Department of Energy
Los Alamos, New Mexico 87544

Dear Mr. Beausoleil:

Thank you for your biological assessment entitled, "Biological Assessment of the Effects of Implementing the Jemez Mountains Salamander Site Plan on Federally Listed Threatened and Endangered Species at Los Alamos National Laboratory" (BA); the request for informal consultation and conferencing received on July 25, 2013 and supplemental information supplied in the "Jemez Mountains Salamander (*Plethodon neomexicanus*) Los Alamos National Laboratory (LANL) Site Plan" (Site Plan); and emails dated November 19 and December 3, 2013. The Department of Energy (DOE) requested concurrence with the determination of effects for the endangered Jemez Mountains salamander (*Plethodon* neomexicanus) (salamander) pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. § 1531 *et seq.*). Your proposed action consists of implementing the Site Plan, and includes of the incorporation of this Site Plan into LANL's Habitat Management Plan (HMP). The HMP was consulted upon in 1999 (Consultation #2-22-981-336) as the primary mechanism to ensure compliance with the ESA at LANL. The actions described in the Site Plan and analyzed in the BA, and supplemental emails are hereby incorporated by reference. You determined that implementing the Site Plan "may affect, is not likely to adversely affect" the salamander, and includes placing restrictions on certain types of work in areas identified as core habitat for the salamander on LANL property with the purpose of ensuring that effects to the salamander from those actions identified in the Site Plan are insignificant and discountable.

The Site Plan does not include any areas within designated salamander critical habitat, indicating that no critical habitat will be affected. The Site Plan has modeled and field validated the model to identify the areas on LANL property with the highest potential to be occupied by salamanders based on habitat features for the salamander. Each area identified by the modeling is termed "Area of Environmental Interest" (AEI) and consists of a "core area" and a "buffer area". The core area habitat is defined as suitable habitat where the salamander occurs or may occur at LANL. The core area habitat consists of sections of north-facing slope that contain the required

micro-habitat to support salamanders. The buffer area is 328 feet (100 meters) wide extending outward from the edge of the core area. Only the Los Alamos Canyon AEI is known to be occupied based on surveys. Surveys for the salamander are known to have a very low detection rate for occupied areas and DOE has assumed that all AEIs at LANL are occupied at all times by the salamander.

Within the Site Plan, DOE has assessed activities that could cause habitat alteration and includes any action that alters the soil structure, vegetative components necessary to the species, water quality, or hydrology in undeveloped areas of an AEI. If an activity were to take place outside of the AEI the activity will be assessed if it will have effects inside the AEI core. Within the core areas, only activities specified within the Site Plan and those that have no effect in the core areas (e.g. no habitat alterations or effects within the core areas) will be conducted without further consultation with the Service. Habitat alterations also include soil pits for soil samples deeper than 6 inches (15.2 centimeters) using either hand or mechanized augers. Within the Site Plan, DOE is proposing fuels management practices to reduce wildfire risk and maintenance of utility corridors within the AEIs. The likelihood that salamanders may be affected by the actions in the Site Plan is very low. To ensure that effects to the salamander are insignificant and discountable, the Site Plan incorporates the following conservation measures as restrictions to the identified work:

Fuels Management Practices to Reduce Wildfire Risk

a. Within undeveloped core areas, thinning trees to a level of 80% canopy cover or higher may occur; tree thinning below 80% canopy cover is not part of the action under this consultation.
b. Large logs on the ground will be left in place and not chipped.
c. Large trees that are felled will be left as large logs on the ground
d. When appropriate, smaller trees and understory shrubs that may be thinned will be dispersed and left on-site to aid in soil moisture retention.
e. In buffer areas, thinning of trees may occur to the current LANL-approved prescription level; clear-cutting will not occur.
f. Thinning activities will not occur during the rainy season when salamanders are surface active, between July 1 – October 31. Thinning activities may occur earlier in October if freezing temperatures are present.
g. In the unlikely event that a salamander is observed surface active during thinning activities, all activities shall cease, and the Service will be notified.

Utility Corridors

a. Cutting trees that threaten power lines may occur within 26 feet (8 meters) of either side of an existing utility line at LANL
b. New utility lines and utility lines requiring clearance of a right-of-way greater than 52 feet (16 meters) total in core habitat is not part of the action under this consultation.

Habitat alterations other than the fuels management practices and utility corridor maintenance described above will not occur in undeveloped core areas under the guidelines of the Site Plan or this consultation. The Service concurs with DOE's determination regarding the salamander for the following reasons:

Within the Site Plan, DOE has placed the above detailed restrictions to ensure that any effects to the salamander and its habitat remain insignificant and discountable. Canopy cover will remain at 80% or greater in undeveloped core areas and fire management actions will occur outside of the salamander surface activity period. Maintaining utility line corridors in areas with existing infrastructure (the utility lines) by removing individual hazard trees is not expected to have any measurable effect on salamanders or their potential habitat. Consequently, we concur that potential effects to the salamander from the proposed action will be insignificant and discountable.

This concludes section 7 consultation regarding the proposed action. If monitoring or other information results in modification or the inability to complete all aspects of the proposed action, consultation should be reinitiated. Please contact the Service if: 1) future surveys detect listed, proposed or candidate species in habitats where they have not been previously observed; 2) the proposed action changes or new information reveals effects of the proposal to listed species that have not been considered in this analysis; or 3) a new species is listed or critical habitat designated that may be affected by the action.

Thank you for your concern for endangered and threatened species and New Mexico's wildlife habitats. In future correspondence regarding this project, please refer to consultation #02ENNM00-2014-I-0014. If you have any questions, please contact Michelle Christman of my staff at (505) 761-4715.

Sincerely,

for Wally Murphy
Field Supervisor

cc:
Wildlife Biologist, Cuba Ranger District, Cuba, NM (Attn: Ramon Borrego)
Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico

Attachment L

Authorized Representatives for NPDES Stormwater General Permits

Associate Director for ESH
ADESH
P. O. Box 1663, MS K491
Los Alamos, New Mexico 87545
505-667-4218/Fax 505-665-3811

Date: AUG 14 2013
Symbol: ADESH-13-041
LAUR: 13-25954

Mr. Ron Curry, Regional Administrator
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Mail Code: 6RA
Dallas, TX 75202-2733

Dear Mr. Curry:

SUBJECT: NOTIFICATION OF LOS ALAMOS NATIONAL SECURITY, LLC SIGNATORY OFFICIAL AND AUTHORIZED REPRESENTATIVES FOR NPDES STORMWATER GENERAL PERMITS AND LANL INDUSTRIAL POINT SOURCE OUTFALL PERMIT (NPDES PERMIT NO. NM0028355)

The purpose of this letter is to provide an update to the Environmental Protection Agency (EPA) Region 6 on the signatory authority for the operator of Los Alamos National Laboratory (LANL) NPDES permits. Los Alamos National Security, LLC (LANS) has been the Laboratory's management and operation contractor since June 1, 2006 and is also a co-permittee with the Department of Energy under the LANL Industrial Point Source Outfall Permit (NPDES Permit No. NM0028355).

The positions of Associate Director of Environmental, Safety, and Health (ADESH), Deputy Associate Director, and Division Leader of the Environmental Protection Division (ENV-DO) are hereby identified as LANS's primary signatory officials under 40 CFR 122.22(a) for certifying and signing permit applications and reports required under the LANL Industrial Point Source Outfall Permit (NPDES Permit No. NM0028355) and the NPDES Stormwater Construction and Multi-Sector General Permits.

The following positions are hereby designated as authorized representatives under 40 CFR 122.22(b) to sign reports, Storm Water Pollution Prevention Plans, and any other compliance documentation required by the permits:

Construction General Permit:

- Group Leader of the Laboratory's Environmental Compliance Programs Group.
- Cognizant Project Manager, Project or Field Engineer, or Subcontractor Technical Representative for the regulated construction activity.

- Responsible Facility Operations Director (FOD), Deputy FOD, or Operations Manager responsible for the overall operation of the regulated facility or construction activity.

Multi-Sector General Permit (No. NMR05GB21) & Industrial Point Source Outfall Permit (No. NM0028355):

- Group Leader of the Laboratory's Environmental Compliance Programs Group.
- Division Leader, Deputy Division Leader, or Group Leader of the LANL division responsible for the overall operation of the regulated facility or activity.
- Responsible FOD, Deputy FOD or Operations Manager responsible for the overall operation of the regulated facility or activity.
- Group Leader in the ESH Deployed Services Division assigned to the regulated facility.

This letter supersedes and replaces the signatory authority letter dated March 2, 2009 (See Enclosure 1) with respect to the LANL Industrial Point Source Outfall Permit, the Construction General Permit, and the Multi-Sector General Permit, and is submitted to notify the EPA of the current authorized representatives pursuant to 40 CFR 122.22(c).

Please contact Alison M. Dorries, Division Leader for the Environmental Protection Division, at (505) 665-6592, if you have questions.

Sincerely,

Michael T. Brandt, DrPH, CIH
Associate Director
Environment, Safety & Health

MTB:AMD:MTS/lm

Enclosure:
1. Delegation of "Authorized Representative" for the Clean Water Act (CWA) and NPDES Storm Water Permits and Industrial Outfall Permit by Los Alamos National Security, LLC (LANS) Memo

CY: Diana McDonald, USEPA, Region 6, Dallas, TX
Isaac Chen, USEPA, Region 6, Dallas, TX
Jan Walker, USEPA, Region 6, Dallas, TX
Brent E. Larsen, USEPA, Region 6, Dallas, TX
Bruce Yurdin, NMED/SWQB, Santa Fe, NM
Gene Tuner, NA-OO-LA, (E-File)
David Sosinski, LC-DO, (E-File)
Carl A. Beard, PADOPS, A102
Alison M. Dorries, ENV-DO, (E-File)

Cy (continued):

Anthony R. Grieggs, ENV-CP, (E-File)
Michael T. Saladen, ENV-CP, (E-File)
Terrill W. Lemke, ENV-CP, (E-File)
Deborah K. Woitte, LC-LESH, (E-File)
Brett S. Henrikson, LC-LESH, (E-File)
Alexander W. Purdue, LC-BL, (E-File)
LASOmailbox@nnsa.doe.gov, (E-File)
locatesteam@lanl.gov, (E-File)
ADESH Correspondence File, (E-File)
ENV-CP Correspondence, File, K490

ENCLOSURE 1

Delegation of "Authorized Representative" for the Clean Water Act (CWA) and NPDES Storm Water Permits and Industrial Outfall Permit by Los Alamos National Security, LLC (LANS) Memo

ADESH-13-041

LAUR-13-25954

Date: AUG 14 2013

Los Alamos
NATIONAL LABORATORY
EST. 1943

Associate Directorate for ESH&Q
P.O. Box 1663, Mail Stop K491
Los Alamos, New Mexico 87545
(505) 667-4218/Fax: (505) 665-3811

Date: March 2, 2009
Refer To: ESH&Q-09-009

Mr. Lawrence E. Starfield, Regional Administrator
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Dear Mr. Starfield:

SUBJECT: DELEGATION OF "AUTHORIZED REPRESENTATIVE" FOR THE CLEAN WATER ACT (CWA) AND NPDES STORM WATER PERMITS AND INDUSTRIAL OUTFALL PERMIT BY LOS ALAMOS NATIONAL SECURITY, LLC (LANS)

The purpose of this letter is to inform the Environmental Protection Agency (EPA) Region 6 of a change in signatory authority for operator of Los Alamos National Laboratory (LANL). Los Alamos National Security, LLC (LANS) has been the Laboratory's management and operation contractor since June 1, 2006. This letter delegates authority as the LANS "authorized representative" for certifying and signing permits and documents required under the Clean Water Act and associated National Pollutant Discharge Elimination System (NPDES) storm water permits (Construction General Permit, Multi-Sector General Permit, LANL Individual Permit), and the NPDES Industrial Outfall Permit. This letter replaces the two LANS' delegation of "authorized representative" letters dated June 1, 2006 (ESH&Q: 06-001) and June 19, 2006 (ESH&Q: 06-002).

As the designated LANS signatory official for Clean Water Act and associated NPDES Permit Programs (please see Enclosure 1), I wish to further identify the position of Division Leader of the Laboratory's Environmental Protection Division (ENV-DO) as certifying official for NPDES standard permit requirements with the authority to certify, review, approve and/or sign as certifying official of all permit applications (e.g. Notice of Intent (NOIs) and Notice of Termination (NOTs)), permit modifications, registrations, certifications, reports and other information as required by EPA. The following is a detailed breakdown of this delegation of signatory authorities.

The following positions are hereby designated as authorized representatives to sign reports, plans, certifications, notices of changed conditions, discharge monitoring reports, and other information as required by the EPA:

NPDES Storm Water Construction General Permit

- Group Leader or Deputy Group Leader of the Laboratory's Water Quality & RCRA Group.
- Cognizant Project Manager, Project Leader, or Subcontractor Technical Representative for the regulated construction activity.
- Responsible Facility Operations Director (FOD), Deputy FOD, or Operations Manager responsible for the overall operation of the regulated facility or activity.

Multi-Sector General Permit & LANL Individual Permit

- Group Leader or Deputy Group Leader of the Laboratory's Water Quality & RCRA Group.
- Director, Deputy Director, or Group Leader of the Laboratory Division responsible for the overall operation of the regulated facility or activity.
- Responsible FOD, Deputy FOD or Operations Manager responsible for the overall operation of the regulated facility or activity.
- Program Director, Program Manager or Project Leader responsible for the overall operation of the regulated facility or activity.

NPDES Outfall Permit No. NM0028355

- Group Leader or Deputy Group Leader of the Laboratory's Water Quality & RCRA Group.
- Director or Deputy Director of the Laboratory Division responsible for the overall operation of the regulated facility or activity.

Please contact Tori George, Division Leader for Environmental Protection, at (505) 667-2211, if you have questions.

Sincerely,

J. Chris Cantwell
Associate Director
Environment, Safety, Health and Quality

Enclosures: a/s

Cy: M. Flores, U.S. EPA, Region 6, Dallas, TX, w/enc.
C. Hosch, U.S. EPA, Region 6, Dallas, TX, w/enc.
W. Lane, U.S. EPA, Region 6, Dallas, TX, w/enc.
I. Chen, U.S. EPA, Region 6, Dallas, TX, w/enc.
B. Larsen, U.S. EPA, Region 6, Dallas, TX, w/enc.
G. Saums, NMED/SWQB, Santa Fe, NM, w/enc.
R. Powell, NMED/SWQB, Santa Fe, NM, w/enc.
D. Winchell, NNSA-LASO, w/enc., MS A316
G. Rael, NNSA-LASO, w/enc., MS A906
G. Turner, NNSA-LASO, w/enc., MS A316
D. Sosinski, LC-DO, MS A183
D. Woitte, LC-LESH, MS A187
P. Wardwell, LC-LESH, w/enc., MS A187
T. George, ENV-DO, w/enc., MS J978
T. Grieggs, ENV-RCRA, w/enc., MS K490
M. Saladen, ENV-RCRA, w/enc., MS K490
T. Lemke, ENV-RCRA, w/enc., MS K490
ESH&Q File, w/enc., MS K491
ENV-DO, File, w/enc., MS J978
ENV-RCRA, File, (09-024), w/enc., MS K490
IRM-RMMSO, w/enc., MS A150

(ENCLOSURE 1)

Los Alamos
NATIONAL LABORATORY
EST. 1943

Office of the Director

March 4, 2009

J. Chris Cantwell
Associate Director
Environment, Safety, Health and Quality
Los Alamos National Security

Dear Mr. Cantwell: Chris

SUBJECT: **CONTRACT NUMBER: DE-AC52-06NA25396, DELEGATION OF AUTHORITY FOR PERMITS, AUTHORIZATIONS AND OTHER DOCUMENTS AS AN OPERATOR OR CO-OPERATOR UNDER ENVIRONMENTAL PERMITS FOR THE LOS ALAMOS NATIONAL LABORATORY**

I, Michael R. Anastasio, Director of Los Alamos National Laboratory and President of Los Alamos National Security, LLC (LANS), the "Company," hereby delegate authority to you, J. Chris Cantwell, Associate Director, Environmental, Safety and Health and Quality (ADESH&Q), to execute on behalf of the Company permits, authorizations, or other documents necessary for the Company to become an operator or co-operator under the environmental permits for the Los Alamos National Laboratory, which permits are currently in the name of the Los Alamos National Security.

This delegation shall remain in effect while you are in the position of Associate Director, ADESH&Q or until revoked by me.

Sincerely,

Michael R. Anastasio
Director

Cy: I. E. Richardson III, DIR, A100
M. Mallory, PADOPS, A102
M. Graham, ADEP, M991
T. George, ENV-DO, J978
D. Sosinski, LC-DO, A183
D. Woitte, LC-LESH, A187
R. Madison, LANS, T009
M. Rafferty, PCM-DO, M722
IRM-RMMSO, A150
DIR-09-085

PO Box 1663, MS A100, Los Alamos, NM 87545
505-667-5101 / FAX 505-665-2679
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Attachment M
Environmental References/Documents

ENV-CP-QP-007.9	
Effective Date: July 19, 2013	Next Review Date: June 19, 2015

Environment, Safety, Health Directorate

Environmental Protection – Compliance Programs Quality Procedure

Spill Investigations

Reviewers:

Name:	Organization:	Signature:	Date:
Melanie Lamb	ADESH-OIO, QA Specialist	Signature on file	7/18/13

Derivative Classifier: ☐ **Unclassified** ☒ **DUSA** ____**ENVPRO**__

Name:	Organization:	Signature:	Date:
Ellena Martinez	ADESH-OIO	Signature on file	7/23/13

Approval Signatures:

Subject Matter Expert:	Organization:	Signature:	Date:
Jake Meadows	ENV-CP	Signature on file	7/18/13
Responsible Line Manager:	Organization:	Signature:	Date:
Mike Saladen	ENV-CP Team Lead	Signature on file	7/18/13
Responsible Line Manager:	Organization:	Signature:	Date:
Anthony Grieggs	ENV-CP Group Leader	Signature on file	7/19/13

CONTROLLED DOCUMENT

This copy is uncontrolled. The controlled copy can be found on the ENV Division Web page.

Users are responsible for ensuring they work to the latest approved version.

History of Revisions

Document Number *[Include revision number, beginning with Revision 0]*	**Effective Date** *[Document Control Coordinator inserts effective date]*	**Description of Changes** *[List specific changes made since the previous revision]*
0	12/98	New Document.
1	06/00	Annual review, added Cerro Grande fire hazards
2	07/01	Annual review
3	06/03	Annual review
4	04/04	Annual review, changes to HCPs
5	02/07	Annual review, changes to reflect organizational restructure
6	07/08	Annual review
7	09/10	Biennial Review and revision
8	04/11	Removed prerequisites, added note re: on-call spill reporting.
9	07/13	Biennial review and revision, implemented new procedure format.

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1.0 PURPOSE

This Environmental Protection – Compliance Programs Group (ENV-CP) procedure describes processes and implements requirements for spill investigations.

2.0 SCOPE

This procedure applies to all ENV-CP staff and personnel conducting spill investigations.

2.1 HAZARD REVIEW

The work described in this procedure is field work and has a **LOW hazard** rating as documented by submittal of a completed *ENV Low Hazard Verification form* to the Quality Assurance Specialist.

3.0 RESPONSIBILITIES

The following personnel require training before implementing this procedure:

- ENV-CP staff and contract personnel who perform spill response and investigation require training on this procedure.

Annual re-training to this procedure is required. Specific training requirements will be updated as needed.

The training method for this procedure is part "self-study" and part on-the-job training (OJT). The OJT training is to be conducted by a Team Leader or person designated as Subject Matter Expert (SME) by the ENV-CP Group Leader. The self-study and OJT will be documented in accordance with ENV-DO-QP-115, *Personnel Training*.

Actions specified within this procedure, unless proceeded with "should" or "may," are to be considered mandatory (i.e., "shall", "will", "must").

3.1 PREREQUISITES

- None

4.0 DOCUMENT CONTROL/RECORDS MANAGEMENT

The following records generated as a result of this procedure are to be submitted in accordance with ENV-DO-QP-110, *Records Management*.

- Field notebook documentation of the release including:
  - time and date of the release
  - time and date of ENV-CP notification
  - location of the release and from where the release occurred (equipment, etc,)
  - type of material released
  - quantity of material released
  - if an impact to a watercourse, SWMU, or PRS occurred

- time release was stopped
- any immediate mitigating actions implemented to contain or control the release

➢ Any written report and verbal notification list generated should the release be deemed reportable.

- Non-Reportable LANL Spill Report (Attachment 2)

5.0 WORK PROCESSES

Responsibility is to assure the immediate mitigation and timely notification of appropriate regulatory organizations in the event of a spill or unplanned discharge that has or may affect the environment. Work requires frequent and unscheduled site visits to any area of the Laboratory during a spill or unplanned release as support staff for the on-scene EO-EM Incident Commander.

Specific activities associated with Spill Response and Investigation:

- Respond to the spill or unplanned release site;
- Report to the On-Scene EO-EM Incident Commander and Site Safety Officer;
- Receive site safety requirements;
- Provide decision support;
- Investigate the nature and extent of the spill or unplanned release;
- Evaluate the potential environmental impact to water quality;
- Report the occurrence to the regulatory agencies, if necessary; and
- Provide support to mitigation plan and implementation.

5.1 FIELD ACTIVITY

If the spill or unplanned discharge is determined to be a non-emergency event by EO-EM response, such as a release of potable water, perform the following steps:

Step	Action
1	Perform a site visit in coordination with the Facility Operations Director designee.
2	Assess potential environmental damage.
3	Provide mitigation measures and requirements.
4	Document the event.
5	Notify regulatory agencies and DOE, if necessary.
6	Facilitate collection of samples, if necessary.

For emergency response, perform the following steps:

Step	Action
1	Report to on-scene commander and await instructions.
2	Perform a site visit in coordination with EO-EM.

3	Adhere to access requirements as developed by the EO-EM Site Safety Officer and Incident Commander.
4	Identify source and cause of release and document.
5	Provide notification and written report if necessary.
6	Facilitate collection of samples if necessary and safe to do so.

If sample collection is required, contact the following sampling personnel:

- ENV-CP
  - NPDES outfall
  - Sanitary treatment solids
  - Wastes and chemical spills (liquid, solid, hazardous)
- ADEP Corrective Actions Program
  - Surface water
  - Storm water runoff
  - Groundwater
  - Sediments

5.2 COMMUNICATION

Take a cellular phone that will transmit from the location to be visited. Also take a contact pager to receive messages.

If cellular service is unavailable, use a portable radio set to the appropriate radio frequency.

If in a secure area where cell phone use is prohibited, use the radio. Be sure to have radio checked and authorized for use within secure areas or within the boundaries of the WFO FOD or WX Division. Government-owned cellular phones, with batteries removed, may be brought into the secure area but used only if approval is given by the EO-EM Incident Commander or FOD or designee. Rules of use for Smartphones and other mobile devices (BlackBerry, iPhones, iPads) can be found on the Computing Communications webpage for mobile devices, http://int.lanl.gov/computing/communications/mobile/index.shtml.

Radio or cellular contact must be established with a designated contact prior to leaving ENV-CP and upon arrival/departure at the site in accordance with ENV-DO-QP-100, *General Field Safety*.

The Incident Commander can make special communication exceptions.

All photography at LANL must adhere to the procedure and P202-5, *Prohibited and Controlled Articles*.

Wastes generated from activities described in the procedure will be properly characterized, managed, and disposed in accordance with P409, *Waste Management*, P930-1, *LANL Waste Acceptance Criteria*, and P403, *Environmental Aspects Identification Requirement*.

5.3 FACILITY MANAGEMENT WORK CONTROL REQUIREMENTS FOR FIELD ACTIVITIES

Most field activities performed by the ENV-CP spill response personnel are impacted by facility management work control requirements. Requirements vary between the respective Facility Operations Divisions (FODs) and therefore necessitate ENV-CP response personnel to acquire FOD approval for site access in advance of starting work activities. The exception to this is in response to emergency situations as support to EO-EM staff.

Should work be required to stop/pause, reference P101-18, *Procedure for Pause/Stop Work*, for guidance.

5.4 FACILITY MANAGEMENT-SPECIFIC ACCESS REQUIREMENTS

TA-16 and TA-11 high explosives areas have specific access requirements. Access inside the security gate requires annual site-specific training. Curricula# 5243 must be assigned and all the training courses completed before arriving at TA-16.

For access to perimeter gates during normal working hours, contact MSS-UI at 665-0106.

For perimeter gates with key core MSS-UI, prior notification for after hours entry is required. Perform the following steps:

Step	Action
1	Call SOC Los Alamos at 667-4437.
2	Identify yourself to the on duty officer or attendant.
3	Provide the following information: Group, color and make of vehicle (s), which perimeter gate you are entering, and approximate time of arrival and finally, length of stay.

Failure to notify security personnel in advance could result in a security violation against the visiting Team Member.

Provide notification to SOC Los Alamos at 667-4437 when leaving area.

For access to WX areas requiring during normal working hours, perform the following steps:

- Ensure the required security clearance (Q clearance) is held, and
- Contact the FOD or designee for entry requirements.

5.4.1 CHEMISTRY METALLURGY RESEARCH FACILITY ACCESS

For access to the Chemistry Metallurgy Research Facility, perform the following:

- Must have the required Q clearance to pass the security gate.
- If access into any of the buildings is necessary, contact the FOD for an escort**.**
- If responding to an emergency with EO-EM, ENV-CP staff will be considered part of the EO-EM response team, met at the access gate, and escorted to the spill site.

5.4.2 TA-3-66 SIGMA FACILITY ACCESS

For access to the Sigma facility (TA-3-66), perform the following:

- For non-emergency responses, obtain prior site-specific training and authorization or contact the FOD for personnel escort.
- For emergency response with EO-EM, ENV-CP staff will be considered part of the EO-EM response team, met at the access gate, and escorted to the spill site.

5.5 REGULATORY SPILL REPORTING

If a spill is determined to be a threat to the environment or human health, regulatory and DOE notification may be necessary. Contacts and telephone numbers can be found on Attachment 1, Release Notification Phone List.

If a Spill impacts a Solid Waste Management Unit (SWMU) or Area of Concern (AOC), contact ENV-CP and ADEP Corrective Action Program for possible additional notification requirements. See Attachment 1 to this document.

If ENV Division or designated SME personnel determine after a site inspection or verbal notification that a spill is non-reportable to DOE or applicable regulatory agencies, a non-reportable spill report must be completed by appropriate facility designated personnel. See attachment 2 for the spill report form and information to be collected. Once the form has been accurately completed it can be sent to the SME at ENV-CP for required documentation.

For ENV Division designated on-call personnel, follow guidance for spill reporting as described in ENV-DO-QP-101, *Environmental Reporting Requirements for Releases or Events*.

NOTE: On-call representatives are required to follow up in writing (email is sufficient) with the spills program lead regarding all releases during their on-call schedule. If no spills are reported in off-work hours, please confirm in writing with the spills program lead at the end of your on-call schedule.

For additional information concerning spill and unplanned discharge determination and notification requirements, contact the ENV-CP Water Quality Permitting and Compliance Team Leader.

6.0 REFERENCES

None

7.0 DEFINITIONS

Field Work: Performance of Laboratory related activities in areas that are removed or isolated from an established populated base of operation (that is, where emergency support and medical assistance is not readily available.)

NPDES: National Pollutant Discharge Elimination System

EO: Emergency Operations Division

EO-EM: Emergency Management Group (A.K.A. EO-3)

PRS: Potential Release Site

SOC Los Alamos: Security contractor for Los Alamos National Laboratory

SWMU: Solid Waste Management Unit

8.0 ATTACHMENTS

Attachment 1- ENV-CP Release Notification Phone List

Attachment 2- LANL Spill Report Form

ATTACHMENT 1- ENV-CP RELEASE NOTIFICATION PHONE LIST

Los Alamos National Laboratory
ENV-CP
Release notification phone list
March 2013

Los Alamos National Laboratory

(1)	Emergency Management (EO-EM)	667-6211
(2)	ENV-ES Group Office	665-885
(3)	ENV-CP Group Office	667-0666
(4)	ENV-DO	667-2211
(5)	Central Alarm Station	667-4437
	L.A. Fire Dept. dispatch	

New Mexico Environment Department

See Web address below

(1)	NMED Emergency Hotline	827-9329
(2)	NMED Non-Emergency Hotline	476-6000
(3)	Surface Water Quality Bureau	827-0187
	Erin Trujillo	827-0418
(4)	Ground Water Quality Bureau	827-2918
	Robert George	476-3648
	Jennifer Fullem	827-2909
(5)	NMED/HWB	
	Ruth Horowitz	476-6025

U.S Environmental Protection Agency

(1)	USEPA Emergency Hotline	(214) 655-6450
	After Work Hours	(214) 655-6595
(2)	Jan Walker (214) 655-8431	

U.S. Department of Energy

(1)	Gene Turner	667-5794

State Emergency Response Commission (SERC) Notification

New Mexico State Police (Immediate Notification)	(505) 827-9126 (24-hour #)
State and Local Preparedness Bureau (Follow-up Notification)	(505) 476-9600 (daytime # only)

National Response Center

U.S. Coast Guard 1-800-424-8802
See NRC web address below for report form

New Mexico State Police

New Mexico State Police	1-800-827-9126 (24 hr. #) or 827-9300 (dispatch, 24 hr. #)

Local Emergency Planning Committee (LEPC) LAPD

Philmont Taylor	(505) 663-3511

On Call Environmental Contact for Releases
Group Representatives for Notifications to External Agencies

Name	Group	Work Phone	Pager	Cellular Phone	Email address
Jake Meadows	ENV-CP	606-0185	664-1333	231-0460	jmeadows@lanl.gov
Mike Saladen	ENV-CP	665-6085	664-4226	699-1284	saladen@lanl.gov
Mark Haagenstad	WM-WMP	665-2014	664-5356	699-1733	mph@lanl.gov
Tim Zimmerly	ENV-CP	664-0105	699-7621	664-1237	tzimmer@lanl.gov
Terrill Lemke	ENV-CP	665-2397	664-7082	699-0725	tlemke@lanl.gov

Web addresses:
NMED home page http://www.nmenv.state.nm.us
National Response Center home page http:/www.nrc.uscg.mil/nrchp.html
Reportable Quantities web page http://homer.ornl.gov/rq/

ATTACHMENT 2- LANL SPILL REPORT FORM

LANL SPILL REPORT

Environmental Protection Division (ENV)
Compliance Programs Group (CP)
Los Alamos National Laboratory

Spill Coordinator	Telephone	Mail Stop	Division	Group
Responsible Facility/User Group				
Contact Person	Telephone	Mail Stop	Pager #	

Spill Location		Date of Spill	Time of Spill	Date Discovered	Time Discovered
Date Spill Stopped	Time Spill Stopped	Method used to Stop Spill			
Actions taken to Mitigate Damage					
Nearest Water Course Affected? ☐ Yes ☐No ☐ NA *(If yes, please describe.)*					
Source and Cause of Spill *(pipeline, tank, truck, overflow, etc.)*					
Materials Spilled					
Estimated Amount of Material Spilled					
Cleanup Started? ☐ Yes ☐ No		Date Started	Time Started		
Cleanup Finished? ☐ Yes ☐ No		Date Finished	Time Finished		
Cleanup Method					
Weather Conditions					
Comments					

Estimate the quantity of waste generated by the spill cleanup procedures, how that waste is packaged and the current disposition of wastes.
Describe any sampling performed during spill cleanup and attach analytical results to this form.
Describe current status of the spill site and the need for further cleanup or monitoring activities.
Describe actions taken to prevent recurrence of such a spill.
Injuries or Exposure? □ Yes □ No *(If yes, please describe.)*

Did evacuation occur? □ Yes □ No	Were facilities or equipment damaged? □ Yes □ No
Did fire/explosion occur? □ Yes □ No	Was there a potential for fire/explosion? □ Yes □ No

Did the spill enter sewer drains, streams, or stream beds? □ Yes □ No *(If yes, give location and ultimate drainage.)*
Who discovered the Spill?

Spill Information

Describe the spill response, in chronological order. Include a call-out response personnel, steps taken to contain the spill, and steps taken to clean it up. Also describe spill control equipment used.

Additional Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of certifying official:	Title:	Organization:	Date signed:

ENV-RCRA-QP-022.2	
Effective Date: February 28, 2013	Next Review Date: January 28, 2015

Environment, Safety, Health Directorate

Environmental Protection – Water Quality and RCRA Quality Procedure

MSGP Storm Water Corrective Actions

Reviewers:

Name:	Organization:	Signature:	Date:
Melanie Lamb	ENV-QPMO QA Specialist	Signature on file	1/4/13

Derivative Classifier: ☒ **Unclassified**

Name:	Organization:	Signature:	Date:
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Approval Signatures:

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Responsible Line Manager:	Organization:	Signature:	Date:
Terrill Lemke	ENV-RCRA Team Lead	Signature on file	2/8/13
Responsible Line Manager:	Organization:	Signature:	Date:
Anthony Grieggs	ENV-RCRA Group Leader	Signature on file	2/28/13

CONTROLLED DOCUMENT

This copy is uncontrolled. The controlled copy can be found on the ENV Division Web page.

Users are responsible for ensuring they work to the latest approved version.

History of Revisions

Document Number *[Include revision number, beginning with Revision 0]*	**Effective Date** *[Document Control Coordinator inserts effective date]*	**Description of Changes** *[List specific changes made since the previous revision]*
0	08/10	New Document.
1	11/10	Incorporated ENV-RCRA-QP-062 *MSGP Routine Inspections* into this document.
2	01/13	Biennial revision, new template implemented.

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1.0 PURPOSE

This procedure is written to provide requirements for identifying, documenting and entering corrective actions into the ENV-RCRA MSGP Corrective Action Report Findings database.

2.0 SCOPE

Requirements set forth in this document apply to Los Alamos National Laboratory industrial facilities covered by the National Pollutant Discharge Elimination System (NPDES) Storm Water Multi-Sector General Permit (MSGP). This "general permit" requires identification, documentation, tracking and reporting of corrective actions in accordance with sections 2.2.1, 3, 4.1.2, 4.2.2, 4.3.2, 5.0, 5.2, 5.4, 6.2.1, 6.2.1.2, 7.2 and Appendices B and I.

2.1 HAZARD REVIEW

The work described in this procedure is office work only and has a **LOW hazard** rating as documented by submittal of a completed *ENV Low Hazard Verification form* to the Quality Assurance Specialist.

3.0 RESPONSIBILITIES

The following personnel require training before implementing this procedure:

- Group and Team Leader
- ENV-RCRA MSGP Storm Water compliance personnel
- Deployed Environmental Professionals (DEPs)
- Other LANL or subcontract personnel identified as being required to conduct storm water assessments as part of their job duties.

In addition to training to this procedure, the following training is also required prior to performing this procedure:

- ENV-RCRA QAPP-MSGP *Quality Assurance Project Plan for the Storm Water Multi-Sector General Permit for Industrial Activities*

The training method for this procedure is "self-study" (required read). For ENV-RCRA staff, this is documented in accordance with ENV-DO-QP-115, *Personnel Training*. Other participating groups may require training documentation pursuant to local procedures.

Actions specified within this procedure, unless preceded with "should" or "may", are to be considered mandatory (i.e., "shall", "will", "must").

3.1 ROLES AND RESPONSIBILITIES

3.1.1 ENV-RCRA MSGP STORM WATER TEAM

ENV-RCRA MSGP Storm Water Team members will be fully knowledgeable of the specific regulatory requirements identified in the 2008 MSGP and are responsible for ensuring compliance with these requirements and entering corrective actions. Team members will evaluate corrective actions that the DEPs enter into the ENV-RCRA MSGP Corrective Action Report Findings database and modify them as needed for quality assurance. This team will also periodically review open corrective actions and follow up with the DEPs, ES&H Managers, or Upper Management, as deemed necessary, to ensure close out of the corrective action. The team members will notify upper management of instances of non-compliance with the permit. A team member may also be responsible for responding to the regulatory authority (EPA) regarding identified storm water issues and/or negotiate settlement of any identified issues.

3.1.2 DEPLOYED ENVIRONMENTAL PROFESSIONALS

DEPs will be fully knowledgeable of the site specific Storm Water Pollution Prevention Plan (SWPPP) and corrective action requirements identified in the MSGP for the facilities they are deployed to. In addition, they shall be appropriately trained to meet the job qualifications identified in the *Quality Assurance for Storm Water Multi-Sector General Permit for Industrial Activities Program* (ENV-RCRA-QAPP-MSGP) and shall be familiar with the regulatory requirements identified in the 2008 MSGP. Further, they shall be familiar with facility operations so that potential pollution discharge sources can be determined and corrective actions can be identified.

The DEPs are responsible for identifying and entering corrective actions observed at their industrial facilities into the ENV-RCRA MSGP Corrective Action Report Findings database. They are also responsible for updating corrective actions in a timely manner that cannot be implemented immediately. They will work with the ES&H Manager and ENV-RCRA storm water personnel to ensure identified corrective actions are implemented by overseeing repairs and/or improvements or instituting additional controls. If it is determined that corrective actions are necessary following an assessment, any modification to the control measures must be made before the next storm event if possible, or as soon as practicable following that storm event.

NOTE: These time intervals are not grace periods, but are schedules considered reasonable for documenting your finding(s) and for making repairs and improvements. They are included in the MSGP Permit to ensure that the conditions prompting the need for these repairs and improvements are not allowed to persist indefinitely (see Section 3.3 of the 2008 MSGP). In no instance will the corrective action remain open indefinitely.

3.1.3 ENV-RCRA STORM WATER TEAM LEADER

The ENV-RCRA Storm Water Team Leader is responsible for compliance oversight relative to the 2008 MSGP. The Team Leader will ensure costs needed to implement the regulatory requirements identified in the 2008 MSGP are identified and environmental risks are assessed. Upper management will be notified of these costs or environmental risks, as deemed necessary. In the event there is a dispute regarding the regulatory requirements contained in the MSGP, the Team Leader will make the final determination of the required action. The Team Leader will notify upper management of instances of non-compliance with the permit.

3.1.4 ENV-RCRA GROUP LEADER

The ENV-RCRA Group Leader or designee is responsible for ensuring there is adequate funding to implement the regulatory requirements identified in the 2008 MSGP. The Group Leader also acts as the duly authorized signatory that certifies the reports. The Group Leader will notify upper management of instances of non-compliance with the permit or other identified environmental risk.

3.1.5 ES&H MANAGER

The ES&H manager shall identify funding for their industrial facilities to ensure compliance with the 2008 MSGP. The ES&H Manager is also responsible for ensuring that industrial facilities are complying with the 2008 MSGP permit and notifying upper management of instances of non-compliance with the permit or other identified environmental risk.

3.1.6 FACILITIES OPERATIONS DIRECTOR

The Facilities Operations Director (FOD) provides organizational leadership to ensure that all facility and programmatic activities under their authority are performed in compliance with the 2008 MSGP. The FOD is also responsible for establishing an environmental compliance envelope. It is the FOD's responsibility to maintain trained and qualified Environmental Professionals and Waste Management Coordinators on staff.

3.1.7 COMPUTER PROGRAMMER

Maintains and updates the ENV-RCRA MSGP Corrective Action Report Findings database as requested by MSGP storm water personnel.

3.2 PREREQUISITES

In addition to training to this procedure, the following training is also required prior to performing this procedure:

- *ENV-RCRA QAPP-MSGP, Quality Assurance Project Plan for the Storm water Multi-Sector General Permit for Industrial Activities Program*

4.0 DOCUMENT CONTROL/RECORDS MANAGEMENT

The following records generated as a result of this procedure are to be submitted to the designated RM-POC in accordance with ENV-DO-QP-110, *Records Management* and filed in project files.

- MSGP Comprehensive Site Inspection Annual Report
- Completed Routine Inspection Forms
- Electronic records within the ENV-RCRA MSGP Corrective Action Report Findings database.
- Copies of automated e-mail notifications

5.0 WORK PROCESSES

5.1 IDENTIFYING CORRECTIVE ACTIONS

If any of the following conditions occur, the DEP or ENV-RCRA storm water team member must review and revise the selection, design, installation, and implementation of control measures to ensure that the condition is eliminated and will not be repeated in the future:

- An unauthorized release or discharge (e.g., spill, leak, or discharge of non-storm water not authorized by the 2008 MSGP);
- You become aware, or EPA determines, that your control measures are not stringent enough for the discharge to meet applicable water quality standards;
- An inspection or evaluation of the facility by an EPA official and/or local or State entity, determines that modification to the control measures are necessary to meet the non-numeric effluent limits in the 2008 MSGP;
- You find in the routine facility inspection, quarterly visual assessment, or comprehensive site inspection that the control measures are not being properly operated and maintained;
- Construction or a change in design, operation, or maintenance at the facility significantly changes the nature of pollutants discharged in storm water from the facility, or significantly increases the quantity of pollutants discharged; or
- The average of four quarterly sampling results exceeds an applicable benchmark. If less than four benchmark samples have been taken, but the results are such that an exceedence of the four quarter average is mathematically certain, (i.e., if the sum of quarterly sample results to date is more than four times the benchmark level) this is considered a benchmark exceedence, triggering this review;
- If effluent limitation guidelines are exceeded at the Asphalt Batch Plant (Sector D); or
- If impaired water quality standards are exceeded.

5.2 ROUTINE INSPECTIONS

Routine inspections shall be conducted by the DEP (or a qualified member if the DEP is not trained and qualified) at all areas of the facility where industrial materials or activities are exposed to storm water, and of all storm water control measures used to comply with the effluent limits contained in the 2008 MSGP. Routine inspections shall be conducted at least quarterly; however, some facilities conduct monthly inspections (as specified in the facility specific SWPPP). Routine inspections shall be conducted during periods when the facility is in operation. A certified copy of completed Routine Inspection Forms shall be maintained in the facility's SWPPP.

At least once each calendar year, the routine facility inspections must be conducted during a period when a storm water discharge (either rain or snow) is occurring. The DEP(s) or storm water personnel from ENV-RCRA are responsible for identifying and entering corrective actions observed during the routine inspections into the ENV-RCRA MSGP Corrective Action Report Findings database. The database is set up to allow access for all identified DEPs associated with a particular FOD if the FOD has more than one DEP. Contact a member of the ENV-RCRA storm water team if you do not have access to this database and the FOD has assigned you responsibility for MSGP corrective actions.

NOTE: If the industrial facility is inactive and unstaffed and there are no industrial materials or activities exposed to storm water, routine inspections may not be required. A determination of whether a facility is inactive or unstaffed shall be made in coordination with storm water personnel from ENV-RCRA as there are specific documentation and certification requirements that have to be met prior to discontinuing routine inspections.

5.3 COMPREHENSIVE INSPECTIONS

Qualified ENV-RCRA storm water personnel will conduct one comprehensive inspection of all industrial facilities and those that meet the "no exposure" criteria subject to the 2008 MSGP before September 29th of each year. At least one member of the facility's storm water pollution prevention team shall participate in this inspection. This is usually the DEP.

This inspection must cover all areas of the industrial facility affected by the requirements in the 2008 MSGP including the areas identified in the SWPPP as potential pollutant sources where industrial material or activities are exposed to storm water, areas where control measures are used to comply with the effluent limits, and areas where spills and leaks have occurred in the past 3 years. The inspector must include review of the monitoring data (analytical results from benchmark and impaired waters and visual assessments) collected that calendar year as part of the comprehensive inspection. Inspectors must examine the following at a minimum:

- Industrial materials, residue, or trash that may have or could come into contact with storm water;
- Leaks or spills from industrial equipment, drums, tanks, and other containers;

- Offsite tracking of industrial or waste materials, or sediment where vehicles enter or exit the site;
- Tracking or blowing of raw, final, or waste materials from areas of no exposure to exposed areas; and
- Control measures needing replacement, maintenance, or repair.
- Storm water controls measures required by the 2008 MSGP must be observed to ensure that they are functioning correctly.

NOTE: The annual comprehensive site inspection may also be used as one of the routine inspections, as long as all components of both types of inspections are included.

ENV-RCRA will then enter all identified corrective actions into the ENV-RCRA MSGP Corrective Action Report Findings database. It is the responsibility of the DEP to update the database to reflect updates to these corrective actions.

Information compiled during the comprehensive inspection is used to complete the Annual Report. This report shall be submitted to EPA (postmarked) within 45 days of the last facility inspection completed in September of each year. For example, if the last facility was inspected (as part of the comprehensive site inspection) on September 22, the report shall be postmarked before or on November 6th. A complete certified copy of the Annual Report shall be maintained in the facility's SWPPP.

5.4 SPILLS

All leaks or spills shall be cleaned up immediately and entered into the ENV-RCRA MSGP Corrective Action Report Findings database. This can be done by either the DEP or an ENV-RCRA MSGP storm water team member. If the spill is immediately cleaned up, and controls are put in place to prevent further leakage, the corrective action can be closed.

5.5 ALLOWABLE NON-STORM WATER DISCHARGES

The following are allowable non-storm water discharges authorized by the 2008 MSGP:

- Discharges from fire-fighting activities;
- Fire hydrant flushing;
- Potable water, including water line flushings;
- Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;
- Irrigation drainage;
- Landscape watering provided all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;
- Pavement wash waters where no detergents are used and no spills or leaks of toxic or hazardous material have occurred (unless all spilled material has been removed);

- Routine external building washdown that does not use detergents; and
- Uncontaminated ground water or spring water.

Any person authorized to conduct work at LANL can identify a potential storm water issue. If this occurs, they should contact the DEP or an ENV-RCRA MSGP storm water team member who will determine if a corrective action is needed.

5.6 ENTERING CORRECTIVE ACTIONS

To enter a corrective action into the ENV-RCRA MSGP Corrective Action Report Findings database, perform the following steps:

NOTE: Be clear and concise, use correct grammar and punctuation, and correct any spelling errors. This information will be used to populate a report that will be submitted to the EPA. Therefore, it is critical that all information entered into the ENV-RCRA MSGP Corrective Action Report Findings database is correct and meets these criteria.

Step	Action
1	From this web page: http://int.lanl.gov/environment/water/guidance/swmgp.shtml, under the heading "Compliance Tools". Click on the link "MSGP Corrective Action Report Findings Database" Click on "Enter New Corrective Action."
2	Under the "Corrective Action Header" tab, enter the following: • Facility Name by clicking on the "List" tab and selecting a facility. • Date Problem was Identified (mm/dd/yyyy) • Date of Notification to ENV-RCRA (mm/dd/yyyy) • FOD Responsible for CA (Name & Org) by clicking in the box. FOD designations (for example "STO") and the associated name will come up. Just select the appropriate FOD. **NOTE:** Contact the MSGP Project Leader at 667-1312 or hbensen@lanl.gov if the FOD name or organization is incorrect, so this can be corrected. • Describe Specific Evaluation Location (for example "Northeast corner of Building TA-3-66") • Inspector Z-Number by clicking in the box, which will populate it with your Z number. In most instances, the DEP should be identified as the inspector. Note: If you are entering the CA and are not the DEP, you will have to enter the DEP's Z number or they will not have the ability to update the corrective action. Once all of the above information is entered correctly, click "Save" and go

	to Step 3. All boxes identified with a red asterisk are "required fields" and shall be filled out. Note: The system will automatically assign a Corrective Action Report ID number.
3	Click "Go To Corrective Action Details" in the middle of the screen. Under the "Corrective Action Details" tab, enter the following: • Identify the condition triggering the need for this review by clicking on the "List" tab and selecting an option or selecting "Other" and entering a description of the condition. • Briefly describe the nature of the problem identified during the inspection (e.g., erosion, damage to a BMP, trash, spill, etc.) and the specific evaluation location. **NOTE:** Spills or other emergency situations may identify the need for a corrective action that was not identified during an inspection. • How the problem was identified by clicking on the "List" tab and selecting an option or selecting "Other" and entering a description of the problem. • Description of the corrective action taken, or to be taken, to eliminate or further investigate the problem (e.g., describe modifications or repairs to control measures, analyses to be conducted, etc.) or if no modifications are needed, the basis for that determination. • Did/will the corrective action require modification of your SWPPP. Type in "Y" for yes and "N" for no. • Date Corrective action was initiated (mm/dd/yyyy) • Date corrective action was completed **OR** expected completion date (mm/dd/yyyy) **NOTE:** If the corrective action has not been completed, enter an expected completion date. Do not put a date in both locations. If the corrective action has not been completed, provide the status of the corrective action and describe any remaining steps (including timeframes associated with each step) necessary to complete the corrective action. **NOTE:** This should only be filled out if the corrective action has not been completed. If the corrective action has been completed, enter "N/A." Make sure to hit the "save" tab in the bottom right hand corner so the corrective action information is retained. If you want to enter more corrective actions, go back to the "Corrective Action Header" tab and press the "Enter New Corrective Action" button in the lower left hand corner of the screen (see step #2). Hitting the "Exit" button will cause you to exit from the system.

	All boxes identified with a red asterisk are "required fields" and shall be filled out. If a date is not included or identified as an expected completion date, ENV-RCRA storm water compliance personnel will enter a completion date of 30 days after the corrective action was identified.

5.7 UPDATING CORRECTIVE ACTIONS

To update a corrective action in the ENV-RCRA MSGP Corrective Action Report Findings database, perform the following steps:

Step	Action
1	From this web page: http://int.lanl.gov/environment/water/guidance/swmgp.shtml, under the heading "Compliance Tools". Click on the link "MSGP Corrective Action Report Findings Database" to access the database and tab down to the corrective action number you want to edit. Click on "Edit."
2	Navigate to the blank that you will be changing and input the updated information. It is anticipated that most changes will occur relative to updating the status of corrective actions. Save all changes to the information. Remember, you should only have a date under "Date corrective action completed **OR** the "expected to be completion," but not both.

5.8 VALIDATING CORRECTIVE ACTIONS

ENV-RCRA storm water personnel will periodically validate the information contained in the ENV-RCRA MSGP Corrective Action Report Findings database. To validate a corrective action in the ENV-RCRA MSGP Corrective Action Report Findings database, perform the following steps:

Step	Action
1	From this web page: http://int.lanl.gov/environment/water/guidance/swmgp.shtml, under the heading "Compliance Tools". Click on the link "MSGP Corrective Action Report Findings Database" to access the database.

2	Check all entered fields for a corrective action to ensure that all information is clear, correct, and concise. If not, correct the information by navigating to the information that needs to be changed and making the change. Save all changes to the information. All information shall be validated before running the final annual report.
3	For ENV-RCRA storm water personnel only, under "status" select "void" if the corrective action is a repeat of a previous corrective action or if it is determined not to be a corrective action. This will delete the corrective action from the annual report.

5.9 INSTITUTIONAL PERFORMANCE FEEDBACK AND IMPROVEMENT TRACKING SYSTEM (PFITS)

PFITS is the institutional performance and tracking system for identified issues. A corrective action that meets any of the following criteria will be entered into the PFITS system, as deemed necessary.

- Corrective action was not completed by the expected completion date entered into the database.
- No action was taken to remedy an identified issue with a control measure within 14 days of discovery or before the next storm event or as soon as practicable following that storm event (Section 3.3 of the 2008 MSGP).
- Repeat corrective actions or trends identified by ENV-RCRA MSGP storm water personnel.
- Conditions requiring immediate action, where failure to take action would result in pollutants being released to water of the state or an immediate non-compliance with the 2008 MSGP.
- Violations identified by the regulatory authority.
- Other issues as deemed necessary by MSGP storm water personnel.

Once every month, ENV-RCRA storm water personnel will evaluate a summary of open corrective actions in the ENV-RCRA MSGP Corrective Action Report Findings database and using the above criteria will determine which corrective actions, if any, should be transferred into PFITS. When the monthly notification of outstanding corrective actions is sent out, evaluate whether any of the outstanding corrective actions meet the above conditions. Send those that do to the Environmental Protection Division's Improvement Management Coordinator (IMC) so that she can enter the information into PFITS. The summary report will contain the following information, at a minimum:

- Date the corrective action was identified;
- Person that identified the corrective action;

- A description of the nature of the problem identified and what needs to be done to address the corrective action.
- Whether the corrective action was identified internal to LANL or External to LANL.

5.10 NOTIFICATIONS FOR NEW AND OVERDUE CORRECTIVE ACTIONS

When a new corrective action is entered into the ENV-RCRA MSGP Corrective Action Report Findings database, the FOD, ESH&Q Manager, Operations Manager, inspector (usually the DEP) and ENV-RCRA MSGP storm water personnel are notified automatically by e-mail (unless the corrective action is closed the same day it is entered). This will assist the FOD, ESH& Q Managers, Operations Managers and the DEPs with keeping track of new corrective actions.

An automatic e-mail is sent the first of each month notifying the FOD, ESH&Q Manager, Operations Manager and DEPs of all overdue corrective actions for their industrial facilities. The Environmental Protection Division Leader and ENV-RCRA Group Leader receive a web link that contains a bar graph showing corrective actions 30 to 60 days overdue, 60 to 90 days overdue, 90 days to 1 year overdue, and those greater than a year overdue. In addition, they receive a link with summary information on each corrective action overdue sorted by FOD.

6.0 REFERENCES

- Federal Register: *Final National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Industrial Activities.* Federal Register: September 29, 2008, Volume 73, Number 189.
- P300, *Integrated Work Management*
- P315, *Conduct of Operations Manual*
- PD103, *Worker Safety and Health Policy*
- SD100, *Integrated Safety Management System Description Document with Embedded 10 CFR 851 Worker Safety and Health Program*
- P101-18, *Procedure for Pause/Stop Work*
- PD410, *Los Alamos National Laboratory Environmental ALARA Program*
- P121, *Radiation Protection*
- ENV-DO QP-106, *Document Control*
- ENV-DO-QP-115, *Personnel Training*
- ENV-DO-QP-104, *Work Safety Review*

In addition to these documents, please read any site specific requirements before proceeding with work.

7.0 DEFINITIONS

Best Management Practice (BMP): Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. (*40 CFR Part 122.2)*

Control Measure: Any BMP or other method (including effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the United States.

CA: Corrective Action

DEP: Deployed Environmental Professional

EPA: Environmental Protection Agency

FOD: Facility Operations Director

MSGP: Multi-Sector General Permit

SWPPP: Storm Water Pollution Prevention Plan

8.0 ATTACHMENTS

Attachment 1- Annual Reporting Form

Attachment 2- NPDES Multi-Sector General Permit Routine Inspection Form

Click here for "Required Read" credit.

ATTACHMENT 1- ANNUAL REPORTING FORM

NPDES Permit Tracking No.:

EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

Annual Reporting Form

A. GENERAL INFORMATION

1. Facility Name:

2. NPDES Permit Tracking No.:

3. Facility Physical Address:

a. Street:

b. City: c. State: d. Zip Code: -

4. Lead Inspectors Name: Title:

Additional Inspectors Name(s):

5. Contact Person: Title:

Phone: - - Ext. E-mail:

6. Inspection Date: / /

B. GENERAL INSPECTION FINDINGS

1. As part of this comprehensive site inspection, did you inspect all potential pollutant sources, including areas where industrial activity may be exposed to stormwater?
☐ YES ☐ NO

If NO, describe why not:

NOTE: *Complete Section C of this form for each industrial activity area inspected and included in your SWPPP or as newly identified in B.2 or B.3 below where pollutants may be exposed to stormwater.*

2. Did this inspection identify any stormwater or non-stormwater outfalls not previously identified in your SWPPP? ☐ YES ☐ NO

If YES, for each location, describe the sources of those stormwater and non-stormwater discharges and any associated control measures in place:

NPDES Permit Tracking No.:

3. Did this inspection identify any sources of stormwater or non-stormwater discharges not previously identified in your SWPPP? ☐ YES ☐ NO

If YES, describe these sources of stormwater or non-stormwater pollutants expected to be present in these discharges, and any control measures in place:

4. Did you review stormwater monitoring data as part of this inspection to identify potential pollutant hot spots? ☐ YES ☐ NO ☐ NA, no monitoring performed

If YES, summarize the findings of that review and describe any additional inspection activities resulting from this review:

5. Describe any evidence of pollutants entering the drainage system or discharging to surface waters, and the condition of and around outfalls, including flow dissipation measures to prevent scouring:

6. Have you taken or do you plan to take any corrective actions, as specified in Part 3 of the permit, since your last annual report submission (or since you received authorization to discharge under this permit if this is your first annual report), including any corrective actions identified as a result of this annual comprehensive site inspection?
☐ YES ☐ NO

If YES, how many conditions requiring review for correction action as specified in Parts 3.1 and 3.2 were addressed by these corrective actions? ☐☐

NOTE: *Complete the attached Corrective Action Form (Section D) for each condition identified, including any conditions identified as a result of this comprehensive stormwater inspection.*

NPDES Permit Tracking No.:

C. INDUSTRIAL ACTIVITY AREA SPECIFIC FINDINGS

Complete one block for each industrial activity area where pollutants may be exposed to stormwater. Copy this page for additional industrial activity areas.

In reviewing each area, you should consider:

- Industrial materials, residue, or trash that may have or could come into contact with stormwater;
- Leaks or spills from industrial equipment, drums, tanks, and other containers;
- Offsite tracking of industrial or waste materials from areas of no exposure to exposed areas; and
- Tracking or blowing of raw, final, or waste materials from areas of no exposure to exposed areas.

INDUSTRIAL ACTIVITY AREA _____:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO

3. Have any control measures failed and require replacement? ☐ YES ☐ NO

4. Are any additional/revised control measures necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

INDUSTRIAL ACTIVITY AREA _____:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO

3. Have any control measures failed and require replacement? ☐ YES ☐ NO

4. Are any additional/revised c necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

INDUSTRIAL ACTIVITY AREA _____:

Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO

3. Have any control measures failed and require replacement? ☐ YES ☐ NO

4. Are any additional/revised BMPs necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

NPDES Permit Tracking No.:

NOTE: *Copy this page and attach additional pages as necessary*

INDUSTRIAL ACTIVITY AREA _____:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO
3. Have any control measures failed and require replacement? ☐ YES ☐ NO
4. Are any additional/revised BMPs necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

INDUSTRIAL ACTIVITY AREA _____:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO
3. Have any control measures failed and require replacement? ☐ YES ☐ NO
4. Are any additional/revised BMPs necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

INDUSTRIAL ACTIVITY AREA _____:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO
3. Have any control measures failed and require replacement? ☐ YES ☐ NO
4. Are any additional/revised BMPs necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

NPDES Permit Tracking No.:

D. CORRECTIVE ACTIONS

Complete this page for each specific condition requiring a corrective action or a review determining that no corrective action is needed. Copy this page for additional corrective actions or reviews.

Include both corrective actions that have been initiated or completed since the last annual report, and future corrective actions needed to address problems identified in this comprehensive stormwater inspection. Include an update on any outstanding corrective actions that had not been completed at the time of your previous annual report.

1. Corrective Action # ☐☐ of ☐☐ for this reporting period.

2. Is this corrective action:
   - ☐ An update on a corrective action from a previous annual report; or
   - ☐ A new corrective action?

3. Identify the condition(s) triggering the need for this review:
   - ☐ Unauthorized release or discharge
   - ☐ Numeric effluent limitation exceedance
   - ☐ Control measures inadequate to meet applicable water quality standards
   - ☐ Control measures inadequate to meet non-numeric effluent limitations
   - ☐ Control measures not properly operated or maintained
   - ☐ Change in facility operations necessitated change in control measures
   - ☐ Average benchmark value exceedance
   - ☐ Other (describe): _____

4. Briefly describe the nature of the problem identified:

5. Date problem identified: ☐☐/☐☐/☐☐☐☐

6. How problem was identified:
   - ☐ Comprehensive site inspection
   - ☐ Quarterly visual assessment
   - ☐ Routine facility inspection
   - ☐ Benchmark monitoring
   - ☐ Notification by EPA or State or local authorities
   - ☐ Other (describe): _____

7. Description of corrective action(s) taken or to be taken to eliminate or further investigate the problem (e.g., describe modifications or repairs to control measures, analyses to be conducted, etc.) or if no modifications are needed, basis for that determination:

8. Did/will this corrective action require modification of your SWPPP? ☐ YES ☐ NO

9. Date corrective action initiated: ☐☐/☐☐/☐☐☐☐

10. Date correction action completed: ☐☐/☐☐/☐☐☐☐ or expected to be completed: ☐☐/☐☐/☐☐☐☐

11. If corrective action not yet completed, provide the status of corrective action at the time of the comprehensive site inspection and describe any remaining steps (including timeframes associated with each step) necessary to complete corrective action:

NPDES Permit Tracking No.:

E. ANNUAL REPORT CERTIFICATION

1. Compliance Certification

Do you certify that your annual inspection has met the requirements of Part 4.2 of the permit, and that, based upon the results of this inspection, to the best of your knowledge, you are in compliance with the permit? ☐ YES ☐ NO

If NO, summarize why you are not in compliance with the permit:

2. Annual Report Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Authorized Representative Printed Name: Title:

Signature: Date Signed:

ATTACHMENT 2- NPDES MULTI-SECTOR GENERAL PERMIT ROUTINE INSPECTION FORM

Los Alamos National Laboratory
ENV-RCRA

NPDES Multi-Sector General Permit Routine Inspection Form
(rev. 03/2009) Page 1 of __ (use additional sheets if necessary)

Name of Facility:	**Responsible FOD (Name & Organization):**	
Qualified Inspector(s): **Others Present:**	**Inspection type:** ☐ Quarterly ☐ Other	**Date of inspection (MM/DD/YYYY):** **Time of inspection:**

Weather: ❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snow ❑ High Winds ❑ Other:
Temperature: ° F
Is Inspection Being Conducted During a Storm Water Discharge? ❑Yes ❑No

#	Structural Control Measures (BMP)s	Location	Operating Effectively (Yes or No)?	If No, Need to Maintain (M), Repair (R) or Replace (RP)?	Corrective Action Needed and Notes (identify needed maintenance and repairs, or any failed control measures that need replacement)
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12					

Were additional BMPs or Control Measures implemented? ☐ Yes ☐ No **Describe:**

Were previously identified conditions corrected before the next anticipated storm event? ☐ Yes ☐ No **If No, describe reason:**

Area/Activity (Areas of Industrial Materials or Activities Exposed to Storm Water)	Inspected?	Controls Adequate?	Corrective Action Needed and Notes (List area letter with comments below)
A. Material loading/unloading & storage areas			
B. Equipment operations & maintenance areas			
C. Fueling Areas			
D. Outdoor vehicle & equipment washing areas			
E. Waste Handling & disposal areas			
F. Erodible areas / construction			
G. Non-storm water / illicit connections			
H. Salt storage piles or pile containing salt			
I. Dust generation & vehicle tracking			

Are the SWPP Plan maintenance, schedules and procedures being implemented at the facility? ☐ Yes ☐ No

Were any Corrective Actions initiated or completed? ☐ Yes ☐ No **Describe:**

Are there any conditions requiring Corrective Action? ☐ Yes ☐ No **If Yes, List Number of Corrective Actions Required** _____
(Note – need a Corrective Action Form for each listed)

Los Alamos National Laboratory
ENV-RCRA

NPDES Multi-Sector General Permit Inspection Form
(rev. 03/2009) Certification Sheet

Non-Compliance

Describe any incidents of non-compliance and/or need for corrective action observed and not described above:

Additional Control Measures

Describe any additional control measures needed to comply with the permit requirements:

Notes

Use this space for any additional notes or observations from the inspection:

Inspector's Signature and date:_____

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print name and title: _____

Signature:_____ **Date:**_____

ENV-CP-QP-045.1	
Effective Date: September 5, 2013	Next Review Date: August 5, 2015

Environment, Safety, Health Directorate

Environmental Protection – Compliance Programs Quality Procedure

Installing, Setting Up, and Operating ISCO Samplers for the MSGP

Reviewers:

Name:	Organization:	Signature:	Date:
Melanie Lamb	ADESH-OIO, QA Specialist	Signature on file	8/28/13

Derivative Classifier: ☐ **Unclassified** ☒ **DUSA_ENVPRO**

Name:	Organization:	Signature:	Date:
Ellena Martinez	ADESH-OIO	Signature on file	8/28/13

Approval Signatures:

Subject Matter Expert:	Organization:	Signature:	Date:
Holly Wheeler	ENV-CP	Signature on file	8/29/13
Responsible Line Manager:	Organization:	Signature:	Date:
Michael Saladen	ENV-CP Team Lead	Signature on file	8/29/13
Responsible Line Manager:	Organization:	Signature:	Date:
Anthony Grieggs	ENV-CP Group Leader	Signature on file	9/5/13

CONTROLLED DOCUMENT

This copy is uncontrolled. The controlled copy can be found on the ENV Division Web page.

Users are responsible for ensuring they work to the latest approved version.

History of Revisions

Document Number *[Include revision number, beginning with Revision 0]*	**Effective Date** *[Document Control Coordinator inserts effective date]*	**Description of Changes** *[List specific changes made since the previous revision]*
0	03/11	New Document.
1	04/13	Biennial Review and Revision
2	09/13	Biennial Review and Revision

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1.0 PURPOSE

This procedure describes the installation, setup, programming, and operation of Teledyne ISCO Avalanche and Model 3700 full-size portable automated samplers used to collect storm water runoff samples for the Multi-Sector General Permit (MSGP).

2.0 SCOPE

This procedure applies to all ENV-CP technical staff and contractor personnel conducting installation, operation, maintenance and sampling activities at single stage stations used for monitoring under the MSGP.

2.1 HAZARD REVIEW

Hazards in the work described in this procedure are controlled thorough site specific IWDs. The hazard level of the activities in this procedure is **moderate**.

3.0 RESPONSIBILITIES

The following personnel require training before implementing this procedure:

- This procedure applies to all ENV-CP MSGP storm water compliance personnel conducting installation, operation, maintenance and sampling activities at MSGP single stage monitoring stations.

The training method for this procedure is “self-study” (reading). For ENV-CP staff, this is documented in accordance with ENV-DO-QP-115, *Personnel Training*. Other participating groups may require training documentation pursuant to local procedures.

Actions specified within this procedure, unless proceeded with “should” or “may,” are to be considered mandatory (i.e., “shall”, “will”, “must”).

3.1 PREREQUISITES

Personnel performing this procedure will be familiar with the most current versions of the following procedures and operation manuals:

- ENV-CP MSGP Sampling and Analysis Plan for the current monitoring year
- Manual for Teledyne ISCO Sampler Model 3700.
- Manual for Teledyne ISCO Avalanche refrigerated sampler
- Facility/FOD specific IWDs for the MSGP

4.0 DOCUMENT CONTROL/RECORDS MANAGEMENT

The following records are generated as a result of this procedure and are maintained in accordance with ENV-DO-QP-110, *Records Management Program* with the originals on file at ENV-CP offices:

Completed work orders for:

- LANL MSGP ISCO Sampler Installation Form 045-1(Attachment 1)
- LANL MSGP ISCO Sampler Activation Form 045-3 (Attachment 6)
- LANL MSGP ISCO Sampler Winter Shutdown 045-5 (Attachment 9)
- LANL MSGP ISCO Sampler Decommission 045-6 (Attachment 10)

5.0 WORK PROCESSES

The discharge of storm water from industrial facilities at Los Alamos National Laboratory (LANL, the Laboratory) is regulated under the National Pollutant Discharge Elimination System (NPDES) *Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activity* (MSGP). The current MSGP became effective on September 29, 2008 pursuant to 73 FR 56572. The Laboratory's MSGP permit coverage (Permit Tracking No. NMR05GB21) requires storm water quality monitoring to evaluate the overall effectiveness of control measures. ISCO samplers coupled with Model 1640 sampler actuators are used at MSGP Program monitoring stations. Refrigerated (Avalanche) and/or non-refrigerated (Model 3700) samplers may be deployed; and may be configured with multi-battery arrays, solar panels, and surge protectors.

5.1 EQUIPMENT AND TOOLS

Ensure the following equipment is available in the field vehicle:

- Copy of this procedure
- Copy of the appropriate Integrated Work Document(s) (IWDs)
- Charged spare battery(ies)
- Battery voltage tester
- Spare tubing (pump, suction, discharge types, sampler specific)
- Spare sample bottles
- Shovels
- Wooden stakes
- Plastic wire "zip" ties
- Cell phone (only government cell phones with the battery removed are allowed in secure areas)
- Appropriate tools (including insulated tools for electrical work) in tool box
- Issued Work Orders and associated forms
- Necessary access and station keys
- Ziploc® plastic storage bags
- Tape measure
- Sturdy hiking boots or steel toed shoes with soles that grip

The time on the ISCO sampler clock must be verified upon arrival at the site. The ISCO clocks must be set to Mountain Standard Time (MST) at all times, with no daylight saving time adjustment. Cellular phones can be used to verify the time.

5.2 ISCO SAMPLER INSTALLATION

Step	Action
1	Work Orders are issued for all field operations at individual MSGP monitored outfalls. Obtain the Work Order with the LANL MSGP ISCO Sampler Installation Form 045-1 (Attachment 1). The Work Order specifies the MSGP outfall and target date for the work to be performed. An outfall-specific equipment list with specifications and configuration settings is provided on each Work Order.
2	Deploy the ISCO sampler and charged battery on level ground above the flood plain. Often, large tool/storage boxes (Greenlee™) are used for equipment protection in the field. **NOTE:** These boxes are locked. Therefore, a key should be obtained prior to accessing them. The sampler should be as level as possible to allow effective sample collection. Verify/record the ISCO sampler serial number and the battery tracking number(s) on the Work Order.
3	Install the separate protective battery box for the charged battery (follow manufacturer's instructions).
4	Determine the bottle set configuration from the equipment list on the Work Order. • If a Model 3700 sampler is indicated, install the correct distributor arm (has either "12" or "24" embossed on bottom at outlet). • For an Avalanche sampler, attach either the discharge tube guide (single bottle configuration) or the distributor arm (multi-bottle configuration) and the appropriate bottle adapter plate. If an adapter plate is not available, the inside of the sampler may need to be configured by hand (i.e., add form) to prevent bottles from moving around during a sampling event. • Install required bottles and retaining devices in the sampler base. • Check that the end of the discharge tubing does not extend below the bottom face of the distributor arm (where it could snag the bottle tops and jam as the arm advances through the bottle sequence). • Remove and place the clean bottle caps in a new Ziploc® plastic bag.
5	Attach a length (in whole foot increments) of 3/8-inch diameter Teflon suction line to the sampler intake line and anchor as needed for the Outfall location. Measure and record (for later programming steps) the tubing length used. Route the sample tubing downslope from the sampler to the intake point so that there is a continuous slope with no valleys that could retain water between sample intervals.
6	Install the actuator: • Anchor a stake to the channel bottom in the main flow of the outfall discharge. • Attach the sampler intake tube and the 1640 liquid level detector (actuator) to the stake. • Position the actuator at least ½ inch above the intake tube to ensure there is enough water to submerge the intake when the sampler is activated. • Connect the actuator to the sampler using the cable connector provided by the manufacturer. • If necessary, use a gravel bag to create a small pooling area for the actuator and sampler intake to sit in. The actuator height above the channel bottom is established using professional judgment. For example, the intake may be positioned 1 inch or less above the bottom of low-flowing wide channels, but higher than 1 inch in a high-flowing narrow channel.

7	**NOTE:** You must be a trained electrical worker and have completed all required courses in Training Plan #2876 to conduct this step. Connect the sampler to the power source, either a 12 Volt 110 A-h deep cycle lead acid battery or other power source such as a multi-battery array coupled with a solar panel, as appropriate. Record the battery tracking numbers in the equipment list section of the Work Order. (Refer to Attachments 2 and 3 for the wiring diagram for Avalanche sampler installation.)

5.3 CONFIGURING ISCO 3700 SAMPLERS

Step	Action
1	When a new ISCO 3700 sampler is being installed, configure the sampler in accordance with the steps contained in this section. Follow the project-specific configuration settings as indicated on the Work Order and given in Attachment 4, ISCO 3700 Configuration Settings.
2	Turn on the sampler by pressing the "On" button.
3	Press the "Enter/Program" button.
4	Select "Configuration".
5	Set the configuration parameters in accordance with the guidance in Attachment 4, ISCO 3700 Configuration Settings. After each selection is made, press the "Enter" button to allow the next configuration parameter to be displayed on the screen.
6	After the programming is complete, select "Run diagnostics" and press "Enter" to run the system diagnostic test. The diagnostic tests include the following: • RAM and ROM test • LCD test • Pump test ("OFF/ON" number should be between 50 and 200 for a successful test) • Distributor test -- select "YES" to run test. Test will move the distributor to Position 24 and then return it to Position 1.
7	Following the diagnostic tests, "Reinitialize Controller" will be displayed. Select "No" and press "Enter." Do not select "Yes." If "Yes" is selected, the sampler will reset a number of configuration and program settings to the factory default values.
8	To leave the configuration sequence, use the "Exit configuration" and press "Yes" or press the "Enter/Program" key.

5.4 PROGRAMMING ISCO 3700 SAMPLERS

Step	Action
1	Follow the steps in this process to program a new ISCO or to confirm the program settings are correct for a specific location. Follow the project-specific program settings as indicated on the

	work order and given in Attachment 5, ISCO 3700 Program Sequence.
2	Turn on the sampler by pressing the “ON” button
3	Press the “Enter/Program” button.
4	Select “Program”.
5	Set the program parameters in accordance with the guidance on Attachment 5, ISCO 3700 Program Sequence. After each selection is made, press the “Enter” button to allow the next configuration parameter to be displayed on the screen.
6	Set the switch on the actuator to “Latch.”
7	**NOTE:** You must be a trained electrical worker and have completed all required courses in Training Plan #2876 to conduct this step.
8	Complete the responses for the sampler installation tasks listed on the Work Order. Sign and date the Work Order and ensure all items contained within it have been completed.

5.5 ACTIVATING ISCO 3700 SAMPLERS

Step	Action
1	Follow the steps in this section when a Work Order is received to activate a sampler (generally at the beginning of a field season or at the beginning of the next quarter after the last quarterly monitoring sample was obtained). Note: The MSGP monitoring quarters are as follows • April 1 through May 31 • June 1 through July 31 • August 1 through September 30, and • October 1, through November 30.
2	Obtain the Work Order with the LANL MSGP Sampler Activation Form 045-3 (Attachment 6). The Work Order specifies the MSGP Outfall and target date for the work to be performed. An Outfall-specific equipment list with specifications and configuration settings is provided on each Work Order. **NOTE:** You must be a trained electrical worker and have completed all required courses in Training Plan #2876 to conduct this step. If not already installed, install and hook up the charged battery. If a battery is already in place, use the voltage tester to check for minimum voltage of 11.7 volts. If the voltage is lower, replace the battery with a charged battery.
3	Turn the sampler ON. “Program halted” will be displayed; press the Enter/Program button to enter program/configure sequence.
4	Check the configuration and programming parameters to ensure they are still correct for the specific installation (see Attachment 4 and 5 for the correct parameters).
5	Check integrity and condition of sampler tubing, actuator, wiring, etc., to ensure sampler will properly collect a sample.

6	To test the integrity of the tubing, press "Pump forward" to turn on pump and test for suction at the tubing intake. Press "Stop" to turn off pump. If no suction is felt at the intake, check the integrity of the tubing and replace as necessary.
7	To activate the sampler, press "Start sampling" and "Enter" twice.
8	Ensure the sampler indicates "Sampler Inhibited".
9	Complete the responses for the sampler activation tasks listed on the Work Order. Sign and date the Work Order and ensure all items contained within it have been completed.

5.6 CONFIGURING ISCO AVALANCHE SAMPLERS

Step	Action
1	When a new ISCO Avalanche sampler is being installed, configure the sampler in accordance with the steps contained in this section. Follow the project-specific configuration settings as indicated on the work order and given in Attachment 8, ISCO Avalanche Configuration Settings.
2	Turn on the sampler by pressing the "Standby" key.
3	From the main menu, select Other Functions, to access the menus and select options given in Attachment 8.
4	Set the configuration parameters in accordance with the guidance on Attachment 8, ISCO Avalanche Configuration Settings.
5	After the programming is complete, select "Run diagnostics" and press "Enter" to run the system diagnostic test. These include the following: • RAM and ROM test • Pump test ("ON/OFF" ratio should be between 0.80 and 1.25 for a successful test) • Distributor test -- select "YES" to run test. Test will move the distributor to Position 14 and then return it to Position 1.
6	Following the diagnostic tests, "Reinitialize Controller" will be displayed. Select "No" and press the "Enter" key. (If "Yes" is selected, the sampler will reset a number of configuration and program settings to the factory default values).
7	If a 700 series module (e.g., pH) is to be installed, consult the equipment manufacturer's manual for installation instructions. **NOTE:** The pH module is only required at the Asphalt Batch Plant.
8	Complete the responses for the sampler installation tasks listed on the Work Order. Sign and date the Work Order and ensure all items contained within it have been completed.

5.7 PROGRAMMING ISCO AVALANCHE SAMPLERS

Step	Action
1	Follow the steps in this process to program a new ISCO or to confirm the program settings are correct for a specific location and bottle configuration. Follow the project-specific program settings as indicated on the work order and given in Attachment 8, ISCO Avalanche Program Sequence.
2	Turn on the sampler by pressing the "Standby" key.
3	Press the "Program" button.
4	Select the current program to review settings, or choose "Select New Program" to create a new program with different settings.
5	Select the current program to review settings, or choose "Select New Program" to create a new program with different settings.
6	At the prompt "Programming complete, run this program now?" , select "Yes" if sampler is scheduled to be active, and "No" if sampler is in stand down.
7	Set switch on actuator to "Latch."
8	Complete the responses for the sampler installation tasks listed on the Work Order. Sign and date the Work Order and ensure all items within it have been completed.

5.8 ACTIVATING ISCO AVALANCHE SAMPLERS

Step	Action
1	Follow the steps in this section when a Work Order is received to activate a sampler (generally at the beginning of a field season or at the beginning of the next quarter after the last quarterly monitoring sample was obtained). Note: The MSGP monitoring quarters are as follows • April 1 through May 31 • June 1 through July 31 • August 1 through September 30, and • October 1, through November 30.
2	**NOTE:** You must be a trained electrical worker and have completed all required courses in Training Plan #2876 to conduct this step. If not already installed, install and hook up the charged battery(ies). If a battery is already in place, use the voltage tester to check for minimum voltage of 11.7 volts. If the voltage is lower, replace the battery with a charged battery.
3	Turn on sampler power. From the main menu, select "Program" and the "Enter" key to enter programming sequence, and "Other Functions" to enter the configuration settings.
4	Check the programming/configuration parameters to ensure they are still correct for the specific installation – follow the two preceding sections for the steps and see Attachment 7 and 8 for the correct parameters.
5	Check integrity and condition of sampling tubes, actuator, wiring, etc., to ensure sampler

	will properly collect a sample.
6	From the main menu, select "Other Functions" ►"Manual Functions" ►"Operate Pump" to perform a manual suction test. To test the integrity of the tubing, press "Pump forward" to turn on pump and test for suction at the tubing intake. Press "Stop" to turn off pump. If no suction is felt at the intake, check the integrity of the tubing and replace as necessary.
7	Reset the actuator by toggling the switch to "Reset" then back to "Latch." To activate the sampler, ensure the correct program name is displayed on the main menu and select "Run".
8	Ensure the sampler indicates "Program Disabled".
9	Note: The Avalanche refrigeration system is active any time the controller is powered. This is true for all states (including OFF), except for the time between entering RUN and the completion of the first sample, and when the pump is running. To conserve power, the Avalanche assumes that during this time there is no sample liquid to cool.
10	Ensure that all items on the Work Order have been completed.

5.9 STANDING DOWN OR WINTERIZING SAMPLERS

Step	Action
1	Follow the steps in this section when a Work Order is received to turn off ("stand down") a sampler (generally at the end of a field season, which is November 30, or to disable a sampler for a certain time period after a sample was collected). Fill out the LANL MSGP ISCO Sampler Winter Shut-Down Form in Attachment 9.
2	ISCO 3700: Turn off power. ISCO Avalanche: The Avalanche refrigeration system is active any time the controller is powered. This is true for all states (including OFF), except for the time between entering RUN and the completion of the first sample, and when the pump is running. To conserve power, the Avalanche assumes that during this time there is no sample liquid to cool. **NOTE:** To ensure that the refrigeration system does not activate during an intended stand down, disconnect the sampler from the power source.
3	Remove the battery and return it to the storage compound at TA-64 or other specified location identified by ENV-CP MSGP stormwater compliance personnel. Store cables inside the Greenlee™ box. If the actuator and tubing are not contained within conduit, disconnect these and place them in the box. Close sampler. Avalanche samplers must not be left in place for the winter, and are required to be returned to ENV-CP's storage shed.
4	Ensure that all items on the Work Order have been completed.

5.10 SAMPLER RESET AND RE-INITIALIZATION AFTER SAMPLE COLLECTION

Step	Action
1	Follow ENV-CP-QP-047, *Inspecting Storm Water Runoff Samplers and Retrieving Samples for the MSGP* for collecting samples from an ISCO and installing new bottles so it is ready to collect new samples.
2	After collecting samples and resetting the sampler, follow instructions on sample collection Work Order, the updated sample tracking log or confer with the MSGP Project Lead regarding whether the sampler should be disabled. If sampler is to be deactivated, follow the steps specific to each sampler provided in the preceding section. If an ISCO 3700 sampler is to be left activated, reset the actuator by toggling the switch to "Reset" then back to "Latch", and press "Start sampling" and "Enter" twice. Ensure the sampler display indicates "Sampler Inhibited": If an ISCO Avalanche sampler is to be left activated, reset the actuator by toggling the switch to "Reset" then back to "Latch." From the main menu, verify the correct program name is displayed and select "Run." Ensure the sampler display indicates "Program Disabled."

5.11 REMOVING A SAMPLER

Step	Action
1	Follow the steps in this process when a Work Order is received to un-install or remove a sampler. Fill out the LANL MSGP ISCO Sampler Decommission Form in Attachment 10.
2	Disconnect all equipment and remove it from the site. Return the equipment to the ENV-CP Storage Shed or other location specified by MSGP storm water compliance personnel.
3	Dispose of all equipment components that contacted samples (tubing, bottles, etc.) as waste according to applicable waste management procedure. For assistance, contact the Waste Management Coordinator for TA-59.
4	Ensure that all items on the Work Order have been completed.

6.0 REFERENCES

ENV-DO-QP-110, *Records Management Program*

ENV-DO-QP-115, *Personnel Training*

ENV-CP-QP-047, *Inspecting Storm Water Runoff Samplers and Retrieving Samples for the MSGP*

7.0 DEFINITIONS

ENV-CP: Environmental Protection Division, Compliance Programs Group

Grab Sample: A single sample collected at an NPDES outfall (using approved EPA methods) at a particular time that represents the composition of the storm water at that time and place.

IWD: Integrated Work Document

MSGP: Multi-Sector General Permit

MST: Mountain Standard Time

NPDES: National Pollutant Discharge Elimination System

8.0 ATTACHMENTS

Attachment 1- LANL MSGP ISCO Sampler Installation Form 045-1

Attachment 2- Wiring Diagram for Avalanche Sampler

Attachment 3 – Battery Photovoltaic Connection Wiring

Attachment 4 - ISCO 3700 Configuration Settings

Attachment 5 – ISCO 3700 Program Sequence

Attachment 6 – LANL MSGP ISCO Sampler Activation Form 045-3

Attachment 7 – ISCO Avalanche Configuration Settings

Attachment 8 – ISCO Avalanche Program Sequence

Attachment 9 – LANL MSGP ISCO Sampler Winter Shut-Down Form 045-5

Attachment 10 – LANL MSGP ISCO Sampler Decommission Form 045-6

ATTACHMENT 1- LANL MSGP ISCO SAMPLER INSTALLATION FORM 045-1

ENV-QP-045.0

LANL Multi-Sector General Permit
ISCO Sampler Installation Form

Form 045-1 (3/2011)

Outfall: 54-G-4 : 54-PAD10E Project ID: P-MSGP-2443 Work Order ID: MSGP-31193

Target Date: 4/1/2013

Project: MSGP 2013 Sampler Install

Reason: MSGP 2013 Sampler Installation

Date:_____ Time:_____

Name/Z#:_____

Name/Z#:_____

Lead Signature:_____

"I confirm the information as recorded is true, accurate and complete."

Verify the equipment list below. Make corrections as required and fill in missing information (e.g., serial numbers).

Equipment	Manufacturer	Model	Serial No.	Specification	Configuration
Actuator	ISCO	1640	210J01660		
Charge Controller	Xantrex	C-12	B20037667		
ISCO 3700 Sampler	Teledyne	3700	198H00978	Bottle Set	12c- 1 1L Glass, 11 1L Poly
ISCO 3700 Sampler	Teledyne	3700	198H00978	Program	Time / Multiplex no delay
ISCO Avalanche Sampler	Teledyne	Avalanche	210J00066	Bottle Set	14 950 mL Poly
ISCO Avalanche Sampler	Teledyne	Avalanche	210J00066	Program	1-Part, 14 Bottles, 950 mL
Pb-Acid Battery	Universal	110 A-h	MSGP-110-0311-07	Voltage	> 11.7 V
Pb-Acid Battery	Universal	110 A-h	MSGP-110-0311-08	Voltage	> 11.7 V
Pb-Acid Battery	Universal	110 A-h	MSGP-110-0311-09	Voltage	> 11.7 V
Solar Panel	SunWize	SW-S85P	11004467		

ISCO Sampler Tasks	Note: If "No" provide correct information or explanation.
Deploy battery(ies) if not listed in equipment list above. Record serial numbers of battery(ies) installed.	❒Yes ❒No
Deploy Avalanche sampler matching serial number listed in equipment list above for installation.	❒Yes ❒No
Deploy and install pH and Temperature Probe listed in equipment list above and probe saturation reservior.	❒Yes ❒No
Refer to the wiring diagram in ENV-QP-045.0 for the solar panel, battery configuration, and type of sampler being installed. Has wiring been completed according to instructions?	❒Yes ❒No
Is the sampler installed according to steps in ENV-QP-045.0?	❒Yes ❒No
Is a Greenlee box used?	❒Yes ❒No
Are electrical connections secure?	❒Yes ❒No
Record battery voltage(s). Voltage(s) > 11.7 V ?	❒Yes ❒No
Is the sampler physically configured for the types and number of bottles specified above (i.e., correct carousel, base, arm)?	❒Yes ❒No
Is the sampler programmed correctly per ENV-QP-045.0 for the program / bottle set specified above?	❒Yes ❒No
Does sampler pass the ISCO diagnostics test ?	❒Yes ❒No
Does sample tubing pass suction test?	❒Yes ❒No
Is sampler ON upon departure?	❒Yes ❒No
Does ISCO display either "Sampler Inhibited" or "Program Disabled"?	❒Yes ❒No
Has the actuator switch been reset to "Latch"?	❒Yes ❒No
If any maintenance completed, check YES and describe.	❒Yes ❒No
If any follow-on maintenance is required, check YES and describe.	❒Yes ❒No

LANL PERSONNEL USE ONLY (Initials and dates)

Accepted	Tech QC	ENV-RCRA Review
_____	_____	_____

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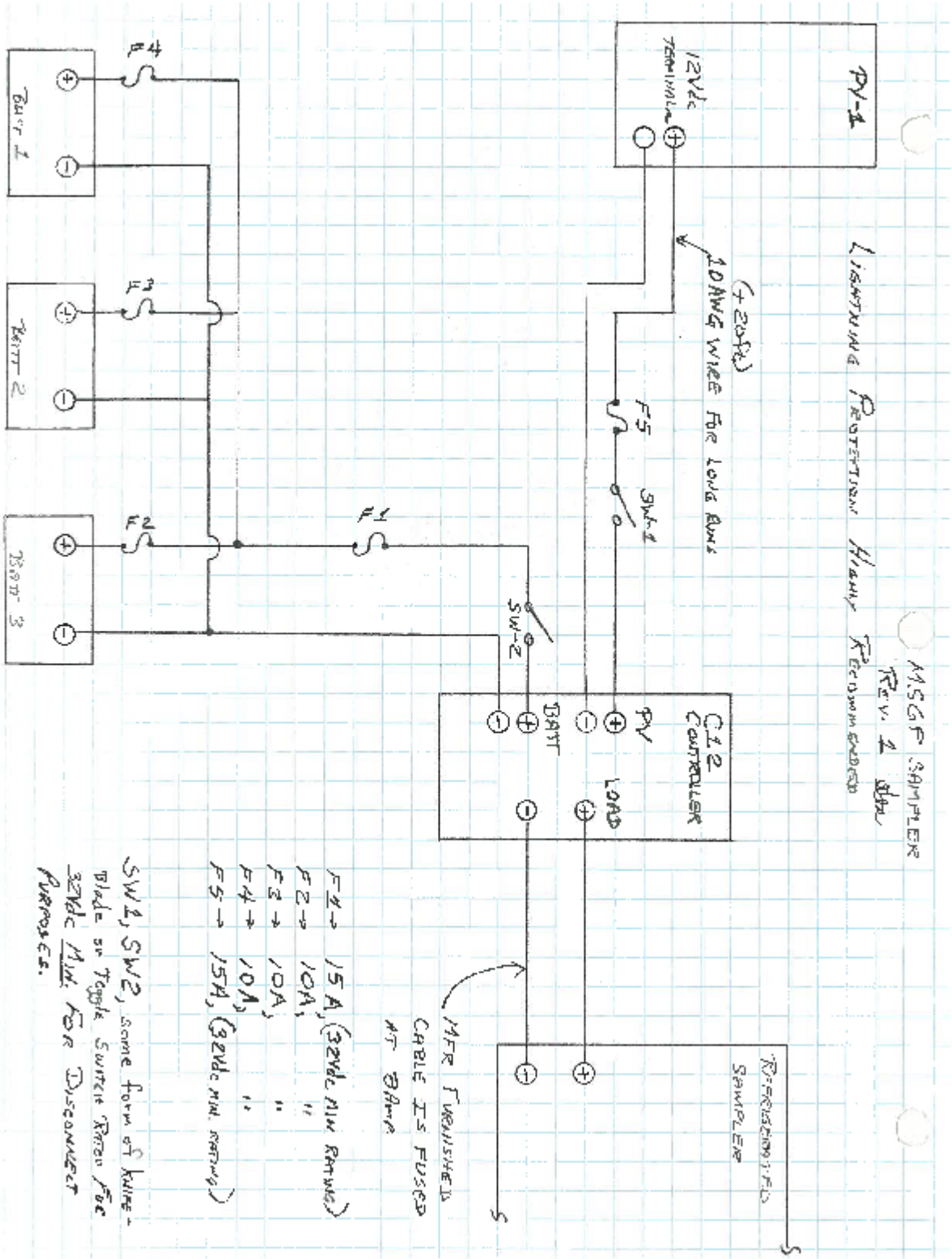
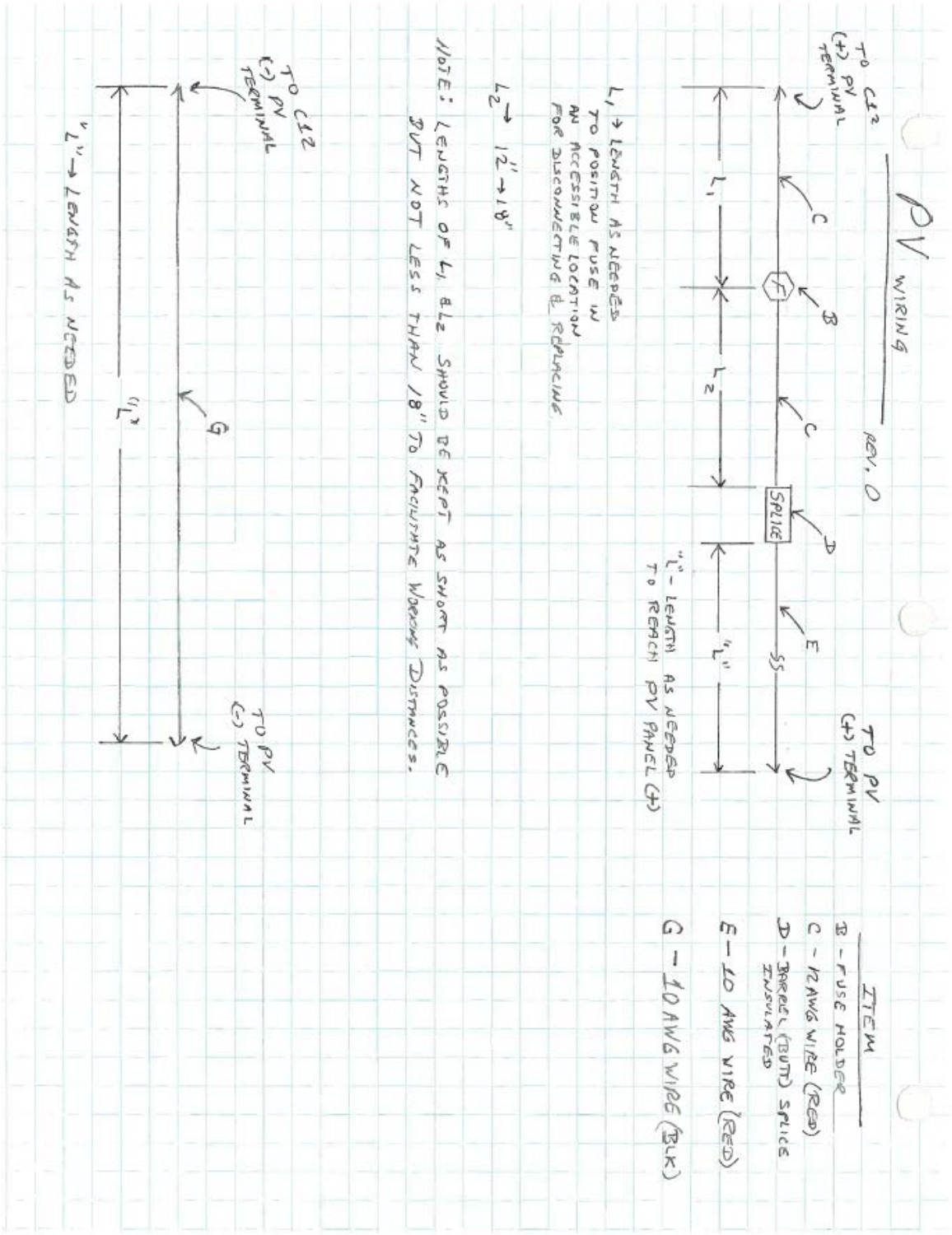
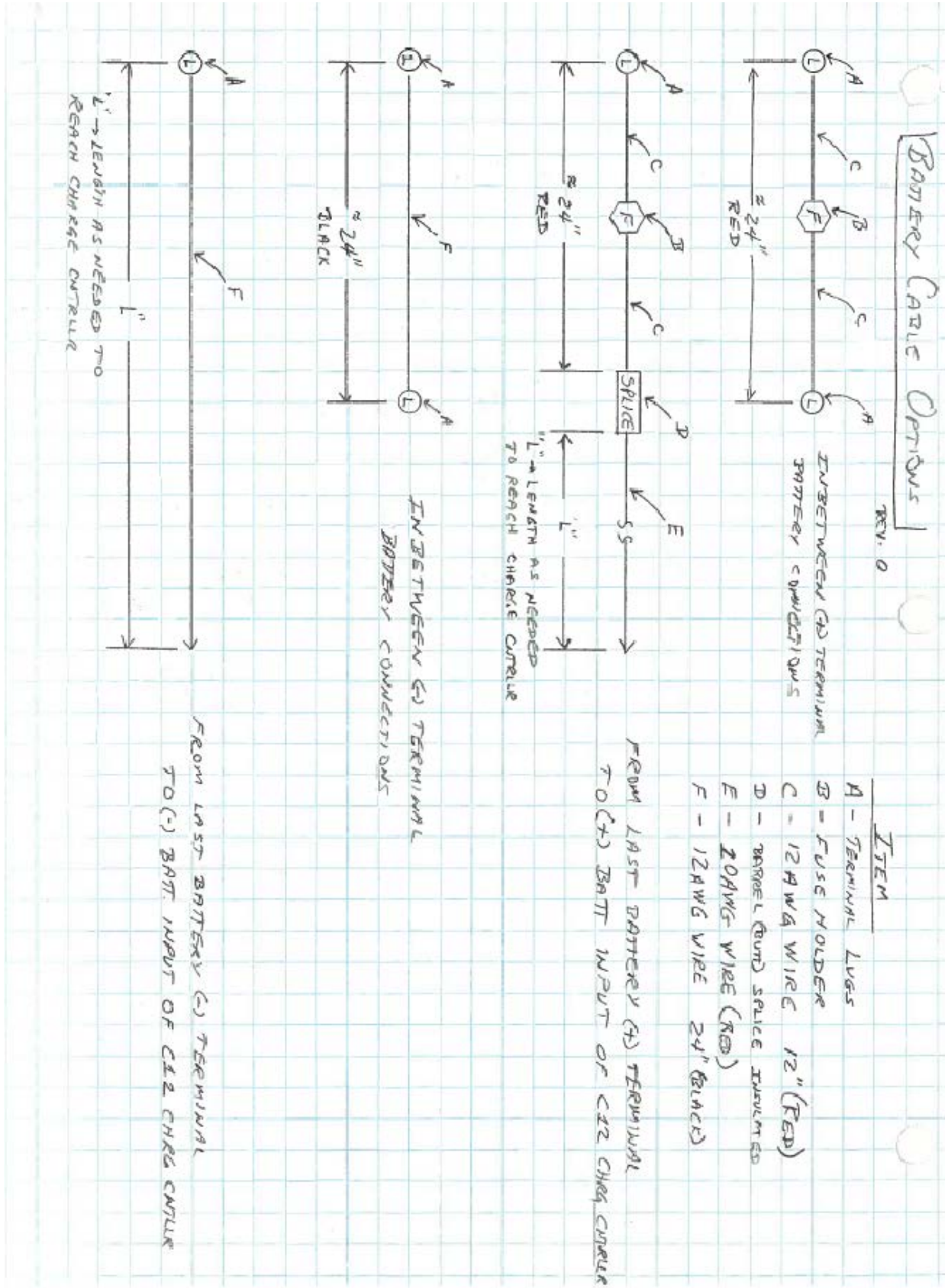
ATTACHMENT 2- WIRING DIAGRAM FOR AVALANCHE SAMPLER



ATTACHMENT 3 – BATTERY PHOTOVOLTAIC CONNECTION WIRING





BATTERY CABLE OPTIONS
REV. 0
INBETWEEN (+) TERMINAL BATTERY CONNECTIONS
≈ 24" RED
SPLICE
"L" → LENGTH AS NEEDED TO REACH CHARGE CNTRLR
INBETWEEN (-) TERMINAL BATTERY CONNECTIONS
≈ 24" BLACK
"L" → LENGTH AS NEEDED TO REACH CHARGE CNTRLR
ITEM
A - TERMINAL LUGS
B - FUSE HOLDER
C - 12AWG WIRE 12" (RED)
D - BARREL (BUTT) SPLICE INSULATED
E - 20AWG WIRE (RED)
F - 12AWG WIRE 24" (BLACK)
FROM LAST BATTERY (+) TERMINAL TO (+) BATT INPUT OF C12 CHRG CNTRLR
FROM LAST BATTERY (-) TERMINAL TO (-) BATT INPUT OF C12 CHRG CNTLR

ATTACHMENT 4 - ISCO 3700 CONFIGURATION SETTINGS

Parameter	Storm sampling with multiplex, timed delay	Time sampling with multiplex	Flow sampling with multiplex
Time/ Date	[Set to MST]	[Set to MST]	[Set to MST]
Portable/ Refrig	Portable	Portable	Portable
Bottles	12 or 24	12 or 24	12 or 24
Bottle volume	950 ml	1000 ml	1000 ml
Suction line diameter	3/8 inch	3/8 inch	3/8 inch
Suction line type	Teflon	Teflon	Teflon
Suction line length	X feet	X feet	X feet
Liquid detector	Enable	Enable	Enable
Rinse cycles	0	1	1
Enter Head Manually	No	Yes	Yes
Retry	1	1	1
Program mode	Extended	Basic	Basic
Load program	None	N/A	N/A
Save program as	None	N/A	N/A
Take sample at start time	No	N/A	N/A
Take sample at time switch	No	N/A	N/A
Enter intervals in minutes	1 minute	N/A	N/A
Calibrate sampler	Disable	Enable	Enable
Sampling stop/resume	Disable	N/A	N/A
Start time delay	0 minutes	0 minutes	0 minutes
Master slave	No	No	No
Sample upon Disable	No	No	No
Sample upon enable	No	Yes	Yes
Reset sample interval	Yes	Yes	No
Inhibit countdown	Yes	Yes	No
Event marker	Pulse	Pulse	Pulse
At the beginning of:	Purge	Purge	Purge
Purge counts presample counts	150	100	100
Post sample counts	394	1000	1000
Pump counts	[500,000]	[500,000]	[500,000]
Reset pump counter	No	No	No
Pump counts to warning	500,000	500,000	500,000
Program lock	Disable	Disable	Disable
Sampler ID number is:	[leave blank]	[leave blank]	[leave blank]
Run diagnostics	Yes	Yes	Yes
Test distributor	Yes	Yes	Yes
Re-initialize	No	No	No

ATTACHMENT 5 – ISCO 3700 PROGRAM SEQUENCE

Parameter	Storm sampling with multiplex, timed delay
[Switch on liquid actuator]	Set to "Latch"
Paced sampling	Storm
Time Mode 1st Bottle Group	X-minute delay
Timed Sample Event	1
Bottle per sample event	11 or 23
Sample volume	950 ml
Bottles available	1
2nd bottle group	Time
2nd group samples	1-minute delay
Sample interval	1 minute
Bottles per sampling event	1
Sample per bottle	1
Sample volume	950 ml
Enter start time	No

[Programming complete]

Parameter	Time sampling with multiplex
[Switch on liquid actuator]	Set to "Latch"
Time/Flow	Time
Min/Hr	1 min
Multiplex samples	Yes
Bottles/sample or Samples/Bottle	Bottles/ sample
Number of bottles	12 or 24
Sample volume	1000 ml
Suction head	XX Ft
Calibrate sample vol	No
Enter start time	No

[Programming complete]

Avalanche Program Sequence, cont.

Parameter	Time sampling, single bottle composite sample	Time sampling, 1-part program	Time sampling, 2-part program
Two-Part Program			
Part A	N/A	N/A	Yes
Assign bottle	N/A	N/A	1-X of 4 or 14
Pacing	N/A	N/A	Uniform time paced
Time between samples	N/A	N/A	1 minute
Distribution	N/A	N/A	Sequential
Bottles per event	N/A	N/A	1
Switch bottles on	N/A	N/A	Number of samples
Switch bottles every X samples	N/A	N/A	1
Run continuously	N/A	N/A	No
Sample volumes dependent on flow?	N/A	N/A	No
Sample volume	N/A	N/A	Select between 10 ml and full container volume
Enable programmed	N/A	N/A	None
Once enabled, stay enabled	N/A	N/A	Yes
Sample at enable	N/A	N/A	Yes
Sample at disable	N/A	N/A	No
Pauses and resumes	N/A	N/A	0
Part B	N/A	N/A	Yes
Pacing	N/A		Uniform time paced
Time between sample events	N/A	N/A	1 minute
Distribution	N/A	N/A	Sequential
Bottles per event	N/A	N/A	1
Switch bottles on	N/A	N/A	Number of samples
Switch bottles every X samples	N/A	N/A	1
Run continuously	N/A	N/A	No
Sample volumes dependent on flow?	N/A	N/A	No
Sample volume	N/A	N/A	Select between 10 ml and full container volume
Enable programmed	N/A	N/A	No

Avalanche Program Sequence, cont.

Parameter	**Time sampling, single bottle composite sample**	**Time sampling, 1-part program**	**Time sampling, 2-part program**
Once enabled, stay enabled	N/A	N/A	Yes
Sample at disable	N/A	N/A	No
Sample at enable	N/A	N/A	Yes
Once enabled, stay enabled	N/A	N/A	Yes
Pauses and resumes	N/A	N/A	0
Delay to start	N/A	N/A	No
Reset Sampler			
Switch on liquid actuator	Toggle to “Reset” then back to “Latch”	Toggle to “Reset” then back to “Latch”	Toggle to “Reset” then back to “Latch”
Select Program name	Run	Run	Run

ATTACHMENT 6 – LANL MSGP ISCO SAMPLER ACTIVATION FORM 045-3

ENV-QP-045.0

LANL Multi-Sector General Permit
ISCO Sampler Activation Form

Form 045-3 (3/2011)

Outfall: **3-PSP-5 : E121.9-ISCO 12** Project ID: **P-MSGP-830** Work Order ID: **MSGP-12785**

Target Date: **4/11/2011**

Project: MSGP Sampler Activation Q1 2011

Reason: MSGP Sampler Activation 2011 Q1

Date:_____ Time:_____

Name/Z#:_____

Name/Z#:_____

Lead Signature:_____

"I confirm the information as recorded is true, accurate and complete."

Equipment	Manufacturer	Model	Serial No.	Specification	Configuration
Actuator	ISCO	1640		Actuator Height	
ISCO Sampler 12c	Teledyne ISCO	ISCO 3700	198H01553	Bottle Set	12c- 1 1L Poly
ISCO Sampler 12c	Teledyne ISCO	ISCO 3700	198H01553	Program	Time / Multiplex no delay
Pb-Acid Battery				Voltage	> 11.7 V

ISCO Sampler Tasks	Note: If "No" provide correct information or explanation.	
Is the ISCO time delta < 1 min (MST)? If no, record adjustment.	❒Yes ❒No	
Does sampler pass the ISCO diagnostics test?	❒Yes ❒No	
Are electrical connections secure?	❒Yes ❒No	
Record battery voltage(s). Is/are voltage(s) > 11.7 V?	❒Yes ❒No	
Does ISCO display either "Bottle 1 of X afer 1" or "Sampler Inhibited"?	❒Yes ❒No	
Is bottle set described above installed?	❒Yes ❒No	
Is recorded height of actuator above channel bottom correct?	❒Yes ❒No	
If any maintenance completed, check Yes: Describe.	❒Yes ❒No	
If any follow-on maintenance is required, check Yes: Describe.	❒Yes ❒No	
Is sampler ON upon departure?	❒Yes ❒No	

Additional Notes:

LANL PERSONNEL USE ONLY (Initials and dates)

Accepted	Tech QC	RNV-RCRA Review
_____	_____	_____

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ATTACHMENT 7 – ISCO AVALANCHE CONFIGURATION SETTINGS

ISCO Avalanche Configuration Settings

Parameter	**All programs**
Maintenance	
Set Clock	[Set to MST]
Pump Tube Alarm	[1,000,000]
Reset pump counter	No
Run diagnostics	Yes
Re-initialize	No
Software Options	
Liquid detector	Liquid detect on
Target temperature	°C
Measurement interval	1 minute
Dual sampler mode	Off
Bottle full detect	Yes
Event mark	Every sample
Duration	3 second pulse at initial purge
Presample purge counts	100
Post sample counts	Dependent on head
Periodic serial output	No
Interrogator connector power	Alarm dial-outs only
Manual Functions	
Grab Sample	Manual option
Calibrate volume	Manual option
Operate pump	Manual option
Move distributor	Manual option
Other Settings/Misc	
Suction line diameter	3/8 inch
Suction line type	Teflon
Program lock	Disable

ATTACHMENT 8 – ISCO AVALANCHE PROGRAM SEQUENCE

Parameter	Time sampling, single bottle composite sample	Time sampling, 1-part program	Time sampling, 2-part program
Program			
Program mode	Extended	Extended	Extended
Program name	COMPOSITE	1-PART (# bottles)	2-PART (# bottles)
Site description	Station number	Station number	Station number
Units (length)	ft	ft	ft
Units (temperature)	°C	°C	°C
Data storage interval	1 minute	1 minute	1 minute
Number of bottles	1	4 or 14	4 or 14
Bottle volume	10000 ml, 4000 ml	2000 ml, 950 ml	2000 ml, 950 ml
Suction line length	X feet	X feet	X feet
Enter Head Manually	Yes	Yes	Yes
Rinse cycles	1	1	1
Retries	1	1	1
One-Part Program			
Pacing	Uniform time paced	Uniform time paced	N/A
Time between samples	Every one minute	Every one minute	N/A
Composite	1 sample	N/A	N/A
Run continuously	No	N/A	N/A
Take X sample(s)	1	N/A	N/A
Distribution	N/A	Sequential	N/A
Volume	Select between 10 ml and full container volume	Select between 10 ml and full container volume	N/A
Sample volumes dependent on flow	No	No	N/A
Enable programmed	None	None	N/A
Once enabled, stay enabled	Yes	Yes	N/A
Sample at enable	Yes	Yes	N/A
Sample at disable	No	No	N/A
Pauses and resumes	0	0	N/A
Delay to start	No	No	N/A

ATTACHMENT 9 – LANL MSGP ISCO SAMPLER WINTER SHUT-DOWN FORM 045-5

ENV-QP-045.0

LANL Multi-Sector General Permit
ISCO Sampler Winter Shutdown Form

Form 045-5 (3/2011)

Outfall: **3-PSP-5 : E121.9-ISCO 12** Project ID: **P-MSGP-833** Work Order ID: **MSGP-12803**

Target Date: **11/30/2011**

Project: MSGP ISCO Sampler Winter Shutdown

Reason: MSGP Sampler Winter Shutdown 2011

Date:_____ Time:_____

Name/Z#:_____

Name/Z#:_____

Lead Signature:_____

"I confirm the information as recorded is true, accurate and complete."

Verify the equipment list below. Make corrections as required and fill in missing information (e.g., serial numbers).

Equipment	Manufacturer	Model	Serial No.	Specification	Configuration
Actuator	ISCO	1640		Actuator Height	
ISCO Sampler 12c	Teledyne ISCO	ISCO 3700	198H01553	Bottle Set	12c- 1 1L Poly
ISCO Sampler 12c	Teledyne ISCO	ISCO 3700	198H01553	Program	Time / Multiplex no delay
Pb-Acid Battery				Voltage	> 11.7 V

ISCO Sampler Tasks	Note: If "No" provide correct information or explanation.	
Turn ISCO unit "OFF."	❒Yes ❒No	
Place caps securely on bottles in the sample carousel.	❒Yes ❒No	
Verify equipment list above.	❒Yes ❒No	
ISCO 3700 Sampler Units		
Disconnect and remove battery. Transport battery to MSGP stockroom for maintenance and storage.	❒Yes ❒No	
Place battery cables securely inside Greenlee box or ISCO casing.	❒Yes ❒No	
Pull up actuator and tubing and store in Greenlee box or ISCO casing.	❒Yes ❒No	
Avalanche ISCO Sampler Units:		
Disconnect and remove batteries. Transport batteries to MSGP stockroom for maintenance and storage.	❒Yes ❒No	
Place battery cables securely inside Greenlee box or ISCO casing.	❒Yes ❒No	
Pull up actuator and tubing and store inside Greenlee box or ISCO casing.	❒Yes ❒No	
Transport Avalanche sampler to MSGP stockroom for maintenance and storage.	❒Yes ❒No	

Additional Notes:

LANL PERSONNEL USE ONLY (Initials and dates)		
Accepted	Tech QC	ENV-RCRA Review
_____	_____	_____

ATTACHMENT 10 – LANL MSGP ISCO SAMPLER DECOMMISSION FORM 045-6

ENV-QP-045.0

LANL Multi-Sector General Permit
ISCO Sampler Decommission Form

Form 045-6 (3/2011)

Outfall: **3-PSP-5 : E121.9-ISCO 12** Project ID: **P-MSGP-834** Work Order ID: **MSGP-12804**

Target Date: 7/27/2011

Project: MSGP Sampler Station Decommission

Reason: MSGP Sampler Decommission

Date:_____ Time:_____

Name/Z#:_____

Name/Z#:_____

Lead Signature:_____

"I confirm the information as recorded is true, accurate and complete."

Verify the equipment list below. Make corrections as required and fill in missing information (e.g., serial numbers).

Equipment	Manufacturer	Model	Serial No.	Specification	Configuration
Actuator	ISCO	1640		Actuator Height	
ISCO Sampler 12c	Teledyne ISCO	ISCO 3700	198H01553	Bottle Set	12c- 1 1L Poly
ISCO Sampler 12c	Teledyne ISCO	ISCO 3700	198H01553	Program	Time / Multiplex no delay
Pb-Acid Battery				Voltage	> 11.7 V

ISCO Sampler Tasks	Note: If "No" provide correct information or explanation.	
Is equipment list above complete and accurate?	❒Yes ❒No	
Turn sampler "OFF." Remove bottles from carousel.	❒Yes ❒No	
Disconnect and remove battery(ies), solar panel, and cables (as applicable).	❒Yes ❒No	
Pull up actuator and tubing. Disconnect from sampler unit.	❒Yes ❒No	
Uninstall Greenlee box, as applicable.	❒Yes ❒No	
Transport all removed equipment to the MSGP stockroom for maintenance and storage.	❒Yes ❒No	

Additional Notes:

LANL PERSONNEL USE ONLY (Initials and dates)

Accepted	Tech QC	ENV-RCRA Review
_____	_____	_____

ENV-RCRA-QP-047.1	
Effective Date: May 14, 2013	Next Review Date: April 14, 2015

Environment, Safety, Health Directorate

Environmental Protection – Water Quality and RCRA Quality Procedure

Inspecting Storm Water Runoff Samplers and Retrieving Samples for the MSGP

Reviewers:

Name:	Organization:	Signature:	Date:
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Derivative Classifier: ☒ **Unclassified** ☐ **DUSA**_____

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History of Revisions

Document Number *[Include revision number, beginning with Revision 0]*	**Effective Date** *[Document Control Coordinator inserts effective date]*	**Description of Changes** *[List specific changes made since the previous revision]*
0	03/11	New Document.
1	02/13	Annual Review and Revision

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1.0 PURPOSE

This procedure describes the process for inspecting ISCO storm water runoff samplers and retrieving storm water runoff samples from all locations where the Los Alamos National Laboratory (LANL) conducts storm water sampling activities for the Multi-Sector General Permit (MSGP).

2.0 SCOPE

This procedure applies to the ENV-RCRA technical staff and subcontractor personnel conducting activities at single stage stations used for monitoring under the MSGP.

2.1 HAZARD REVIEW

Hazards in the work described in this procedure are controlled thorough site specific IWDs. The hazard level of the activities in this procedure is **moderate**.

3.0 RESPONSIBILITIES

The following personnel require training before implementing this procedure:

- ENV-RCRA technical staff and subcontract or other personnel who inspect storm water samplers and retrieve storm water samples for the MSGP.

The training method for this procedure is "self-study" (reading). For ENV-RCRA staff, this is documented in accordance with ENV-DO-QP-115, *Personnel Training*. Other participating groups may require training documentation pursuant to local procedures.

Actions specified within this procedure, unless proceeded with "should" or "may," are to be considered mandatory (i.e., "shall", "will", "must").

3.1 PREREQUISITES

Personnel performing this procedure will be familiar with the most current versions of the following procedures and operation manuals:

- ENV-RCRA MSGP Sampling and Analysis Plan for the current monitoring year.
- Manual for Teledyne ISCO Sampler model 3700.
- Manual for Teledyne ISCO Avalanche sampler

4.0 DOCUMENT CONTROL/RECORDS MANAGEMENT

The following records are generated as a result of this procedure and are maintained in accordance with ENV-DO-QP-110, *Records Management Program* with the originals on file at ENV-RCRA offices:

- Completed work order for ISCO Sampler Inspection and Sample Retrieval and Collection forms (example in Attachment 2).

5.0 WORK PROCESSES

ISCO samplers are used to collect storm water runoff for Multi-Sector General Permit (MSGP) Program stations. ISCOs are designed to automatically collect water when the water surface is high enough to trigger the actuator and fill the sample bottles. Field personnel are required to inspect the sampling station while retrieving water samples and at other intervals determined by the project or as directed by work orders issued by project personnel.

A LANL Project Leader is the primary person with responsibility for the steps in this procedure. ENV-RCRA personnel will be appointed with responsibility for a subset of sampling stations.

If subsequent rain events occur before all sampler locations have been visited after the first rain event, finish the route to collect the first-event samples (safety permitting).

Inspections may be discontinued during periods or conditions that make sites dangerous for worker safety or prevent personnel from safely accessing sites (e.g., weather-related events such as flash floods, flooding, lightning, wildfires, hail, icy roads, deep snow, and LANL operations such as shots or burns at the OBOD sites).

5.1 EQUIPMENT AND TOOLS

Ensure the following equipment is available in the field vehicle:

- Copy of this procedure
- Copy of the Integrated Work Documents (IWDs)
- Charged spare battery(ies)
- Battery voltage tester
- Spare tubing (pump, suction, discharge types, sampler specific)
- Spare/replacement sample bottles (glass and poly)
- Shovel
- Wooden stakes
- Plastic wire “zip” ties
- Cell phone (only government cell phones with batteries removed are allowed in secure areas)
- Appropriate tools in tool box
- Issued Work Orders and associated forms
- Necessary access and station keys
- Coolers with ice or Blue Ice®
- Expanded Site Field Maps
- Nitrile gloves
- Paper Towels
- Marker pen (permanent, waterproof)
- Ball point pen
- Zip lock bags
- Safety glasses with side shields
- Chain of custody seals
- Sturdy hiking boots or steel toed shoes with soles that grip

5.2 PREPARING FOR FIELDWORK

Once the work orders have been approved, the following steps should be followed to prepare for fieldwork:

Step	Action
1	Receipt of a work order indicates that sampler inspections have been approved by the LANL Project Leader. Schedule work to be completed by the target date appearing on the work order(s).
2	Distribute work order(s) to field personnel. A sample Work Order form is provided in Attachment 1, ISCO Sampler Inspection and Sample Retrieval Form.
3	Inform (e.g., by e-mail) the Field Operations designee, as specified in the IWD, of the schedule for sampler inspection work and locations up to a week (preferred) before but no later than the day before (for minor changes) to be added to the appropriate plan of the day.
4	For work at sites operated by Weapons Facility Operations or Nuclear Environmental Sites, notify the appropriate access control before traveling to those sites. The IWD Part II (2101 Form) addresses specific requirements and training for these sites.
5	Obtain any necessary additional paperwork before conducting this work, including IWD's, and excavation permits (if necessary).
6	Gather the required equipment (see section above) for the work to be done.
7	Set watch(s) to the precise Mountain Standard (not daylight saving) Time. This can be done by logging on to the time page at www.time.gov (or click on the clock icon on the lab's internal home page). When at the site, the clock time on the ISCO sampler needs to be verified. Clocks must be set to Mountain Standard Time at all times, with no daylight saving time adjustment.

5.3 INSPECTING THE SAMPLER

The following table details the inspection requirements for the sampler:

Step	Action
1	If conditions prevent a sampler inspection, document the conditions on the work order and notify the Project Lead or designee within 24 hours. Multiple attempts can be documented on the original inspection work order up to the target date. After the target date, return work order to the ENV-RCRA Storm Water Data Stewards Team for reissuance (if necessary).
2	Item 1: on work order (see example in attachment 2): Enter the date and time inspection and water retrieval is performed and the name(s) and Z number(s) of the field personnel performing the work in the upper right corner of the work order.
3	Item 2: Verify and document the sampler is ON and its condition upon arrival by checking the "Yes" or "No" box. Explain any non-functional status in third column.
4	Item 3: Verify and document the ISCO programming displays by checking the "Yes" or "No" box in second column. • For ISCO 3700 samplers = "Sampler Inhibited"

	OR • For Avalanche samplers = “Program Disabled” If No, repair or describe (e.g., “Done X samples”, or “sampler off”, etc). If more space is needed, continue notes in the “Additional Notes” section at the bottom of the page.
5	Don nitrile gloves and safety glasses.
6	Remove the lid from the sampler.
7	Item 4: If water was collected, check “Yes” and collect the water according to the steps in “Retrieving Storm Water Runoff Samples” below. Note: Complete the required MSGP Visual Assessment form to document the water appearance (foam, sheen, etc.). Ensure this form is submitted to the appropriate MSGP project personnel (see item 11). If No, describe (e.g., “no water collected”, “sampler off”) in the third column; check “No” for Item 4.
8	Item 5: Verify and document the sampler is set to the correct Mountain Standard Time +/- no more than 1 minute by checking the “Yes” or “No” box in the second column. If the sampler is set incorrectly, reprogram for the correct Mountain Standard Time. Describe the work performed and correction applied (e.g., “ISCO clock was X minutes slow”) in the third column.
9	Item 6: Review the Sampling Results report and document any error messages from the sampler display by checking the “Yes” or “No” box. If a message is displayed, record the message in the “Comments” section on page 2 next to the sample bottle being filled when the problem occurred. If there is no indication of flow and the sampler triggered due to a non-flow event (e.g., animal, tumbleweed), indicate this in the third column.
10	Item 7: For the Avalanche sampler equipped with an ISCO 701 pH Module, record the pH measurement taken at the time of Bottle 1 from the Combined Results report.
11	Item 8: For Avalanche samplers only, and if water was collected, check “Yes” and record the refrigerator temperature (°C) upon arrival. If no water was collected, or unable to review temperature, check “No” and describe in column 3 (e.g., no sample, dead battery).
12	Item 9: Verify and document whether sample volumes were retrieved by checking the “Yes” or “No” box. Refer to the volume retrieval instructions on page 2 of work order. Record the volume retrieved in third column.
13	Item 10: If water was collected, perform a visual assessment of the water using the MSGP program visual assessment form (not included in this procedure). Document whether a visual assessment was performed by checking the “Yes” or “No” box.
14	Item 11: Verify and document sample station equipment, model, serial number, actuator height, sampler program, and bottle configuration match the header on the work order page 1 by checking the “Yes” or “No”. If they do not match the data on the work order, ensure you are at the correct location. If the location is verified, check “No” and update inaccurate information.
15	Item 12: Verify and document power supply function. Use the voltage tester to check the voltage of the battery and record the voltage. Check “Yes” or “No” to indicate if battery voltage is acceptable (≥11.7 V for non-floating charged batteries at ISCO 3700 samplers and ≥11.0 for floating-charged batteries at Avalanche samplers as described in ENV-RCRA-QP-045).
16	Item 13: Verify and document the sampler passed the diagnostics test by checking the “Yes” or “No” box. Directions for running the diagnostics test is provided in ENV-RCRA-QP-045)

	If maintenance is necessary and can be performed at the time of inspection, perform the work and describe in third column. If maintenance cannot be completed at the time of inspection, then describe the condition and work needed in the third column.
17	Item 14: Verify and document the sample tubing passed a suction test by checking the "Yes" or "No" box. Check the condition of sample tubing and vent tubing. If maintenance (e.g., clearing the tube, replacing the tube) is necessary and can be performed at the time of inspection, perform the work and describe in third column. If maintenance cannot be completed at the time of inspection, then describe the condition and work needed in third column.
18	Item 15: Verify all cable and electrical connections are attached and secure by checking the "Yes" or "No" box. If maintenance (e.g., tightening connection, replacing cables) is necessary and can be performed at the time of inspection, describe the work performed in the third column. If more space is needed, continue notes in the "Additional Notes" section. If maintenance cannot be completed at the time of inspection, then describe the condition and work needed in the third column.
19	Item 16: Verify and document sampler is ON prior to departing the site by checking the "Yes" or "No" box. If the sampler is not on, document the reason.
20	Item 17: If the sampler tripped and requires reset of the sampling program, reset the actuator by toggling the switch to "Reset" then back to "Latch" • Verify and document the ISCO programming displays the following by checking the "Yes" or "No" box in column 2, page 1. • ISCO 3700 stand-alone samplers = "Sampler Inhibited" OR • Avalanche samplers = "Program Disabled" If an error occurs, reconfigure the sampler (see ENV-RCRA-QP-045 for settings)
21	Item 18: Verify and document any maintenance completed while on site. Describe the work performed or indicate "none completed" in third column. Maintenance items may include (but are not limited to) battery replacement, tubing clearing or replacement, site clearing, securing electrical connections, or sampler diagnostics or repair.
22	Item 19: Verify and document any follow-on maintenance needed that could not be completed while on site. Describe the needed maintenance in the third column. If more space is needed, continue notes in the "Additional Notes" section. A separate work order for the station maintenance will be issued. If no follow-on maintenance is required, indicate "none required" in third column. Maintenance items may include (but are not limited to) battery replacement, tubing clearing or replacement, site clearing, securing electrical connections, or sampler diagnostics or repair.
23	Item 20: If no storm water samples were collected by the sampler, draw a line through page 2 of the work order, initial, and date. If storm water samples were collected by the sampler, skip to "Retrieving storm water runoff

	samples" section.
24	Replace and secure the sampler lid and secure the sampler shelter (if sampler is in a shelter).
25	Review the completed work order(s) for accuracy and completeness and sign and date "Review by Signature" line on page 2 of work order.
26	Item 21: Review the work order(s) for accuracy and certify that the information submitted is "true, accurate, and complete" by signing and dating "Lead Signature" line on page 1.
27	Return completed original work orders to the Project Leader the same day following completion of field work. If original work orders must remain with collected samples, return photocopies of incomplete work orders to the Project Leader the same day field work is completed. Stamp or write "Copy" on the work order returned.

5.4 RETRIEVING SAMPLES

The following steps should be followed when retrieving samples:

Step	Action
1	Don nitrile gloves and safety glasses.
2	See flow chart in Attachment 1. Item 5: Refer to the "Earliest Sample Collect Date" on work order. If the "Earliest Sample Collect Date" field is empty OR the ISCO sample collection date is ON or AFTER that date, samples may be retrieved per the volume requirements given on the work order. Continue with next step below. If the ISCO sample collection date is BEFORE the "Earliest Sample Collect Date": • Indicate "non-qualifying storm event" in Item 5 third column. • Discard the collected sample water on the ground. • Skip to Step 10 below.
3	Remove filled and partially-filled bottles from the carousel.
4	Add up the total volume of water collected and check that the collected volume of water in glass and poly matches the required volume in the header of the work order page 2. The volume of water required to complete a sample set may vary. Retrieval of partial volume is allowed as long as the minimum specified volume is met. For "Partial Volume Retrieval Allowed, Minimum Volume NOT Met" samplers: If sample volume was sufficient, continue with next step 5 below. If sample volume was NOT sufficient: • Record the date and time the ISCO collected water in each glass and poly bottle by the position number in the carousel in Item 21. • Record total volume retrieved as "0" in Item 22. • Pour out all water on the ground. • Skip to step 11 below. For "Partial Volume Retrieval Allowed, Minimum Volume Met" samplers: • Record the date and time the ISCO collected water in each glass and poly bottle by the position number in the carousel on Item 21 of page 2

	• Record the specific ISCO displayed message for each bottle, if present, in the "Comments" column on Item 21. • Record total volume retrieved in Item 22. • Skip to step 11 below.
5	For samples retrieved, place lids onto the sample bottles with storm water.
6	Write the date and time collected, Station Number, and the corresponding carousel number on each retrieved sample bottle. Obtain the sample collection date and time from the ISCO sampler.
7	Item 21: Record the date and time the ISCO collected water in each glass and poly bottle by the position number in the carousel. Record the specific ISCO displayed message for each bottle, if present, in the "Comments" column.
8	Item 22: For "Partial Volume Retrieval Allowed, Minimum Volume NOT Met" samplers, if sample volume was NOT sufficient, record the total volume retrieved as "0" and discard sample water on ground. For "Partial Volume Retrieval Allowed" samplers, record the total volume retrieved.
9	Place retrieved sample bottles in a cooler with blue ice (or equivalent).
10	Return any excess water or collected volume that exceeded the amount required to the ground.
11	Install new sample bottles in the carousel for the next sampling event. The number and type of bottles may vary. Ensure bottles match the configuration specified on page 1 of the work order.
12	Item 23: Document any additional notes or site information in the "Additional Notes" section.
13	Return to steps in "Inspecting the Sampler" above.

5.5 DELIVERING SAMPLES

The following steps should be followed when delivering samples:

Step	Action
1	If samples were collected, deliver the samples, and completed, reviewed, and signed work order to the Storm Water Program Laboratory.
2	Item 25: Relinquish samples to MSGP personnel by signing "Relinquished By" or if self processed, refer to ENV-RCRA-QP-048, Processing MSGP Storm Water Samples.
3	Place samples in the refrigerators in the laboratory within the basement of TA-59-1 and lock the refrigerator to prevent tampering.

6.0 REFERENCES

None

7.0 DEFINITIONS

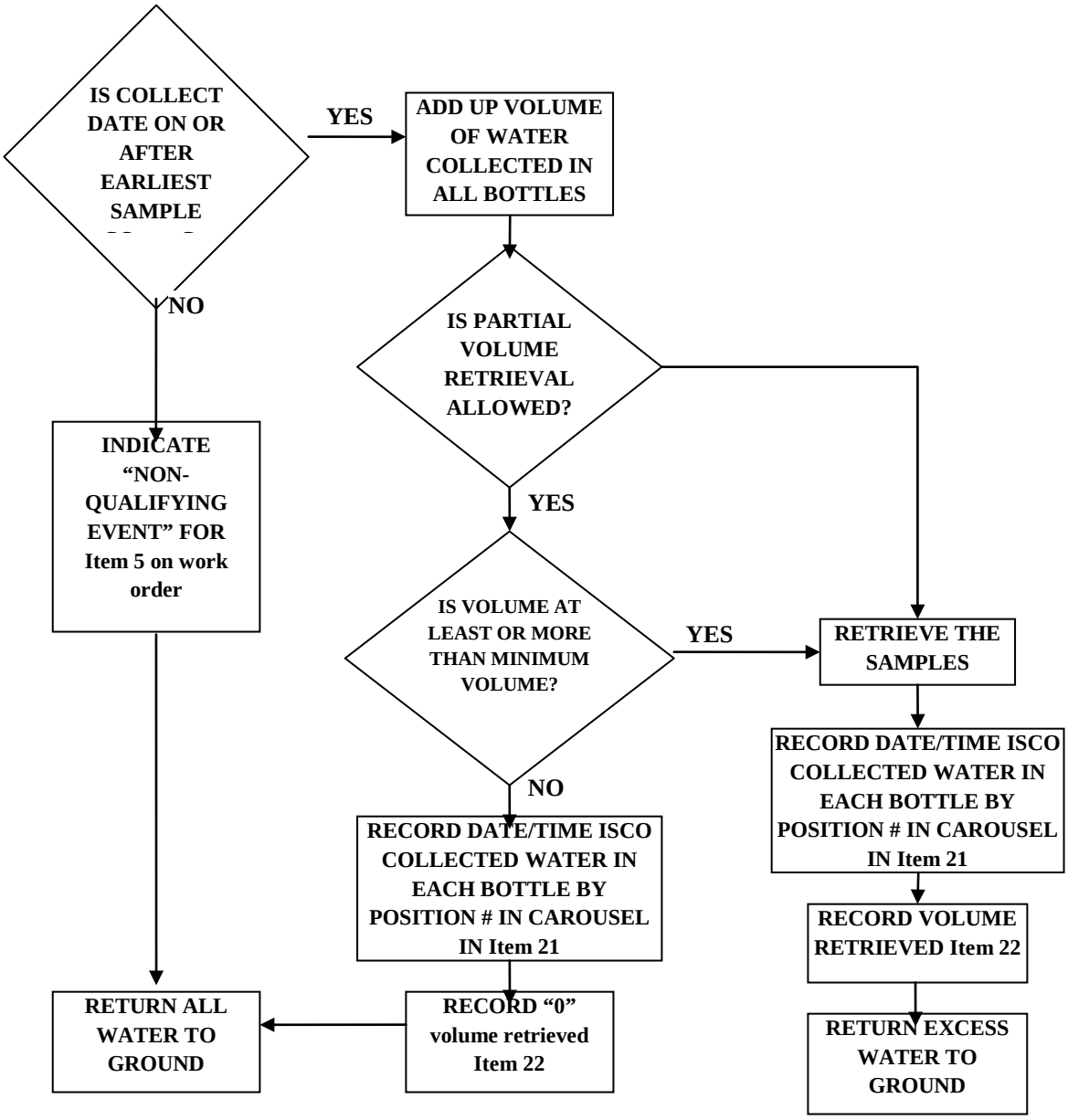
None

8.0 ATTACHMENTS

Attachment 1- Flow Chart for Sample Retrieval

Attachment 2- ISCO Sampler Inspection and Sample Retrieval Form

ATTACHMENT 1- FLOW CHART FOR SAMPLE RETRIEVAL



ATTACHMENT 2- ISCO SAMPLER INSPECTION AND SAMPLE RETRIEVAL FORM

ENV-QP-047.0

LANL Multi-Sector General Permit
ISCO Sampler Inspection and Sample Retrieval Form

Form 047-1 (3/2011)

Outfall: **3-MFS-1 : 03-0038W** Project ID: **P-MSGP-2046** Work Order ID: **MSGP-26090**

Target Date: **9/30/2012**

Project: MSGP Q3 Sampler Inspection & Retrieval

Reason: MSGP ISCO Sampler Inspection - Sample Retrieval

Earliest Sample Collect Date: 8/1/2012

Date:_____ Time:_____

Name/Z#:_____

Name/Z#:_____

Lead Signature:_____

"I confirm the information as recorded is true, accurate and complete."

Equipment	Manufacturer	Model	Serial No.	Specification	Configuration
Actuator	ISCO	1640	210J01655	Actuator Height	2"
ISCO 3700 Sampler	Teledyne	3700	209H01284	Bottle Set	12c- 1 1L Glass, 11 1L Poly
ISCO 3700 Sampler	Teledyne	3700	209H01284	Program	Storm / Multiplex 10 min delay
Pb-Acid Battery	MK Powered	110 A-h	MSGP-110-0310-06	Voltage	> 11.7 V

ISCO Sampler Inspection Tasks		Note: If "No", provide explanation and/or correct information.
ON ARRIVAL		
Is sampler ON and functioning properly upon arrival?	❒ Yes ❒ No	
Does ISCO display either "Sampler Inhibited" or "Program Disabled" ?	❒ Yes ❒ No	
Is ISCO time delta < 1 min (MST)? If NO, record adjustment.	❒ Yes ❒ No	
Is any water collected? If YES, complete Page 2.	❒ Yes ❒ No	
Does the Sampling Results report indicate any error messages(s)? If YES, record error message(s) in the applicable Bottle Comment field on Page 2.	❒ Yes ❒ No	
Is any water collected on or after the "Earliest Sample Collect Date"?	❒ Yes ❒ No	
Was sample volume retrieved?	❒ Yes ❒ No	
Was a Visual Assessment performed? If YES, complete the MSGP Visual Assessment form (ENV-RCRA-QP-064.0 Att. 1).	❒ Yes ❒ No	
ON DEPARTURE		
Is the equipment information listed above, including specifications, correct?	❒ Yes ❒ No	
Are electrical connections secure?	❒ Yes ❒ No	
Record battery voltage(s). Voltage(s) > 11.7 V ?	❒ Yes ❒ No	
Does the ISCO diagnostics test pass?	❒ Yes ❒ No	
Does sample tubing pass suction test?	❒ Yes ❒ No	
Is sampler ON upon departure?	❒ Yes ❒ No	
Has the actuator swtich been reset to "Latch"?	❒ Yes ❒ No	
Does ISCO display either "Sampler Inhibited" or "Program Disabled"?	❒ Yes ❒ No	
If any maintenance completed during inspection, check YES and describe.	❒ Yes ❒ No	
If any follow-on maintenance is required, check YES and describe.	❒ Yes ❒ No	

Page 1 of 2 for MSGP-26090

ENV-QP-047.0

LANL Multi-Sector General Permit
ISCO Sampler Inspection and Sample Retrieval Form

Form 047-1 (3/2011)

Outfall: **3-MFS-1 : 03-0038W** Project ID: **P-MSGP-2046** Work Order ID: **MSGP-26090**

Complete if sample bottles contain water OR to to record ISCO message

Sample Volume Requirements		
Bottle Type: Poly or Glass bottles	**Minimum Volume (L):** 0.5	**Maximum Volume (L):** 1

Bottle #	Bottle Type	Date:	Time (MST):	Comments
1	❒P ❒G	/ /2012		
2	❒P ❒G	/ /2012		
3	❒P ❒G	/ /2012		
4	❒P ❒G	/ /2012		
5	❒P ❒G	/ /2012		
6	❒P ❒G	/ /2012		
7	❒P ❒G	/ /2012		
8	❒P ❒G	/ /2012		
9	❒P ❒G	/ /2012		
10	❒P ❒G	/ /2012		
11	❒P ❒G	/ /2012		
12	❒P ❒G	/ /2012		
13	❒P ❒G	/ /2012		
14	❒P ❒G	/ /2012		

Total Volume Retrieved (liters):	Poly	Glass

Relinquished by Signature	Date:	Time:	Received by Signature	Date:	Time:

Additional Notes:

LANL PERSONNEL USE ONLY (Initials and dates)		
Accepted	Tech QC	ENV-RCRA Review

Page 2 of 2 for MSGP-26090

ENV-CP-QP-048.1	
Effective Date: September 5, 2013	Next Review Date: August 5, 2015

Environment, Safety, Health Directorate

Environmental Protection – Compliance Programs Quality Procedure

Processing MSGP Stormwater Samples

Reviewers:

Name:	Organization:	Signature:	Date:
Melanie Lamb	ADESH-OIO, QA Specialist	Signature on file	8/28/13

Derivative Classifier: ☐ **Unclassified** ☒ **DUSA____ENVPRO_____**

Name:	Organization:	Signature:	Date:
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Approval Signatures:

Subject Matter Expert:	Organization:	Signature:	Date:
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Responsible Line Manager:	Organization:	Signature:	Date:
Michael Saladen	ENV-CP Team Lead	Signature on file	8/29/13
Responsible Line Manager:	Organization:	Signature:	Date:
Anthony Grieggs	ENV-CP Group Leader	Signature on file	9/5/13

CONTROLLED DOCUMENT

This copy is uncontrolled. The controlled copy can be found on the ENV Division Web page.

Users are responsible for ensuring they work to the latest approved version.

History of Revisions

Document Number *[Include revision number, beginning with Revision 0]*	**Effective Date** *[Document Control Coordinator inserts effective date]*	**Description of Changes** *[List specific changes made since the previous revision]*
0	07/11	New Document.
1	09/13	Annual Review and Revision, new format, process change, and new organization name.

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1.0 PURPOSE

This procedure describes the process for preserving stormwater samples for shipment to an offsite analytical laboratory.

2.0 SCOPE

This procedure applies to all LANL personnel and subcontractors who conduct chemical preservation of stormwater samples either in the stormwater Laboratory located in TA-59-1 or out in the field.

2.1 HAZARD REVIEW

The work specified in this procedure is conducted in accordance with the following integrated work documents: IWDs 007, 007a, 007b, 007c, 007d, 007e, 007f, 008, 010, 010b, and 010c. Each IWD is associated with a specific FOD depending on location of sample activity. The hazard level of this procedure is **MODERATE**.

3.0 RESPONSIBILITIES

The following personnel require training before implementing this procedure:

- ENV-CP staff and contract personnel who process Stormwater samples for the MSGP.

The training method for this procedure is "self-study" (reading). For ENV-CP staff, this is documented in accordance with ENV-DO-QP-115, *Personnel Training*. Other participating groups may require training documentation pursuant to local procedures.

Actions specified within this procedure, unless proceeded with "should" or "may," are to be considered mandatory (i.e., "shall", "will", "must").

3.1 PREREQUISITES

In addition to training to this procedure, the following training and data systems access is also required prior to performing this procedure:

- Personnel performing this procedure will be familiar with the most recent version of the ENV-CP MSGP Sampling and Analysis Plan.
- WES-EDA-QP-219, *Sample Control and Field Documentation*
- ENV-RCRA-QP-022, *MSGP Stormwater Corrective Action*

4.0 DOCUMENT CONTROL/RECORDS MANAGEMENT

The following records are generated as a result of this procedure and are maintained in accordance with ENV-DO-QP-110, *Records Management Program* with the originals on file at ENV-CP records room:

- Copy of the Sample Collection Log/Field Chain of Custody Form

5.0 WORK PROCESSES

The Environmental Protection Agency (EPA) issued the National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP) on September 29, 2008. The MSGP requires LANL to monitor stormwater runoff from industrial sites relative to potential pollutants.

Stormwater samples are collected in the field either from refrigerated Avalanche™ or ISCO 3700™ automated samplers. Chemical preservation is conducted in the Stormwater Laboratory (in TA-59-01) immediately following sample collection or in the field.

A LANL Project Leader is the primary person responsible for the steps in this procedure.

The following equipment and tools are required:

- Copy of this procedure
- Copy of Integrated Work Documents (IWDs)
- Copy of the ENV-CP MSGP Sampling and Analysis Plan
- Work Orders (if issued)
- Sample Collection Log/Field Chain of Custody Form (provided by the Sample Management Office (SMO)
- Sample containers
- Sample container labels
- Necessary keys
- Safety glasses with side shields
- Nitrile gloves
- Leather gloves or equivalent work gloves
- Glass and poly bottles appropriate for samples to be collected at the site (reference sampling plan)
- Preservative
- Lids for bottles
- Teflon tubing for intake
- Tygon tubing for exhaust

5.1 PROCESSING SAMPLES

Step	Action
1	Obtain required Sample Collection Log/Field Chain of Custody Form(s) from the SMO. Collect samples and deliver them to the Water Laboratory in coolers containing Blue Ice®.
2	Double check to make sure the Location ID on the Sample Collection Log/Field Chain of Custody Form matches the sample collection station number. If preservation beyond ice is indicated on the form, obtain required preservative and sample containers for identified volume if different from the amount of sample collected. **NOTE:** Specific preservatives and required sample volumes are listed on the Sample Collection Log/Field Chain of Custody Form.
3	Process only one sample set (i.e., samples from one site) at a time. **NOTE:** Sample collection bottles are the bottles used to collect the sample in the field. Sample containers are containers/bottles that the original sample is transferred to after processing. These

	containers are transferred to the Sample Management Office for shipment to the analytical laboratory.
4	Affix appropriate label to sample container.
5	Split up samples into appropriate sample containers.
6	Verify that the sample ID number on the container label matches the sample ID number on the Sample Collection Log/Filed Chain of Custody Form

The following steps should be followed when preserving samples:

Step	Action
1	**IMPORTANT:** Preservation entails the addition of acid or base to a sample. Acids used include hydrochloric acid (HCl), nitric acid (HNO_3), and sulfuric acid (H_2SO_4). Bases used in preservation include sodium hydroxide (NaOH). These are all strong acids and bases that can cause severe burns. Extreme care should be taken when using these acids and bases.
2	Preserve (add acid or base) samples according to the requirements on the Sample Collection Log/Field Chain of Custody Form. **NOTE:** Make sure the pre-measured preservative labeled size matches the sample container size. If you only have one size pre-measured preservative that does not match the sample container size you may need to use more than one. For example, if you have a 1 liter sample container and 500 ml pre-measured preservative vial, you would need to add two preservative vials to the sample container.
3	Mark each container after preservative has been added to designate that the process has taken place.
4	Securely affix lid to sample container. Clean and dry the exterior of sample container, ensure lid is on securely, and check sample container for leakage and breakage.
5	Apply chain-of-custody tape around the mouth and lid of the bottle.
6	Carefully place sample containers in the cooler and package sample containers with Blue Ice®.

5.2 SUBMIT SAMPLES FOR SHIPPING

Submit samples with original Sample Collection Log/Field Chain of Custody Form to SMO for shipping to an offsite analytical laboratory. The person delivering the sample to SMO relinquishes the sample by signing, dating and recording the time under “Relinquished By.” The SMO accepts samples by signing, dating and recording the time under “Received By.” Obtain a signed copy of the Sample Collection Log/Field Chain of Custody Form from the SMO. Make a copy of the Sample Collection Log/Field Chain of Custody Form and provide it to the MSGP Project Leader.

Every attempt will be made to minimize the amount of waste generated. Field personnel will diligently collect only the volumes identified as the minimum or maximum allowable identified on Form. If there is not enough liquid collected to meet these volumes, the Stormwater will be

discharged at the sampler location. Extra Stormwater collected will also be discharged at the sampler location. If waste is generated, contact the Waste Management Coordinator for TA-59-1 or the MSGP Project Leader.

5.3 DATA QUALITY OBJECTIVES

The 2008 MSGP permit requires quarterly and annual Stormwater monitoring to determine if pollutants from industrial activities are migrating into U.S. waters. The permit specifies benchmark parameters that are indicators of potential pollutant sources. In addition, certain impaired water quality standards must be met. Factors which must be considered in making the decision of whether pollutant sources are present or water quality standards have been exceeded are analytical data quality and whether the collected sample is representative of the permitted discharge.

To determine whether the Laboratory is in compliance with all relevant laws and regulations, sample collection and analytical data must be evaluated by the a representatives of ADESH, Operations and Integration Office (OIO) by requesting formal focused validation and/or by the MSGP Project Leader.

Sample collection and submission is conducted under the guidelines found in:

- NPDES Permit Tracking No. NMR05GB21
- 40 CFR Subpart 136 Guidelines establishing the test procedure for the analysis of pollutants.

Sample analysis must use EPA approved methods as set forth in the NPDES permit.

Benchmark levels are identified in the 2008 MSGP. Outfall and sampling locations are identified in the individual facility Stormwater Pollution Prevention Plans (SWPPP).

Monitoring frequencies and reporting requirements are specified in the 2008 MSGP.

Sampling location(s):

Annual, quarterly, and visual assessments shall be conducted in compliance with the monitoring requirements specified in the 2008 MSGP. As specified previously, specific sampling location(s) are identified in the facility specific SWPPP.

Grab Sample:

A minimum of one grab sample from a discharge resulting from a measurable storm event is required. Samples must be collected within the first 30 minutes of a measurable storm event. If that is not possible, the sample must be collected as soon as practicable after the first 30 minutes and documentation must be kept with the SWPPP explaining why it was not possible to take samples within the required time frame. In the case of snowmelt, samples must be taken during a period with a measurable discharge.

NOTE: A grab sample is defined as a single sample collected at a NPDES outfall (using approved EPA methods) at a particular time that represents the composition of the stormwater at that time and place.

Representative Sampling:

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

MSGP Discharge Monitoring Reports and Other Reports (MDMRS):

Monitoring results must be reported on an MDMR form (EPA Form No. 2040-0004) in accordance with the "Instructions for Completing the MSGP Industrial Discharge Monitoring Report" provided on the form. The permittee shall submit the original MDMR signed and certified to EPA as required by Part 7.1 of the MSGP.

Duty to Comply:

The permittee must comply with all conditions of the 2008 MSGP permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action.

5.4 DEVELOP A DECISION RULE

If analytical results from monitoring activities are above benchmark and/or natural background levels, a corrective action is entered into the ENV-CP Corrective Action Report Database, in accordance with ENV-RCRA-QP-022, *MSGP Stormwater Corrective Actions*. An e-mail is automatically generated and sent to personnel responsible for evaluating and modifying controls to prevent further exceedances. Data validation is conducted under the guidelines of the DOE Statement of Work.

Acceptable analytical error is addressed in the DOE Statement of Work.

The current MSGP monitoring program is based on the 2008 MSGP. Activities that could affect the current or next MSGP permit include:

- Addition or removal of constituents into the 303(b) list,
- Discontinued monitoring based on no detection or constituent levels below benchmark or natural background,
- Specific changes identified by EPA within the next permit,
- DOE Statement of Work requirement for analytical laboratories.

6.0 REFERENCES

None

7.0 DEFINITIONS

None

8.0 ATTACHMENTS

Attachment 1- Example Sample Collection Log/Field Chain of Custody Form

Attachment 2- Sample Container Labels

ATTACHMENT 1- SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY FORM

Los Alamos National Laboratory

Page 1 of 1

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 4179 **EVENT NAME:** MSGP - 2013

SAMPLE ID: WTMSGP-13-29841 **WORK ORDER:**

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED (MM/DD/YYYY):		08/12/13	FIELD MATRIX:	WT	OK
TIME COLLECTED (HH:MM):		1334	MEDIA:		
PRS ID:		OK	SAMPLE TECH CODE:	APS	
LOCATION ID:	03-0038W		FIELD PREP:	UF	
LOCATION TYPE:			FIELD QC TYPE:	REG	
TOP DEPTH:			SAMPLE USAGE:	COMP	
BOTTOM DEPTH:			EXCAVATED:		YES / NO / (NA)

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	MSGP-Zn	1 LITER POLY	1	HNO3	Y	

SAMPLE COMMENTS:

Q3

LOCATION COMMENTS:

FIELD PARAMETERS:

COLLECTED BY (PRINT) MARWIN SHENDO

RELINQUISHED BY (Printed Name) Marwin Shendo (Signature) MShe.	**Date/Time** 8/12/13 1:45	**RECEIVED BY** (Printed Name) S. Sherwood (Signature) Sherri Sherwood	**Date/Time** 8/12/13 1345
RELINQUISHED BY (Printed Name) (Signature)	**Date/Time**	**RECEIVED BY** (Printed Name) (Signature)	**Date/Time**

Report Date 08/01/2013

COPY

ATTACHMENT 2- SAMPLE CONTAINER LABELS

AVERY® 5523™ 1-800-GO-AVERY (462-8379) www.avery.com

Los Alamos National Laboratory	
Sample ID: WTMSGP-13-29856	
Container: 1 LITER POLY	1 of 1
Preservative: HNO3	
Analysis: Ag+As+Cd+Mg+Pb+Se+Hg	
Date:	Time:

Los Alamos National Laboratory	
Sample ID: WTMSGP-13-29856	
Container: 0.5 LITER POLY	1 of 1
Preservative: NAOH	
Analysis: MSGP-CN(TOTAL)	
Date:	Time:

Los Alamos National Laboratory	
Sample ID: WTMSGP-13-29856	
Container: 0.5 LITER POLY	1 of 1
Preservative: H2SO4	
Analysis: MSGP-COD	
Date:	Time:

Los Alamos National Laboratory	
Sample ID: WTMSGP-13-29856	
Container: 0.5 LITER POLY	1 of 1
Preservative: H2SO4	
Analysis: MSGP-NH3-N	
Date:	Time:

Los Alamos National Laboratory	
Sample ID: WTMSGP-13-29858	
Container: 1 LITER POLY	1 of 1
Preservative: HNO3	
Analysis: MSGP-GrossA	
Date:	Time:

Los Alamos National Laboratory	
Sample ID: WTMSGP-13-29858	
Container: 1 LITER GLASS	1 of 3
Preservative: ICE	
Analysis: MSGP-PCB(Aroclor)	
Date:	Time:

Los Alamos National Laboratory	
Sample ID: WTMSGP-13-29858	
Container: 1 LITER GLASS	2 of 3
Preservative: ICE	
Analysis: MSGP-PCB(Aroclor)	
Date:	Time:

Los Alamos National Laboratory	
Sample ID: WTMSGP-13-29858	
Container: 1 LITER GLASS	3 of 3
Preservative: ICE	
Analysis: MSGP-PCB(Aroclor)	
Date:	Time:

Los Alamos National Laboratory	
Sample ID: WTMSGP-13-29859	
Container: 1 LITER POLY	1 of 1
Preservative: HNO3	
Analysis: Ag+As+Cd+Mg+Pb+Se+Hg	
Date:	Time:

Los Alamos National Laboratory	
Sample ID: WTMSGP-13-29859	
Container: 0.5 LITER POLY	1 of 1
Preservative: NAOH	
Analysis: MSGP-CN(TOTAL)	
Date:	Time:

Weatherproof Laser Labels Use template for 5163™

MSGP STORM WATER VISUAL INSPECTIONS

Purpose

This procedure is written to provide requirements for conducting visual monitoring under the 2008 National Pollutant Discharge Elimination System (NPDES) Storm Water Multi-Sector General Permit (MSGP) for industrial facilities.

Scope

Requirements set forth in this document apply to Los Alamos National Laboratory industrial facilities covered by the MSGP. These facilities include, a warehouse, several metal fabrication areas/shops, a heavy equipment yard, an asphalt batch plant, roads and grounds, a foundry, a power plant, a material recycling facility and several hazardous waste treatment, storage or disposal (TSD) facilities. Inspection waivers may be granted by ENV-RCRA for adverse weather conditions and unstaffed or inactive sites.

Hazard review

The work described in this procedure is field work and consists solely of visual evaluations, and has been documented to have a **LOW hazard** rating by submittal of a completed *ENV Low Hazard Verification* form to the Quality Assurance Specialist.

Signatures

Prepared by: Signature on File Holly Wheeler, ENV-RCRA	Date: 02/22/12
Approved by: Signature on File Melanie Lamb, ENV Quality Assurance Specialist	Date: 02/14/12
Authorized by: Signature on File Terrill Lemke, ENV-RCRA Team Leader	Date: 02/27/12
Authorized by: Signature on File Anthony Grieggs, ENV-RCRA Group Leader	Date**: 03/06/12
Classification Review by Signature on File Anthony Grieggs, Derivative Classifier	Date: 03/06/12 ☒ Unclassified

** Effective Date

General information about this procedure

In this procedure

This procedure addresses the following major topics:

Topic	Page
General information about this procedure	2
Who requires training to this procedure?	2
Roles and responsibilities	5
Visual examinations	5
Completing the MSGP storm water visual inspection form	6
Guidance	8
Records resulting from this procedure	9

Attachments

This procedure has the following attachments:

Number	Attachment Title	No. of pages
1	MSGP Visual Inspection Form	1
2	Example MSGP Visual Inspection Form	1
3	Facilities and Storm Water Stations Associated With Industrial Activity	1

History of revision & review

This table lists the revision history, reviews, and effective dates of this procedure:

Revision	Date	Description of Changes or Review
0	7/09	New document.
1	3/10	Clarifications and added attachments.
2	2/12	Biennial review/revision.

Who requires training to this procedure?

The following personnel require training before implementing this procedure:

- Group and Project Leader
- MSGP Visual Assessors
- ENV-Deployed Environmental Professional (DEP)
- ENV-RCRA Sampling Team

Training method

Training to this procedure will be by **"self-study" (reading)** and will be documented in accordance with ENV-DO-QP-115 *Personnel Training*.

General information about this procedure, continued

Prerequisites

In addition to training to this procedure, the following training is also required prior to performing this procedure:

- ENV-RCRA-QAPP-MSGP *Multi-Sector General Permit Quality Assurance Project Plan*

Definitions specific to this procedure

Adverse weather conditions: Weather that prohibits collection of samples such as local flooding, high winds, hurricanes, tornadoes, electrical storms, etc. Could also include drought, extended frozen conditions, etc.

Best Management Practices (BMPs): Schedules of activities, practices, prohibitions of practices, structures, vegetation, maintenance procedures, and other management practices to prevent or reduce pollution. BMPs can also include treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Clarity: Clearness or cleanness of appearance. This includes the visual observation of suspended sediment.

Color: Unpolluted water will be clear and colorless. Color should not be confused with clarity.

Floating solids: Particulate material floating on the surface of the water. Examples include: leaves, pinecones, pine needles, dead grass, twigs, branches, and common trash.

Foam: An accumulation of fine frothy bubbles formed in or on the surface of water. A mass of bubbles of air in a matrix of liquid film.

Odor: The property or quality of waters that affects or stimulates the sense of smell. Examples of odors that may be present are burnt oil, sewage, diesel, sulfuric, or detergent odors.

Oil sheen: The presence of rainbow-like colors glistening on the surface of a liquid. The color of oil sheen will vary dependent on thickness and consistency.

Settled solids: Settled particulate material i.e. heavier than water. Examples include sand, gravel, metal turnings, and glass.

Suspended solids: Particulate materials that are floating between the bottom of the sample and the surface of the water.

Unstaffed and Inactive Sites: A facility maintaining certification with the SWPPP that it is inactive and unstaffed and visual examinations are not required.

General information about this procedure, continued

References

- Federal Register: *Final National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Industrial Activities.* Federal Register: September 29, 2008, Volume 73, Number 189.
- P300, *Integrated Work Management for Work Activities*
- P315, *Laboratory Institutional Operations Program*
- PD103, *Worker Safety and Health Policy*
- SD100, *Integrated Safety Management System Description*
- P101-18, *Procedure for Pause/Stop Work*
- PD410, *Los Alamos National Laboratory Environmental ALARA Program P121 Radiation Protection*
- ENV-DO-QP-106, *Document Control*
- ENV-DO-QP-102, *Office Safety and Security*
- ENV-DO-QP-104, *Work Safety Review*
- ENV-DO-QP-115, *Personnel Training*

In addition to these documents, please read any site specific requirements before proceeding with work.

Note

Actions specified within this procedure, unless preceded with “should,” or “may,” are to be considered mandatory (i.e., “shall,” “must,” “will”).

Roles and Responsibilities

Deployed Environ-mental Professionals	Deployed environmental professionals (DEPs) are responsible for collecting quarterly visual samples at substantially identical outfalls and completing required documentation, unless arrangements are made to use ENV-RCRA resources. DEPs will be fully knowledgeable of the site specific SWPPP. Whenever practicable the same person should carry out the inspection and examination of the discharges throughout the life of the permit to ensure consistency in interpretation of results. Further, DEPs shall be familiar with facility operations so that potential pollution discharge sources can be determined.
ENV-RCRA MSGP storm water compliance personnel	MSGP storm water compliance personnel are responsible for filling out a visual assessment form if requested by work order for MSGP monitored outfalls. Storm water compliance personnel are also responsible for evaluating the quality of completed visual assessments, retaining a record of QA'd forms on the server and distributing these forms to the DEPs for inclusion into the appropriate facility SWPPP.

Visual Examinations

Visual examinations	Visual examinations of storm water discharge shall be conducted quarterly for each discharge point covered by the MSGP and the site specific SWPPP.
Grab samples	A grab sample will be collected during daylight hours in a 1 liter wide mouth clear glass bottle or plastic container within 30 minutes of discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample must be collected as soon as practicable after the first 30 minutes. The sampler will document the reason a sample could not be collected within 30 minutes. If no samples are collected because the sampler was not triggered (or for some other reason), documentation shall be kept in the facility's SWPPP explaining why visual examinations were not conducted.

Completing the MSGP Storm Water Visual Inspection Form

Location, date & time, inspector, etc.	Complete the top section of form including location as indicated on site map, date and time, outfall ID (i.e. the monitored outfall), person collecting and examining the sample and signature, and inspection quarter. **NOTE:** See Attachment 2 for an example of a filled-out MSGP Visual Inspection form. **NOTE:** See Attachment 3 for facility name, location, and station numbers. Include the date and time the discharge began, sample collection date and time and visual assessment date and time for each sample. Identify the nature of the discharge (i.e., rainfall or snowmelt). Determine whether it has been greater than 72 hours from the last storm event. If "No", explain when the last storm event occurred.
Sample documentation	Provide documentation if sample is not collected within 30 minutes of discharge.

Completing the MSGP Storm Water Visual Inspection Form, continued

Describe sample parameters

Refer to section 3.0, Definitions. See attachment 2 for an example of a filled-out MSGP Visual Inspection form.

Parameter	Description
Color	Describe the color of the discharge.
Odor	Describe any odors that may be observed in the discharge. Caution: any unusual odors should be documented.
Clarity	Clarity can be described as the depth in which you can look into or through water. For example an individual can see through a clear glass of clean water in daylight. Generally the clarity of the water is a good visual indicator of the purity of water. If the water is poor in clarity there is most likely suspended solids throughout the water.
Floating Solids	Note any floating solids in the sample. Careful examination should determine whether the solids are raw or waste materials (i.e. vegetative materials).
Settled Solids	Note any settled solids in the sample. Settled solids may be an indicator of unstable ground cover combined with a high intensity storm water runoff event.
Suspended Solids	Note any suspended solids in the sample. Most often suspended solids include fine sediment. This may be an indication of an unstable channel that may have eroding banks. Some water appears to be colored because of relatively coarse particulate material in suspension such as sediment.
Foam	Note an accumulation of fine frothy bubbles formed in or on the surface of water. Describe the color of the foam.
Oil Sheen	Note if there is an oil sheen present, the thickness, and consistency. If yes, contact the ENV-RCRA Project Leader for MSGP **immediately**. Follow-up action is required within 24 hours.
Other	Describe any other indicators of storm water pollution in addition to the descriptions mentioned above.

Completing the MSGP Storm Water Visual Inspection Form, continued

ENV Deployed Environ-mental Professional	Place completed and signed form into the facility SWPPP. Provide a copy to the MSGP Project Leader or other designee at ENV-RCRA.
Site observations	Note if there are any potential sources of pollutants on site. If yes, contact an MSGP representative of ENV-RCRA and document the following: • potential sources; • indicate if there are any BMPs on site and evaluate and note effectiveness; • if no BMPs, determine if installation could correct future pollutant migration; and • the nature of discharge (i.e., runoff or snow melt).
Source of pollutants	While conducting the visual examinations, personnel should constantly be attempting to relate any pollutant that is observed in the samples to the sources of pollutants that are on the site.

Guidance

Clean up	A clean up of the site should be conducted if the pollutant source is known and well defined. The FOD, ESH Manager, and MSGP representative of ENV-RCRA should also be contacted and made aware of the situation. A design change could also be incorporated into the storm water pollution prevention plan to eliminate or minimize the contaminant source from occurring in the future. Personnel should evaluate whether or not additional BMPs should be implemented in the pollution prevention plan to address the observed contaminant, and if BMPs have already been implemented, evaluate whether or not these are working correctly or need maintenance. Corrective actions must be taken if BMPs are not performing effectively. Actions should be taken as soon as practicable from the discovery of any pollutants. **NOTE:** This time frame (and those listed below) is not a grace period. Rather, it is a schedule considered reasonable for documenting your findings and for making repairs and improvements. The time frame is to ensure that the conditions prompting the need for these repairs and improvements are not allowed to persist indefinitely. Failure to take prompt action can result in fines and penalties for non-compliance.

Guidance, continued

Corrective action	If storm water contamination is identified through visual assessment, a corrective action must be entered into the ENV-RCRA MSGP Corrective Action Report database within 24 hours of the observation. A corrective action plan must be identified within 14 days of the observation. **NOTE:** If possible, the corrective action must be implemented before the next anticipated storm event.
Follow up	A date for completion of implementation must be entered into the database to ensure that appropriate actions are taken in response to the examinations.

Records resulting from this procedure

Records	The following records generated as a result of this procedure are to be submitted to an MSGP representative of ENV-RCRA in accordance with ENV-DO-QP-110 *Records Management*. • MSGP Quarterly Visual Assessment Form

Click here to record "self-study" training to this procedure.

MSGP Quarterly Visual Assessment Form

Complete a separate form for each outfall you assess. When adverse weather conditions prevent the collection of a sample during the quarter, a substitute sample must be taken during the next qualifying storm event. Maintain this document in your SWPPP).

Name/Location of Facility:	Permit Number: NMR05GB21	Inspection Quarter: ☐Apr-May ☐Jun-Jul ☐Aug-Sep ☐Oct-Nov
Outfall ID:	"Substantially Identical Outfall"? ☐ Yes ☐ No	If YES identify other Outfalls in the Group:
Person(s) collecting sample (PRINT): PPT Member? ☐ Yes ☐ No	Signature :	
Person(s) examining sample (PRINT): PPT Member? ☐ Yes ☐ No	Signature :	
Date & Time Discharge Began:	Date & Time Sample Collected:	Date & Time Sample Examined:
Substitute Sample? ☐ Yes ☐ No	If YES, identify quarter/year when sample was originally scheduled to be collected:	

Was the sample collected in the first 30 minutes? ☐ Yes ☐ No If No, explain why not:

Nature of Discharge: ☐ Rainfall. Amount_____inches ☐ Snowmelt. Amount_____inches

Previous Storm Ended > 72 hours Before Start of This Storm? ☐Yes ☐ No	If No, Explain: *

PARAMETERS

Color	☐ None ☐ Other	If Other describe:
Odor ☐ None ☐ Musty ☐ Sewage ☐ Sulfur ☐ Sour ☐ Solvents ☐Petroleum/Gas ☐ Other		If Other, describe the odor:
Clarity: ☐ Clear ☐ Slightly Cloudy ☐ Cloudy ☐ Opaque ☐ Other (describe):		
Floating Solids: ☐ Yes ☐ No		If YES, describe if raw or waste materials(s):
Settled Solids:** ☐ Yes ☐ No		If YES, are solids Fine ☐ Coarse ☐ If Other describe:
Suspended Solids: ☐ Yes ☐ No		If YES, are solids Fine ☐ Coarse ☐ If Other describe:
Foam (gently shake sample): ☐ Yes☐ No		If YES, on the surface ☐or ☐ in the water. Describe color:
Oil Sheen ☐ Yes ☐ No ☐ Color of Sheen:		Thickness: Flecks ☐ Globs ☐ Describe if other:
Other Obvious Indicators of Pollution Present in the sample? Yes☐ No☐		If YES describe:

SITE OBSERVATIONS

Potential pollutants found during visual examination? ☐ Yes ☐ No If Yes, list pollutant(s)and if possible indicate the source: If source is identified during collection of sample, please notify Tim Zimmerly @ 699-7621 or 664-0105

Pollutant	Source	Pollutant	Source

NOTE: A clean up of the site should be conducted if the pollutant source is known. Was proper Notification made? ☐ Yes ☐ No
If Yes, indicate who was notified:

CORRECTIVE ACTION

If storm water contamination was identified in this sample through visual assessment, was a Corrective Action Form filled out within 24 hrs of observation? Yes☐ No☐ If No, explain why not:

Was a Corrective Action Plan identified within 14 days of the observation? Yes☐ No☐ If No, explain why not:

Other Relevant Information: Yes☐ No☐
Use the back of this form to list any concerns, comments, and/or descriptions of pictures taken, (attach additional sheets as necessary).

* The 72-hour interval can be waived when the previous storm did not yield a measurable discharge or if you are able to document (attach applicable documentation) that less than a 72-hour interval is representative of local storm events during the sampling period.

** Observe for settled solids after allowing the sample to sit for approximately one-half hour.

Example of Filled-Out MSGP Quarterly Visual Assessment Form

MSGP Quarterly Visual Assessment Form

Complete a separate form for each outfall you assess. When adverse weather conditions prevent the collection of a sample during the quarter, a substitute sample must be taken during the next qualifying storm event. Maintain this document in your SWPPP).

Name/Location of Facility: TA-3-66 Sigma Foundry	Permit Number: NMR05GB21	Inspection Quarter: ☒ Jan-Mar ☐ Apr-Jun ☐ Jul-Sep ☐ Oct-Dec
Outfall ID: 3-Sigma-1	"Substantially Identical Outfall"? ☒ Yes ☐ No	If **YES** identify other Outfalls in the Group: 3-Sigma-2, 3-Sigma-3, 3-Sigma-4, 3-Sigma-5, 3-Sigma-6 and 3-Sigma-7
Person(s) collecting sample (PRINT): PPT Member? ☐ Yes ☒ No Joe Doe	Signature : Joe Doe	
Person(s) examining sample (PRINT): PPT Member? ☐ Yes ☒ No Joe Doe	Signature : Joe Doe	
Date & Time Discharge Began: 1/14/2010 at 3:00 P.M.	Date & Time Sample Collected: 1/14/2010 at 3:25 P.M.	Date & Time Sample Examined: 1/14/2010 at 4:30 P.M.
Substitute Sample? ☐ Yes ☒ No	**If YES**, identify quarter/year when sample was originally scheduled to be collected:	

Was the sample collected in the first 30 minutes? ☒ Yes ☐ No If No, explain why not:

Nature of Discharge: ☐ Rainfall. Amount_____inches ☒ Snowmelt. Amount___0.25 inches

Previous Storm Ended > 72 hours Before Start of This Storm? ☒ Yes ☐ No	**If No**, Explain: *

PARAMETERS

Color ☐ None ☒ Other	**If Other** describe: light brown
Odor ☒ None ☐ Musty ☐ Sewage ☐ Sulfur ☐ Sour ☐ Solvents ☐ Petroleum/Gas ☐ Other	**If Other,** describe the odor:
Clarity: ☐ Clear ☒ Slightly Cloudy ☐ Cloudy ☐ Opaque ☐ **Other (describe)**:	
Floating Solids: ☐ Yes ☒ No	**If YES,** describe if raw or waste materials(s):
Settled Solids:** ☐ Yes ☒ No	**If YES,** are solids Fine ☐ Coarse ☐ If Other describe:
Suspended Solids: ☒ Yes ☐ No	**If YES,** are solids Fine ☒ Coarse ☐ If Other describe:
Foam (gently shake sample): ☐ Yes ☒ No	**If YES,** on the surface ☐ or ☐ in the water. Describe color:
Oil Sheen ☐ Yes ☒ No ☐ **Color of Sheen**:	**Thickness**: Flecks ☐ Globs ☐ Describe if other:
Other Obvious Indicators of Pollution Present in the sample? Yes ☐ No ☒	**If YES** describe:

SITE OBSERVATIONS

Potential pollutants found during visual examination? ☐ Yes ☒ No **If Yes,** list pollutant(s)and if possible indicate the source: If source is identified during collection of sample, please notify Tim Zimmerly @ 699-7621 or 664-0105

Pollutant	Source	Pollutant	Source

NOTE: A clean up of the site should be conducted if the pollutant source is known. Was proper Notification made? ☐ Yes ☐ No
If Yes, indicate who was notified:

CORRECTIVE ACTION

If storm water contamination was identified in this sample through visual assessment, was a Corrective Action Form filled out within 24 hrs of observation? Yes ☐ No ☐ **If No**, explain why not:

Was a Corrective Action Plan identified within 14 days of the observation? Yes ☐ No ☐ **If No**, explain why not:

Other Relevant Information: Yes ☐ No ☒
Use the back of this form to list any concerns, comments, and/or descriptions of pictures taken, (attach additional sheets as necessary).

* The 72-hour interval can be waived when the previous storm did not yield a measurable discharge or if you are able to document (attach applicable documentation) that less than a 72-hour interval is representative of local storm events during the sampling period.

** Observe for settled solids after allowing the sample to sit for approximately one-half hour.

Los Alamos National Laboratory
FACILITIES AND STORM WATER STATIONS ASSOCIATED WITH INDUSTRIAL ACTIVITY

2008 MSGP PERMIT #NMR05GB21

LOCATION	OPERATION	Activity	Sector	STATION	DRAINAGE
TA-3-22	POWER PLANT	STEAM ELECTRIC POWER	O	E121.9, 03-0022N, 03-0022S	Sandia
TA-3-38	METAL SHOP	FABRICATED METALS	AA	03-0038W	Sandia
TA-3-39, 102	METAL SHOP	FABRICATED METALS	AA	03-0039E	Pajarito
TA-3-66	SIGMA FOUNDRY	PRIMARY METALS	F	E122.3	Sandia
TA-60	ASPHALT BATCH PLANT	ASPHALT BATCH PLANT	D	E200.5	Mortandad
TA-54	AREA G - South Side	TSD	K	54-PAD10E, E248.5, E248	Pajarito
TA-54	AREA G - North Side	TSD	K	E227	Canada del Buey
TA-54	AREA L	TSD	K	E223	Canada del Buey
TA-54-38	RANT	TSD	K	E220	Canada del Buey
TA-15-185	VEHICLE MAINTENANCE SHOP	VEHICLE MAINTENANCE	P	E262.4	Water
TA-60-1	MOTORPOOL	VEHICLE MAINTENANCE	P	60-0001	Sandia
TA-60	MATERIALS RECYCLING FACILITY	RECYCLING	N	E122.35	Sandia
TA-60-250	ROADS & GROUNDS FACILITY	VEHICLE MAINTENANCE & STORAGE	P	E123.4, 60-00RG, 60-00RGE	Sandia
TA-3-0034	METAL SHOP	FABRICATED METALS	AA	03-0034	Sandia
TA-9-28	HEAVY EQUIPMENT MAINTENANCE OPERATIONS	VEHICLE MAINTENANCE AND STORAGE	P	09-0028W	Upper Pajarito
TA-60-2	WAREHOUSE	WHAREHOUSE	P	60-002E	Sandia

ENV-DO-QP-101.2	
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Environment, Safety, Health Directorate

Environmental Protection – Division Office

Quality Procedure

Title: Environmental Reporting Requirements for Releases or Events

Reviewers:

Name:	Organization: ENV-QPMO, QA Specialist	Signature:	Date:
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Name:	Organization:	Signature:	Date:
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Responsible Line Manager:	Organization:	Signature:	Date:
Alison M. Dorries	ENV-DO, Division Leader	Signature on file	6/12/12

CONTROLLED DOCUMENT

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History of Revisions

Document Number *[Include revision number, beginning with Revision 0]*	**Effective Date** *[Document Control Coordinator inserts effective date]*	**Description of Changes** *[List specific changes made since the previous revision]*
0	02/09	New document
1	4/10	Revision and update
2	6/12	Biennial Review/Revision, new template implemented.

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1.0 PURPOSE

This Environmental Protection Division (ENV-DO) procedure describes how to determine whether an unplanned release, spill, fire, or other event needs to be reported under environmental regulations and how to fulfill all immediate reporting requirements (within the first 24 hours). Emergency and abnormal event notification requirements for reporting to Laboratory and DOE management are specified in PD1200, *Emergency Management*, and P322-3, *Performance Improvement from Abnormal Events*. Environmental reporting requirements regarding releases or other events are included in this procedure.

2.0 SCOPE

This procedure applies to ENV-DO on-call representatives and subject matter experts (SMEs) who must respond to any release, spill, or event at the Laboratory that may require immediate notification to local, state or federal regulatory agencies or Pueblo Environmental Departments (refer to ENV-DO-QP-111, *Reporting Environmental Releases To Pueblo Governments*) and describes the actions that must be performed within the first 24 hours. This procedure does **not** cover the response procedures for "continuous releases" under CERCLA and EPCRA (see definitions) nor the follow-up notifications and reports.

2.1 WORK HAZARD ANALYSIS

The work described in this procedure consists of field work that does not require an Integrated Work Document (IWD) and is rated as having a **LOW hazard** level as documented by submittal of an *ENV Low Hazard Verification* form to the Quality Assurance Specialist.

3.0 RESPONSIBILITIES/PREREQUISTIES

The following personnel require training before implementing this procedure:

- ENV-DO managers and designated on-call representatives and SMEs who may be asked to fulfill reporting requirements during release-related exercises or during actual releases, or within 24 hours.

Annual retraining to this procedure is required. This procedure will be reviewed biennially by all affected personnel and updated as necessary.

Training to this procedure will be by "self-study" (reading) and is documented in accordance with the trainee's organization's procedure for training.

3.1 PREREQUISITES

- None

Note: Actions specified within this procedure, unless preceded with "should," or "may," are to be considered mandatory (i.e., "shall," "must," "will").

4.0 DOCUMENT CONTROL/RECORDS MANAGEMENT

The following records generated as a result of this procedure are to be submitted as records according to the responder's group's internal records management process:

- Field documentation of the release, including:
  - Time and date of the release
  - Time, date, and description of notifications
  - Location and source of the release
  - Type of material released
  - Quantity of material released
  - Impacted media
  - Time release was stopped
  - Any immediate mitigation actions taken to contain or control the release
  - Documentation of any verbal notifications
  - Samples taken
- Copies of any written notifications generated
- Documentation of any analytical results, and quality assurance of results
- Any other contingency plan or emergency plan documentation
- Documentation of any PCB notification
- Documentation of any RCRA permit non-compliance that threatens human health and environment
- Documentation of treatment of any RCRA unstable chemicals, leaking or compromised gas cylinders

5.0 WORK PROCESSES

Events covered by this procedure include detonation or burns of unstable material, leaking or compromised gas cylinders, puncturing of bulging containers, fires, explosions, chemical or radiological spills inside or outside of buildings, wastewater spills, potable water or fire fighting water as well as impacts to cultural and biological resources not adequately documented, and other releases to the environment.

On a semi-annual basis ENV-DO will prepare a list of individuals designated as on-call representatives and will designate the week each will be on-call. This list will be distributed to on-call representatives and Laboratory managers including PADOPS, ADES&H, ADEP, Emergency Operations (ADSS-EO), ENV-DO, ENV-RCRA, and ENV-ES. The on-call representative can be reached by pager at 664-7722.

5.1 RESPONSIBILITY OF ON-CALL REPRESENTATIVE

The ENV on-call representative is the party primarily responsible for:

- determining if the incident will require immediate notification to external agencies in accordance with LANL, State, and Federal regulatory reporting requirements
- notifying ENV Division management of immediate reporting requirements; and

- if needed, coordinating with other on-call SMEs and the Emergency Operations Center (EOC) to ensure the required notifications for environmental reporting and abnormal events are being addressed for the Laboratory.

The ENV-DO on-call representative is not responsible for the following, EOC will make these determinations:

- determining if the RCRA Contingency Plan must be implemented, or
- if a shock-sensitive material or leaking or compromised gas cylinder constitutes an emergency.

However, in order to ensure that the appropriate expertise is available for the affected media, the ENV on-call representative may immediately confer with an SME of the ENV group that has programmatic responsibility. If an SME from the responsible group is able to respond to the event, the remaining steps in this procedure may be passed to that person.

A list of contact numbers for on-call representatives and SMEs for ENV groups (ES & RCRA) is available in the ENV-RCRA group office. The ENV-DO and ADSS-EO may also be contacted to determine the on-call representative for each group.

5.2 FOLLOW-UP REPORTING

This procedure describes the initial external notifications (within the first 24 hours) to regulatory agencies and Pueblo Environmental Departments. After completion of the steps in this procedure, the ENV group specifically responsible for compliance with the relevant regulations (responsible group) will complete the required notifications and reports, as applicable under the appropriate regulations, according to established procedures.

5.3 SUMMARY OF POLICY ON REPORTING

The ENV on-call representative and SMEs have the authority and responsibility for deciding when to report and for making the report to regulatory agencies within regulatory deadlines and to Pueblo Environmental Departments when potentially impacted.

LANL management and DOE LASO must be informed as soon as possible that a report was or will be made, but their approval is not required prior to the report being made to the regulatory agency or Pueblo. LANL management, with input from ENV SMEs, will determine if an ORPS (Occurrence Reporting Processing System) report or other type of Lessons Learned will be necessary.

NOTE: ADSS-EO maintains a current list of on-call LANL managers.

5.4 USING THIS PROCEDURE

This procedure has four separate paths (and corresponding sections) to follow for determining if a release or event is reportable. Follow each of these paths to determine if one or more are applicable:

- RCRA
- TSCA
- CWA, NM WQA, and NM WQCC Regulations
- CERCLA and EPCRA.
- CAA
- Endangered Species Act (ESA), New Mexico Endangered Plant Species Act
- Bald Eagle Protection Act, Migratory Bird Treaty Act
- New Mexico Wildlife Conservation Act
- National Environmental Policy Act (NEPA)
- National Historic Preservation Act (NHPA)
- Native American Graves Protection and Repatriation Act (NAGPRA)
- Archaeological Resources Protection Act (ARPA)

Under CERCLA or EPCRA, a Reportable Quantity (RQ) is the action level that may trigger an appropriate response to a release under the provisions of these regulations. A release may not meet RQ reporting limits **but still may be reportable** under RCRA and CWA requirements.

NOTE: The 24-hour deadline (15 minutes in some cases) applies regardless of whether it occurs during business hours, non-business days or after business hours.

Additional information and guidance on how and when to report a release is available at this link: http://homer.ornl.gov/nuclearsafety/env/guidance/cercla/rqs-gen.pdf.

All potential ENV-DO on-call representatives or SMEs should follow the various links at this site and be familiar with the guidance before any release or event occurs.

5.5 DETERMINING IF A RELEASE IS REPORTABLE UNDER RCRA

Follow the flow charts in Attachment 1 to determine if an event is reportable under RCRA. The three groups of circumstances described below (also delineated in the flow charts in Attachment 1) are evaluated to determine if an event is reportable.

Under the RCRA permit requirements, the ADSS-EO manager determines if the “RCRA Contingency Plan” provisions should be implemented. The flow chart in Attachment 1 starts with this determination. The ENV on-call representative or an ENV-RCRA SME performs notifications that are necessary.

The ADSS-EO Manager will normally attempt to contact the ENV-RCRA SME for guidance in making this decision. If the ENV-RCRA SME is successfully contacted, the completion of the remainder of this procedure may be passed on to this individual.

The ENV on-call representative makes the determination that one or more of these conditions occurred through consultation with ENV-RCRA and appropriate SMEs. 24-hour notification can be made by the on-call representative or by an SME of ENV-DO.

The EOC manager makes the determination that unstable chemicals, leaking or compromised gas cylinders represent an emergency situation and, typically with ENV-RCRA, how best to respond. 24-hour notification can be made by the on-call representative or ENV-RCRA SME.

If a release/event is reportable under RCRA rules, determine if the release/event is reportable under other rules and proceed to the section *Reporting a Release or Event*.

5.6 DETERMINING IF A RELEASE IS REPORTABLE UNDER TSCA

In practice, only spills of Polychlorinated Biphenyls (PCBs) or PCB-suspect untested mineral oil to the environment (generally outdoors or with the potential to reach the outdoors) are reportable. Spills that are contained indoors are generally not reported.

A release of PCB's is reportable to the EPA under TSCA if it is over 10 pounds PCB's by weight or at concentrations of 50 ppm or greater.

Follow the steps in *Determining if a Release is Reportable under CERCLA, EPCRA, or Other Regulations* to determine if the RQ (of 1 pound) for PCBs has been triggered. Additionally, reporting requirements are triggered if over 270 gallons of untested mineral oil suspected of containing PCBs has been spilled.

There are nine items containing PCBs that are in use at the CMR Building. In addition, there is one PCB contaminated transformer in use at TA-48. All other known PCB equipment at the Laboratory has been taken out of service and disposed of in accordance with TSCA regulations.

If a release (see definitions) is reportable under TSCA, continue through the next sections to determine if the release/event is reportable under other rules and proceed to *Reporting a Release or Event* and determine if additional reporting is necessary (below).

If the spill is ...	**Then...**
over 10 pounds by weight of PCBs (TSCA) **OR** if PCBs are at concentrations ~50 ppm that directly contaminate surface water sewers, drinking water supplies, grazing lands, or vegetable gardens	Report to EPA Region 6 (Office of Prevention, Pesticides and Toxic Substances Branch) through EPA's 24-hour spill response number 866-372-7745 as soon as possible after discovery but no later than 24 hours after discovery.

5.7 DETERMINING IF A RELEASE IS REPORTABLE UNDER CWA OR NM WATER QUALITY ACT

The CWA and NM Water Quality Act (NMWQA) (equivalent to the national Clean Water Act) does not use RQs (as described in the next section). Instead the NM Water Quality Control Commission (NMWQCC) regulations state: *"Any amount of any material in such quantity as may with reasonable probability injure or be detrimental to human health, animal or plant life, or property, or may unreasonably interfere with the public welfare or the use of property. This includes chemical, biohazardous, petroleum-product, and sewage spills and incidents. In addition to recent spills, the discovery of evidence of previous unauthorized discharges, such as contaminated soil or ground water, also must be reported."*

The above rule requires the use of professional judgment to determine if reporting is required. No quantifiable metric is available to assist in making this determination, however. The ENV on-call representative or SME has the authority and responsibility to make this determination.

Spills of potable water or fire fighting water (e.g., water line breaks) require reporting if there is a release of over 5000 gallons or if the release impacts a Solid Waste Management Unit (SWMU). Contact the ADEP for the location of SWMUs and coordinate any necessary water quality notifications with ENV-RCRA.

For oil discharges (film/sheen/discoloration) to water in stream channels, additionally notify the National Response Center (24-hour verbal notification) and EPA Region 6.

5.7.1 ADDITIONAL REPORTING REQUIREMENT FOR PETROLEUM STORAGE TANKS

New Mexico Environment Department (NMED) regulations from June 2009 require verbal reporting within 24 hours of release of petroleum products from regulated tanks to the Petroleum Storage Tank (PST) Bureau when there is:

- evidence of release of regulated substances;
- unusual operational conditions (that would cause concern about a release); or
- monitoring results that show loss from the system.

Regulated tanks include those of 1320 gallons to 55,000 gallons and exclude all sizes of tanks used to fuel emergency generators.

This reporting requirement is <u>in addition</u> to the reporting under NMWQCC Regulations and CWA requirements for such releases. Call the PST Bureau at 476-4397 during business hours and 827-9329 after closing.

If there is more than one activity team member, the PIC conducts a readiness check during the tailgate briefing to note any local work conditions that could affect the work and reminds the team of the documented hazards and controls. At this time workers also verify that each other's PPE is adequate.

If a release (see Definitions) is reportable under NMWQCC Regulations, continue through the next sections to determine if the release/event is reportable under other rules and proceed to the Section, *Reporting a Release or Event.*

5.7.2 Additional Reporting Requirements Under NPDES Pesticide General Permit

Adverse incidents, an unusual or unexpected incident that an Operator has observed upon inspection or of which the Operator otherwise becomes aware, requires reporting under the NPDES Pesticide General Permit (PGP).

The Operator should report any adverse incidents in which:

(1) There is evidence that a person or non-target organism has likely been exposed to a pesticide residue, and
(2) The person or non-target organism suffered a toxic or adverse effect. The phrase toxic or adverse effect includes effects that occur within Waters of the United States on non-target plants, fish, or wildlife that are unusual or unexpected (e.g. effects are to organisms not otherwise described on the pesticide product label or otherwise not expected to be present) as a result of exposure to a pesticide residue, and may include:
    - Distressed or dead juvenile and small fishes;
    - Washed up or floating fish;
    - Fish swimming abnormally or erratically;
    - Fish lying lethargically at water surface or in shallow water;
    - Fish that are listless or nonresponsive to disturbance;
    - Stunting, wilting, or desiccation of non-target submerged or emergent aquatic plants; and/or
    - Other dead or visibly distressed non-target aquatic organisms (amphibians, turtles, invertebrates, etc.)

The phrase toxic or adverse effects also includes any adverse effects to humans (e.g. skin rashes) or domesticated animals that occur either from direct contact with or as a secondary effect from a discharge (e.g. sickness from consumption of plants or animals containing pesticides) to Waters of the United States that are temporally and spatially related to exposure to a pesticide residue.

If an Operator observes or otherwise becomes aware of an adverse incident due to pesticide application, the Operator must immediately notify the appropriate EPA Incident Reporting contact within 24 hours of the incident of the Operator becoming aware of the adverse incident. EPA Incident Reporting Contacts are listed at www.epa.gov/npdes/pesticides. These reporting requirements are in addition to any required under Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

5.8 DETERMINING IF A RELEASE IS REPORTABLE UNDER CERCLA OR EPCRA

Under CERCLA or EPCRA, a Reportable Quantity is the action level that may trigger an appropriate response to a release under the provisions of these regulations. RQs are summarized in 40 CFR Part 302. An RQ is based on the quantity of chemical released within any 24-hour period. The RQs for extremely hazardous substances can be found in 40 CFR Part 355, Appendices A and B, in the column labeled "RQ". This table has two columns of RQs: the Statutory RQ and the Final RQ. Use the weight in the Final RQ column for determining if the release must be reported. The chemicals that have not been assigned RQs by EPA have been given statutory RQs of one pound by Congress.

Releases (see definitions) that occur within a closed space with no emissions to the ambient environment (see definitions) are exempt from this requirement.

The exceedance of an RQ requires immediate notification.

NOTE: Response procedures for "Continuous Releases" are not covered in this procedure.

5.8.1 REGULATORY CLASSIFICATION OF THE RELEASED MATERIAL

Determine the regulatory classification of the substance released with respect to the hazard classifications: Extremely Hazardous Substance (EHS) and/or Hazardous Substance (HS) (see definitions).

Often during the course of an emergency, complete information will not be available regarding type and amount of material released. In this case, best professional judgment must be used to establish the level of confidence associated with the estimates. If the uncertainty is high enough that future estimates may require reporting, it is best to err on the side of caution and follow the reporting requirements in the section *Reporting a Release or Event.*

- Identify the constituents in the material released using the Material Safety Data Sheet (MSDS), laboratory analysis, data sheet, manifest, or manufacturer information.
- A summary of the RQs can be found in 40 CFR Part 302 and 40 CFR Part 355, Appendices A and B. The RQ may also be determined using the on-line RQ Calculator (http://homer.ornl.gov/rq/)
- Calculate the amount of the listed chemical involved in the release (the weight of the material released multiplied by the percentage of the concentration of the listed chemical present in the material).

After determining the RQ of a released material, the ENV-DO on-call representative or SME will perform the following steps to determine if an RQ has been released.

Step	Action
1	Obtain an estimate of the quantity and type of material released (e.g. 4 pounds of chlorine gas or 150 curies of tritium).
2	Compare this quantity against the RQs provided in Appendix B to 40 CFR 302 and 40 CFR 355, Appendices A and B.
3	If this is an airborne release of radioactive materials, it is reportable if the RQ is exceeded AND if the release could cause an annual exposure to the nearest downwind residence or business of 10 mrem (40 CFR 61, Subpart H).[1] The exposure estimate should be made by an environmental health physicist. **If the release…** — **Then…** Is over the RQ AND could cause the Laboratory to exceed the 10 mrem/yr standard to downwind businesses or residences — Proceed to section *Reporting a Release or Event.* Is less than the RQ AND could NOT cause the Laboratory to exceed the 10 mrem/yr standard. — No reporting is required under CERCLA or EPCRA. Proceed to Step 4.
4	If this is a release of non-rad material, it is reportable if the RQ is exceeded. **If the amount released is..,** — **Then…** Equal to or greater than the RQ — Proceed to Section *Reporting a Release or Event.* Less than the RQ — Proceed to Step 3
5	Continue to re-evaluate the release as new data becomes available. Perform Steps 1 through 3 as necessary.

[1] It should be noted that "Area sources and other sources that are subject to regulations that limits their total annual emissions should generally report their releases at or above the RQ of hazardous substances (HSs) and extremely hazardous substances (EHSs) that are caused by accidents, malfunctions, unanticipated releases and other releases that are not part of the facility's normal operations." Federal Register, Volume 67, No. 47, Notices FRL-7172-4, Guidance on the CERCLA Section 101(10)H, "Federally Permitted Release Definition for Certain Air Emissions".

5.9 DETERMINING IF A RELEASE IS REPORTABLE UNDER BIOLOGICAL OR CULTURAL REQUIREMENTS

There are a number of laws and regulations related to protection of biological and cultural resources which are applicable to the Laboratory. These laws and regulations include:

- National Environmental Policy Act
- Endangered Species Act
- Bald Eagle Protection Act
- Migratory Bird Treaty Act
- New Mexico Wildlife Conservation Act
- New Mexico Endangered Species Act
- National Historic Preservation Act
- Native American Graves Protection and Repatriation Act
- Archaeological Resources Protection Act

Reporting of impacts to biological resources under the preceding laws and associated regulations is not specifically defined. This is also the case for reporting of most cultural resources impacts under the National Historic Preservation Act. The use of professional judgment by the ENV-DO on-call representative and SME is required.

Reporting of impacts under the Native American Graves Protection and Repatriation Act is specifically governed by the following document "A Standard Operating Procedure for the Inadvertent Discovery of Native American Human Remains and Associated Funerary Objects, Sacred Objects, or Objects of Cultural Patrimony at Los Alamos National Laboratory" (LA-UR-06-6712) prepared for the Department of Energy Los Alamos Site Office (DOE LASO) by the LANL Cultural Resources Team and implemented on January 30, 2008.

Reporting of impacts under the Archaeological Resources Protection Act (ARPA) is governed in part by the Act and also by LANL Cultural Resources Team Procedure ES-415, *Archaeological Resources Protection Act.*

5.9.1 REPORTS TO DOE LASO

In general, any release or event that poses a significant impact to biological or cultural resources requires reporting to DOE LASO as soon as possible and may require reporting to LANL management and DOE HQ through the ORPS. Examples of significant impacts to biological resources include:

- Release of toxic substances into listed species habitat
- Damage to a wetland or listed species habitat by a landscape-altering event such as wildfire
- Other events that would likely result in death or injury of a threatened or endangered species

- Examples of significant impacts to cultural resources include:
- Unauthorized excavation of an archaeological site
- Damage to an archaeological or historic site
- Removal of archaeological or historic artifacts

The ENV on-call representative or SME for biological or cultural resources should notify DOE LASO as soon as possible so that DOE LASO can complete the required notifications to the appropriate agencies (e.g., U.S. Fish and Wildlife Service, State Historic Preservation Office) within 24 hours.

5.10 REPORTING A RELEASE OR EVENT

If a release or event is reportable (as determined by one or more of the previous sections), the Laboratory is required to meet certain reporting requirements. The emergency notification requirements in this section must be followed upon determination that a release or event is reportable.

For informational purposes, a summary of emergency release/event reporting requirements is provided in Attachment 2. This document summarizes the primary statutes and the associated reporting requirements.

Maintain a notebook to record pertinent information about the release and to document the actions taken (see section *Records Resulting from This Procedure*).

If RCRA reporting requirements are triggered, see the flow chart in Attachment 1, Emergency Notification Requirements for RCRA.

Perform the following steps immediately after establishing that reporting will be performed:

Step	Action
1	• Number of persons injured and the nature of injuries (e.g., life-threatening or minor injury) • Extent of any protective actions taken (e.g., evacuations) • Name, address, and telephone number of the person to contact for further information • Whether the substance is an HS or EHS (see definitions) • Associated health risks and medical attention necessary for exposed individuals • If available, information concerning the release of any hazardous and/or mixed waste which may endanger public or private drinking water supplies • Assessment of actual or potential hazards to human health or the environment outside the facility • If available, estimated quantity and disposition of recovered material that resulted from the incident • Precautions to take due to the release/event, including, in the case of fire, those associated with special hazards due to hazardous and/or mixed waste • Any other information which may help emergency personnel responding to the incident.
2	*[For RCRA: skip this step; see flow chart (Attachment 1).]* For releases of substances that are classified as CERCLA hazardous substances, contact the **National Response Center at 800-424-8802**. **Note:** If it is an EHS but not a CERCLA hazardous substance, reporting is only necessary to state and local authorities. **Exception:** For reportable water releases, the NRC needs to be notified ONLY if the release includes oil (such as a sheen on the water surface).

Step	Action
3	*[For RCRA: skip this step; see flow chart (Attachment 1).]* If the release is outside the LANL boundaries, or has the potential to go outside, additionally contact the **New Mexico State Police** at 505-827-9126 (State Emergency Response Commission—SERC). Contact the **Los Alamos County Police** at (505) 662-8222 (Local Emergency Planning Committee—LEPC). Contact the **New Mexico Environment Department**: • During work hours: 505-476-6000 • 24-hr Emergency Hotline: 505-827-9329 DOE O 231.1A Requires notification and reporting through the Facility Operations Director to DOE LASO and DOE HQ given a set of reporting criteria where the timelines from time of event and categorization given the circumstances of the event to verbal and/or written notification is 2-hours. For certain types of environmental events, the reporting criteria are more stringent than what is required in Federal and State laws and requirements (e.g. 50 percent of an RQ is ORPS reportable within the ORPS system). For all environmental events, the ENV On Call individual and/or ENV SME must ensure that the appropriate FOD or designee has been engaged as per P322-3, *Performance Improvement from Abnormal Events*, and this will ensure that ORPS notification and reporting criteria are being met.
4	If requested by any of the above organizations, provide updates as new information becomes available.

Any release to the environment that has been determined to be reportable by the ENV on-call representative or SME shall be reported through the LANL management chain in accordance with PD1200, *Emergency Management* and P322-3, *Performance Improvement from Abnormal Events*. LANL management shall be notified immediately that a release notification to state or federal regulatory agencies is required so that DOE notification and reporting requirements are met. LANL management approval is not required prior to environmental reports and notifications made to the regulatory agencies in order to assure that the deadline for reporting is not exceeded.

5.10.1 Steps to notify LANL Management

To notify LANL management and to complete the environmental reporting process to DOE, state and federal agencies, and Pueblo Environmental Departments, perform the following steps:

Who	Step	Action
ENV-DO on-call representative or SME	**1**	Determine that a release to the environment is reportable to state, federal, or Pueblo entities and required under regulations. **NOTE:** ORPS reporting is a FOD and RAD responsibility and will seek advisement from ENV SMEs.
	2	Contact the following individuals by phone. • Team Leader/Direct Supervisor • Group Leader/Deputy Group Leader • ENV-DO Division Leader or Designee for Reporting If no direct contact can be made, leave messages by pages or phone.
ENV-DO Division Leader or Designee for Reporting	**3**	Notify the ADES&H Directorate Office and assure that the notification process continues through the LANL management chain to the PADOPs Office as specified in PD 1200-1 Emergency Management, and P322-3, *Performance Improvement from Abnormal Events*.
	4	Notify the ADEP Directorate Office if the release originated or impacted a Solid Waste Management Unit (SWMU) or Potential Release Site (PRS).
		As per PD1200, verbal and written notifications must be made up the management chain by use of the PADOPS report. Generally, this is the responsibility of the FOD or the FOD designee. However, ENV on-call personnel may be required to perform this function from time to time. Therefore, on-call personnel must understand who will perform this reporting function.
ENV-DO on-call representative or SME	**5**	Notify the DOE LASO program contact for the release.
	6	Complete the environmental reporting to state and federal agencies prior to the regulatory deadline for reporting.
	7	Notify Pueblo Environmental Departments of the release when potentially impacted.
SME	**8**	Complete 14-day and other follow-up reports to the state and federal agencies.

If the release involved radioactive materials, the ENV on-call representative or SME will notify ENV-ES. ENV-ES will additionally notify:

EPA Region 6

(214) 665-8541

If there is a release of contaminants to a wetland or destruction of a wetland, OR if the event could result in the "take" of a threatened or endangered species (i.e., a wildfire), the ENV on-call representative or SME will notify DOE LASO Environmental Office as soon as possible. DOE LASO is required to notify U.S Fish and Wildlife Service within 24 hours.

After all the above notifications have been made, or when requested, the ENV on-call representative or SME will hand off responsibility for additional actions and follow-up to the affected environmental group. (Which group is responsible will depend on the type and location of the release and the governing regulations or statutes.) Provide all relevant records. See Section: Records Resulting from this Procedure.

In order to communicate events at LANL which may impact the public and or the environment, ENV staff will notify the New Mexico Environment Department of events that may not require formal regulatory notification. Examples of such events in the past have been small wild land fires.

6.0 REFERENCES

The following documents are referenced in this procedure:40 CFR 302, *Designation, Reportable Quantities, and Notification*

- 40 CFR 261, 264 Subpart D 270.30
- DOE guidance document *PCB Spill Response and Notification Requirements* (EH-231-059/1294), available on the ENV-RCRA web page
- DOE – Office of Environmental Guidance, *CERCLA Information Brief*, EH-231-001-0490 (April 1990)
- EPA Web Site: http://www.epa.gov/
- EPCRA Information Web Site: http://www.chemicalspill.org/EPCRA-facilities/spill.html
- Federal Register, Volume 67, No. 47, Notices FRL-7172-4, Guidance on the CERCLA Section 101(10)H, *Federally Permitted Release Definition for Certain Air Emissions*
- PD1200, *Emergency Management*
- P322-3, *Performance Improvement from Abnormal Events*
- LANL RCRA Permit No. NM0890010515-1
- LANL NPDES Permit No. NM00283 National Response Center (NRC) Web Site: http://www.nrc.uscg.mil/
- NMWQCC Regulations, 20.6.2 NMAC, dated December 1, 2001
- P407, *Water Quality*

- QP-5.8, *Identification, Documentation, and Reporting of Newly Discovered Potential Release Sites,* ADEP Procedure.
- RQ Calculator Web Site: http://homer.ornl.gov/rq/

7.0 DEFINITIONS

ADES&H: Associate Directorate for Environment, Safety, and Health

ADEP: Associate Directorate for Environmental Programs

CAA: Clean Air Act

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act

Continuous Release: A release is continuous if it "occurs without interruption or abatement or if it is routine, anticipated, intermittent, and incidental to normal operations or treatment processes." The release must also be "stable in quantity and rate," which means that it must be predictable and regular in the amount and rate of emission. The response procedures for continuous releases are not covered by this document. See guidance in Reporting Continuous Releases of Hazardous and Extremely Hazardous Substances under CERCLA and EPCRA. [DOE/EH-0441, guidance document, 372,099 bytes, 51 pp.], available at: http://homer.ornl.gov/sesa/environment/guidance/cercla/CONTIN.PDF.

CWA: Clean Water Act

ENV-DO: Environmental Protection Division

Environment: includes "water, air, land, and the interrelationship which exists among and between water, air, land, and all living things." (40 CFR 355.20)

EPCRA: Emergency Planning and Community Right-to-Know Act

ER-DO: Emergency Response Division

Extremely Hazardous Substance (EHS): EPCRA establishes emergency reporting requirements for extremely hazardous substances in 40 CFR 355, Appendix A. All of these substances are also CWA and CERCLA "hazardous" substances

FOD: Facility Operations Director

Hazardous Substance (HS): These substances are summarized in 40 CFR Part 302. As used in this context, refers to: (1) any elements, compounds, mixtures, solutions, or substances specially designated by EPA under Section 311 of the Clean Water Act (CWA) (40 CFR 116.4); (2) any toxic pollutants listed under Section 307(a) of the CWA; (3) any hazardous substances regulated under Section 311 (b)(2)(A) of the CWA; (4) any listed or characteristic RCRA hazardous waste (40 CFR 261), (5) any hazardous air pollutants listed under Section 112 of the Clean Air Act (CAA); or (6) any imminently hazardous chemical substances or mixtures regulated under Section 7 of the Toxic Substances Control Act (TSCA)

LEPC: Local Emergency Planning Committee. Locally, the contact is through Los Alamos County Police and Fire Departments

NMWQA: New Mexico Water Quality Act

NMWQCC: New Mexico Water Quality Control Commission

NPDES: National Pollutant Discharge Elimination System

NRC: National Response Center

OSC: On-Scene Commander

PADOPS: Principal Associate Director for Operations

PCBs: Polychlorinated Biphenyls

PST: Petroleum Storage Tank

RCRA: Resource Conservation and Recovery Act

Release: Any unpermitted spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing of contaminants into the environment, excluding: (1) emissions from the engine exhaust of any vehicle, (2) certain releases of source, byproduct, or special nuclear material from a nuclear incident, or (3) normal application of fertilizer

RQ: Reportable quantity

SARA: Superfund Amendments and Reauthorization Act

SERC: State Emergency Response Commission. In NM, the contact is through the NM Department of Public Safety.

SME: Subject Matter Expert.

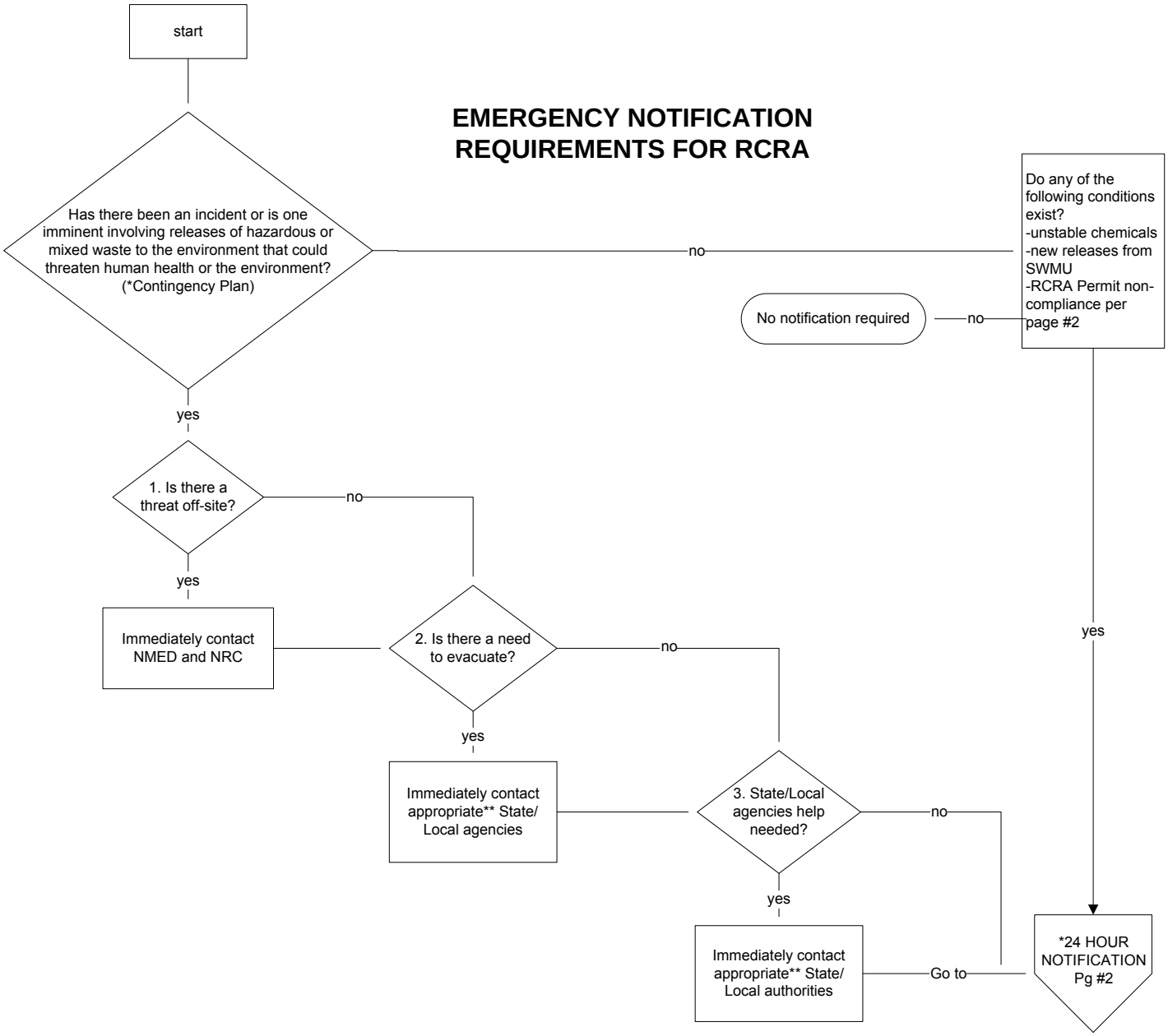
TSCA: Toxic Substances Control Act

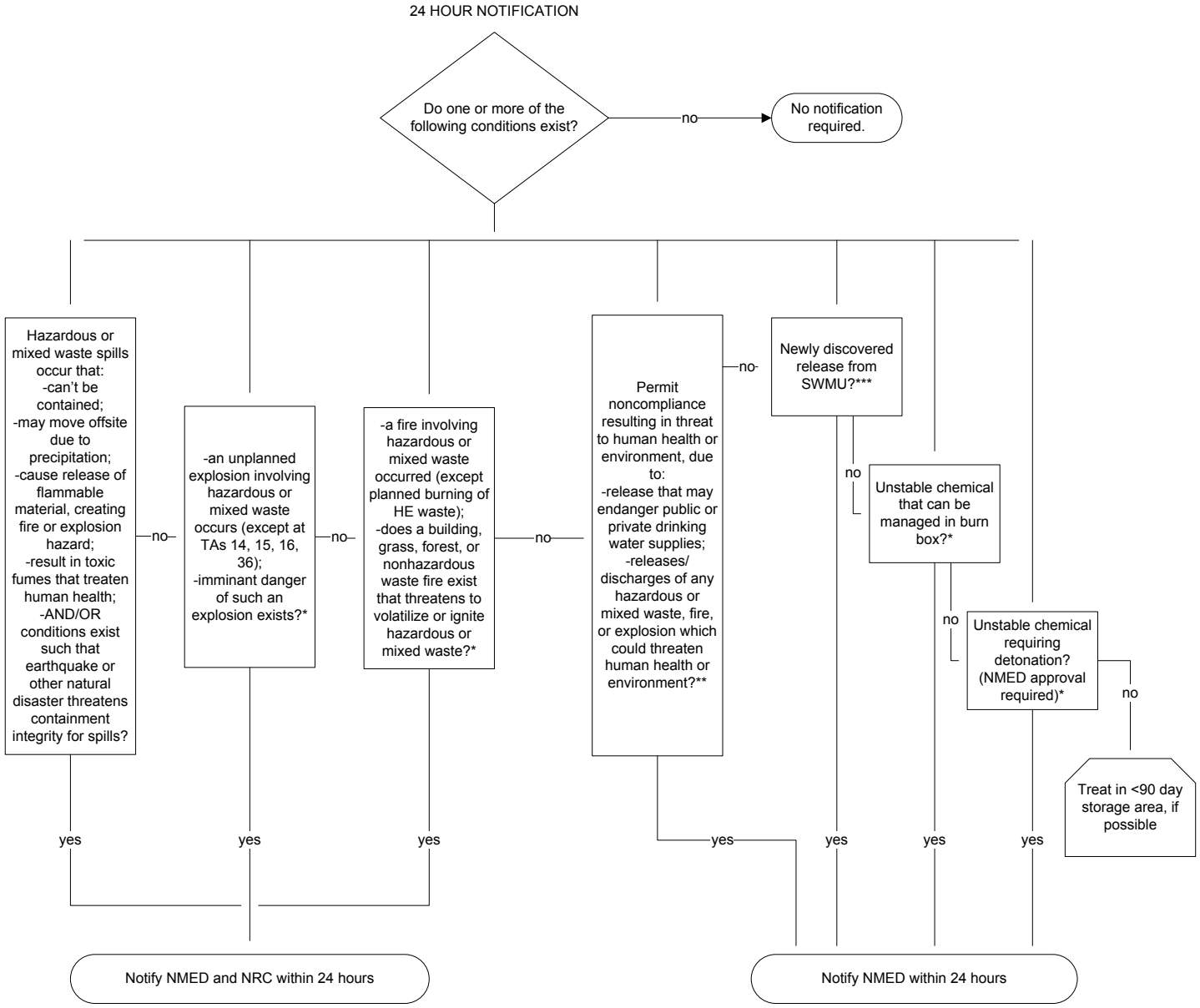
8.0 ATTACHMENTS

Attachment 1: Emergency Notification Requirements for RCRA

Attachment 2: Summary of Emergency Release or Event Reporting Requirements

ATTACHMENT 1: EMERGENCY NOTIFICATION REQUIREMENTS FOR RCRA





*Contingency Plan implementation, need for burn box use, or for detonation to be determined by EM&R
**To be determined by ENV-RCRA
***To be determined by WES-WA and ENV-RCRA

ATTACHMENT 2: SUMMARY OF EMERGENCY RELEASE OR EVENT REPORTING REQUIREMENTS

NOTE: This is only a guide and does not cover all federal, state, or permit reporting requirements. Refer to the Code of Federal Regulations and the RCRA Permit for more details regarding these regulations.

STATUTE	REGULATIONS	INCIDENT	REPORT TO/BY	REPORTING
Clean Water Act(CWA)	40 CFR 110.6	Oil discharge (film/sheen/discoloration) to water surface or shoreline, or violation of water quality standards.	NRC. If not practical then EPA by person in charge of facility.	Immediately, no later than 24 hours. Follow-up not required.
Clean Water Act (CWA)	40 CFR 117.21	Discharge of hazardous substance (equal to or above RQ)	Appropriate govt. agencies by person in charge of facility.	Immediately Follow-up not required.
Clean Water Act (CWA)	40 CFR 122.28	Adverse incident which includes evidence that a person or non-target organism has been exposed to a pesticide residue or the person or non-target organism suffered a toxic or adverse effect.	Report to EPA within 24 hrs.	30 Day Adverse Incident Written Report for PGP required.
New Mexico Water Quality Control Commission Regulations (NMWQCC Regulations)	20.6.2.1203 NMAC	Discharge from any facility of oil or other water contaminant, in such quantity as may with reasonable probability injure or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or use of the property.	New Mexico Environment Department by ENV-RCRA. Copy to EPA.	As soon as possible after learning of such a discharge, but in no event more than 24 hours thereafter (verbal notification). 7 day written report (Calendar Days) 15 day written Corrective Action Plan.
Comprehensive Environmental, Response, Compensation, and Liability Act (CERCLA)	40 CFR 302.6(a)	Hazardous substance release (Equal to or greater than RQ).	Report to NRC by ENV or WES SME	Within fifteen minutes Follow-up not required
Emergency Planning and Community Right- to-Know Act (EPCRA)	40 CFR 355.40	Release of SARA extremely hazardous substance or CERCLA hazardous substance equal to or greater than RQ.	LEPC, SERC, or local emergency response personnel (911 in case of transportation related release) by owner/operator.	Within fifteen minutes Follow-up required within seven calendar days.

STATUTE	REGULATIONS	INCIDENT	REPORT TO/BY	REPORTING
Resource Conservation and Recovery Act (RCRA)	40 CFR 262.34, 263.30, 264.51, 264.56 & .196, 265.51, .56 & .196, 270.14, & .30, 273.17, .37 & .54, 279.43 & .53, 280.50, .52, .53, .60,	Release, fire, or facility explosion that threatens human health or environment.	NRC/OS C/state/ local /EPA Regional Administrator by ENV-DO or ENV-RCRA SME.	Immediate and/or within 24 hours (see flow chart) Follow-up: varies from 5 to 30 days report to OSC/NRC/EPA Regional Administrator.
Toxic Substance Control Act (TSCA)	40 CFR 761.120, 761.125	PCB spill (equal to or greater than 50 ppm) with release to surface water/drinking water supplies/sewers/ grazing lands, etc. OR PCB spill over 10 pounds	NRC and EPA Region 6 Office of Pesticides and Toxic Substances by person in charge.	Within 24 hours Follow-up: as required by agency.
Operational events to include environmental releases and reporting	DOE Order 231.1A	As per criteria within DOE Order 231.1A. Examples include 50 percent of an RQ	DOE LASO and DOE HQ by FOD through ESH-OFF	Verbal notifications in 2 hours after categorization and written notifications within from 2 hours to NLT 2 business days depending on the severity and DOE criteria
N/A	N/A	Incidents which may be of concern to the public, such as wild land fires, activities which may have a visual impact that concerns the public, etc.	NMED	As soon as possible

2015 MSGP Sampling and Analysis Plan

ANYL_METH_CODE	EPA:200.7 EPA:200.8 EPA 254.2	EPA:200.7 EPA:200.8 EPA 245.2	EPA:200.8	EPA:200.8	EPA:200.8	EPA:200.8	SM:2540D	EPA:335.4	EPA:410.4	EPA:350.1	EPA:608	EPA:1664A	EPA:900	FIELD	
ORDER CODE	MSGP Ag+As+Cd +Mg+Pb+Se+Hg	MSGP Al+Cu+Hg	MSGP-Tl	MSGP-Cu	MSGP-Al	MSGP-Zn	MSGP-TSS	MSGP- CN(TOTAL)	MSGP-COD	MSGP-NH3-N	MSGP-PCBs(Aroclor)	MSGP-Oil-Grease	MSGP-GrossA	pH	VA
FIELD_PREP_CODE	UF	UF	F	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF
PRESERVATION	HNO3	HNO3	HNO3	HNO3	HNO3	HNO3	ICE	NAOH and ICE	H2SO4 & ICE	H2SO4 & ICE	ICE	HCL or H2SO4	HNO3		
HOLDING TIME	28	180	180	180	180	180	7	14	28	28	365	28	180	15 min	
PRIORITY	1	1	1	1	1	1	1	1	1	1	2	2	3		
VOLUME REQUIRED (L)	1	1	1	1	1	1	0.5	0.5	0.5	0.5	3	3	1		1
SHIPPING CONTAINER	POLY	POLY	POLY	POLY	POLY	POLY	POLY	POLY	POLY	POLY	GLASS	GLASS	POLY	POLY	

ISCO 3700
VA only
AVALANCHE

Permitted Facility	Outfall	Station Number	Samples	Required Volume (L) STD - POLY	STD - GLASS	REF-POLY	REF - GLASS	BOTTLE SET	Station Number	Samples
TA-3-22 Power & Steam Plant	3-PSP-1	03-0022S	Annual		1			1L G, 11 L Poly	03-0022S	1,2,3,4
	3-PSP-5	E121.9	Annual		1			1L G, 11 L Poly	E121.9	1,2,3,4
	3-PSP-8	03-0022N	Annual		1			1L G, 11 L Poly	03-0022N	1,2,3,4
TA-3-38 Metals Fab Shop	3-MFS-1	03-0038W	Annual		1	1		1L G, 11 L Poly	03-0038W	1,2,3,4
TA-3-39 & 102 Metal Shop	3-TS-1	03-0039E	1,2,3,4		1			1L G, 11 L Poly	03-0039E	1,2,3,4
TA-3-66 Sigma Complex	3-SIGMA-6	E122.3	Annual		1			1L G, 11 L Poly	E122.3	1,2,3,4
	3-SIGMA-8	03-0141E	Annual		1			1L G, 11 L Poly	03-0141E	1,2,3,4
TA-60 Asphalt Batch Plant	60-ABP-1	E200.5	1*				6.5	4 2 L Glass	E200.5	1,2,3,4
TA-60-1 Heavy Equipment Yard	60-HEY-2	60-0001	Annual		1			1L G, 11 L Poly	60-0001	1,2,3,4
TA-60 MRF	60-MRF-1	E122.35	Annual		1			1L G, 11 L Poly	E122.35	1
	60-MRF-1	E122.35	1,2,3,4		1			14 1L Poly	E122.35	1,2,3,4
TA-60 Roads and Grounds	60-RG-1	60-00RG	Annual				3	4 2 L Glass	60-00RG	1,2,3,4
	60-RG-3	E123.4	Annual		1			1L G, 11 L Poly	E123.4	1,2,3,4
	60-RG-8	60-00RGE	Annual		1			1L G, 11 L Poly	60-00RGE	1,2,3,4
	60-RG-10	60-RGCFYE	Annual		1			1L G, 11 L Poly	60-RGCFYE	1,2,3,4
	60-RG-13	60-RGCFYW	Annual				4	4 2 L Glass	60-RGCFYW	1,2,3,4
	60-RG-13	60-RGCFYW	Annual		1	2		1L G, 11 L Poly	60-RGCFYW	1
TA-60-2 Warehouse	60-WH-1	60-0002E	Annual		1			1L G, 11 L Poly	60-0002E	1,2,3,4
TA-54 Area G	54-G-1	E248	1,2,3,4		1			14 1L Poly	E248	1,2,3,4
	54-G-2	E227	1,2,3,4			0.5		4 2 L Glass	E227	1, 2,3,4
	54-G-3	E248.5	1,2,3,4		1			1L G, 11 L Poly	E248.5	1,2,3,4
	54-G-4	54-PAD10E	1,2,3,4			0.5		14 1L Poly	54-PAD10E	1,2,3,4
TA-54 Area L	54-L-1	E223	1,2,3,4		1			1L G, 11 L Poly	E223	1,2,3,4
TA-54 RANT	54-RANT-1	E220	1,2,3,4		1			1L G, 11 L Poly	E220	1,2,3,4
TA-9-28 Heavy Equip Maint	9-HEM-1	09-0028W	1,2,3,4		1			1L G, 11 L Poly	09-0028W	1,2,3,4
TA-54 Maintenance Facility West	54-MFW-1	54-00MFW	Annual				5	4 2 L Glass	54-00MFW	1,2,3,4

*In case of Effluent Limitations Guideline (ELG) exceedance, monitoring must continue.

Los Alamos
NATIONAL LABORATORY
EST 1943

Environmental Protection Division
Environmental Compliance Programs (ENV-CP)
PO Box 1663, K490
Los Alamos, New Mexico 87545
(505) 667-0666

Date: OCT 2 9 2015
Symbol: ENV-DO-15-0309
LA-UR: 15-28383
Locates Action No.: N/A

Mr. Brent Larsen
Water Quality Protection Division (6WQ)
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Dear Mr. Larsen:

Subject: **National Pollutant Discharge Elimination System (NPDES) Permit Tracking No. NMR053195, Multi-Sector General Permit (MSGP) Notice of Intent (NOI) Reporting Pursuant to Part B.12.H.**

In submitting a NOI for coverage under the new NPDES Multi-Sector General Permit, Los Alamos National Security (LANS) experienced significant problems with EPA's NeT NPDES eReporting Tool which resulted in certification of the NOI on September 3 and initial submission of a NOI with incomplete outfall attribute data and incorrect information. During this time LANS staff contacted EPA's NOI Processing Center for support and was given the recommendation to contact Region 6 personnel for further guidance. Per this direction, on September 1, 2015, Terrill Lemke left you a voicemail summarizing the issues and potential impacts of the difficulties experienced with the new electronic reporting system. For additional clarification, the following is a summary of the timeline of events associated with the NOI submission.

- Monday, August 31, 2015
  - Initiated NOI submission using the NeT NPDES eReporting Tool.

- As data was entered into each data field on the NOI form, the Tool was very slow in processing the data and allowing entry into the next field. This created a significant waiting time.
- Upon reaching the fields on the NOI form where outfall attribute data was entered the Tool began to randomly crash, repeatedly deleting all unsaved data.

- Tuesday, September 1, 2015
  - Tool continued to be very slow and randomly crash, repeatedly deleting all unsaved data.
  - For each outfall, when listing the constituents associated with impaired waters, the Tool's auto population feature initially displayed incorrect data which required additional editing and then eventually stopped functioning and caused the Tool to crash.
  - Much of the outfall attribute data had to be reentered multiple times before it was possible to successfully save it to the system.
  - After each save or Tool crash the eReporting Tool would close the NOI form. The time required for the Tool to repeatedly reopen the form made data entry very time consuming.
  - LANS staff contacted the EPA NOI Processing Center on the afternoon of Sept 1 for technical support:
    - NOI Processing Center staff stated that they had been "flooded" with calls over the past week on Tool problems.
    - LANS staff expressed their concern about the length of time being required to enter data and the potential inability to complete the NOI form by the Sept 2 deadline. No solution was available.
    - LANS staff explained the difficulty with entering outfall information for 73 outfalls and NOI Processing Center staff stated that they had received numerous calls on problems with entering outfall data and that some permittees couldn't even enter 20 outfalls.
    - NOI Processing Center staff recommended contacting Regional personnel to notify them of the situation and to seek additional guidance.
  - The eReporting Tool went down at approximately 3:30 pm MDT and remained down until after 9 pm MDT. This eliminated the opportunity to input data during normal business hours.

- Wednesday, September 2, 2015
  - Continued decrease in the performance of the eReporting Tool.
    - Increase in the time for the Tool to process information after entry of each item of data.
    - Increased frequency in the Tool crashing.
    - For each outfall, when listing the constituents associated with impaired waters, the form had to be saved after entry of each individual constituent. Entry of more than one constituent without saving would cause the Tool to crash.

- With the decreased performance of the eReporting Tool LANS staff contacted the EPA NOI Processing Center for direction and Processing Center staff stated the following:
  - They were aware of the problems with the Tool but could provide no solutions or technical direction.
  - They had been reporting daily to EPA on the problems and EPA was definitely aware of the issues.
  - When asked about taking the Tool down at 3:30 MDT on Sept. 1, staff stated that they thought the programmers may have taken the system down to assess the problems.
  - Stated again that they had received many calls about technical issues with the Tool.
  - The more data that was entered the slower the Tool would get.
  - When asked again about the possibility that LANS may not be able to get all information into the NOI, staff stated that LANS would be able to access the submitted NOI to modify/add data after the 30 day waiting period.
- eReporting Tool went down again at 3:30 pm MDT and did not come back up until after 10 pm MDT, again eliminating the opportunity to input data during normal business hours.
- The LANS NOI with all information except some remaining outfall attribute data was submitted by the Preparer at 10:50 pm MDT.
  - The LANS NOI certification signatory was prepared to certify the NOI at this time but didn't get notification that the NOI was ready for certification until 9:37 am MDT on Sept. 3, almost 11 hours later.
  - The NOI was certified on Sept 3, 2015.

Additionally, the NeT NPDES eReporting Tool did not provide dissolved Thallium as a constituent option, but only allowed the selection of total Thallium as an impaired water pollutant under a "Cause Group" when "Metals (other than Mercury)" was selected from the drop down menu. This resulted in LANS having to enter total Thallium as an impaired water pollutant in error for the following outfalls: 002, 005, 006, 007, 008, 009, 010, 011, 012, 016, 017, 018, 019, and 020. LANS appreciates any assistance you may have relative to the total Thallium vs. dissolved Thallium issue. During a subsequent quality assurance evaluation, LANS staff also determined that total Copper was erroneously entered as an impaired water pollutant for outfall 051 and needs to be deleted from the NOI.

LANS is committed to maintaining compliance with the MSGP requirements. Per Section B.12.H of the MSGP, the LANS NOI will be modified to include the remaining outfall attribute data that could not be included on the initial submission and to delete Copper as an impaired water pollutant for outfall 051. LANS coverage under the 2015 MSGP became effective on October 3, 2015, and with the NOI now accessible, actions to update the NOI have been initiated.

Any additional direction or guidance you may have would be appreciated. Please contact Terrill W. Lemke at (505) 665-2397 of the Environmental Compliance Programs (ENV-CP) if you have any questions.

Sincerely,

Anthony R. Grieggs
Group Leader
Environmental Compliance Programs (ENV-CP)
Los Alamos National Security, LLC

ARG:MTS:TWL:HLW/lm

Cy: Nasim Jahan, USEPA/Region 6, Dallas, TX, (E-File)
Bruce Yurdin, NMED/SWQB, Santa Fe, NM, (E-File)
Gene E. Turner, LASO-NS-LP, (E-File)
Jordan Arnswald, LASO-NS-PI, (E-File)
Kirsten Laskey, EM-LA, (E-File)
Craig Leasure, PADOPS, (E-File)
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Michael T. Brandt, ADESH, (E-File)
Raeanna Sharp-Geiger, ADESH, (E-File)
Alison M. Dorries, ENV-DO, (E-File)
Michael T. Saladen, ENV-CP, (E-File)
Terrill W. Lemke, ENV-CP, (E-File)
Holly L. Wheeler, ENV-CP, (E-File)
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lasomailbox@nnsa.doe.gov, (E-File)
locatesteam@lanl.gov, (E-File)
env-correspondence@lanl.gov

From:	Lemke, Terrill W
To:	Wheeler, Holly Lynn; Griegos, Tony
Subject:	FW: EPA Multi-Sector General Permit (MSGP) Authorization is Active – Los Alamos National Laboratory, NPDES ID: NMR053195, NeT Submission ID: MSGP-3095
Date:	Monday, October 05, 2015 8:22:15 AM
Attachments:	AcceptedNewNOIReceipt.pdf

Terrill Lemke, PE, CPESC, CISEC
Environmental Compliance Programs
Los Alamos National Laboratory
Los Alamos, NM
Office: 505-665-2397
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From: NeT@epa.gov [mailto:NeT@epa.gov]
Sent: Saturday, October 03, 2015 5:48 PM
To: Dorries, Alison Marie
Cc: Lemke, Terrill W; lee.won@epa.gov; lescure.nasrin@epa.gov; emily@avanticorporation.com; farris.erika@epa.gov; Christiane@avanticorporation.com; bius.catherine@epa.gov
Subject: EPA Multi-Sector General Permit (MSGP) Authorization is Active – Los Alamos National Laboratory, NPDES ID: NMR053195, NeT Submission ID: MSGP-3095

2015-10-03

Your Notice of Intent (NOI) requesting coverage for Los Alamos National Laboratory, PO Box 1663 MS K490 Los Alamos NM 87545 under EPA's Multi-Sector General Permit (MSGP) has been accepted and authorization to discharge under the MSGP became effective at the conclusion of your 30-day waiting period, on 2015-10-03.

For tracking purposes, the following NPDES ID has been assigned to your NOI: NMR053195. Attached to this email, you will find a copy of your completed NOI form. To access your NOI in NeT, please visit: https://cdx.epa.gov/epa_home.asp.

As you know, the MSGP requires you to have developed a Stormwater Pollution Prevention Plan (SWPPP) prior to submitting your NOI. The MSGP also includes specific requirements for implementing control measures (e.g., minimize exposure, good housekeeping, maintenance, spill prevention and response), conducting self-inspections and visual assessments of your discharges, taking corrective actions, and conducting staff training. You must comply with any specific requirements applicable to your industrial sector(s) in Part 8 and any state/tribal-specific requirements in Part 9 (see http://water.epa.gov/polwaste/npdes/stormwater/EPA-Multi-Sector-General-Permit-MSGP.cfm). You are also required to submit an Annual Report in accordance with Part 7.5 of the MSGP that will contain the results from your past year's routine facility inspections, quarterly visual assessments, and corrective actions. Annual Reports must be submitted to EPA through NeT.

The MSGP includes five types of required analytical monitoring, one or more of which may apply to your discharge:

- Quarterly benchmark monitoring (see Part 6.2.1 and Part 8);
- Annual effluent limitations guidelines monitoring (see Part 6.2.2 and Part 8);
- State- or tribal-specific monitoring (see Part 6.2.3 and Part 9);
- Impaired waters monitoring (see Part 6.2.4); and
- Other monitoring as required by EPA (see Part 6.2.5).

Monitoring requirements in the MSGP (i.e., parameters required to be monitored and sample frequency) will be prepopulated on your electronic Discharge Monitoring Report (DMR) in EPA's NetDMR system, which is accessed at http://www.epa.gov/netdmr/. Where you have determined that no monitoring requirements apply to your discharge, there is no need to access the NetDMR system. In order to obtain access to this system, you must complete the electronic signature process. Please refer to the following guidance for information about submitting monitoring reports through NetDMR: http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-eNOI-System-for-EPAs-MultiSector-General-Permit.cfm.

Please note that this email does not represent a determination by EPA regarding the validity of the information you provided in your NOI. Your eligibility for coverage under this permit is based on the validity of the certification you provided. Your electronic signature on the NOI form certifies that you have read, understood, and are implementing all of the applicable requirements. An important aspect of this certification requires that you have correctly determined whether you are eligible for coverage under this permit.

The 2014 MSGP and additional guidance are available at: http://water.epa.gov/polwaste/npdes/stormwater/EPA-Multi-Sector-General-Permit-MSGP.cfm. Please contact your EPA Regional permitting authority at lee.won@epa.gov; lescure.nasrin@epa.gov; emily@avanticorporation.com; farris.erika@epa.gov; Christiane@avanticorporation.com; bius.catherine@epa.gov for more information.

This is an automated response; please do not reply to this email.

Los Alamos
NATIONAL LABORATORY
EST. 1943

Environmental Protection Division
Environmental Compliance Programs (ENV-CP)
PO Box 1663, K490
Los Alamos, New Mexico 87545
(505) 667-0666

Date: NOV 2 4 2015
Symbol: ENV-DO-15-0328
LA-UR: 15-29016
Locates Action No.: N/A

U.S. Environmental Protection Agency
Office of Water, Water Permits Division
Mail Code 4203M, ATTN: MSGP Reports
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

To Whom It May Concern:

Subject: **National Pollutant Discharge Elimination System (NPDES) Permit Tracking No. NMR05GB21, Multi-Sector General Permit (MSGP) 2015 Comprehensive Site Inspection Documentation**

The purpose of this letter is to notify EPA that Los Alamos National Security (LANS) conducted its Comprehensive Site Inspection at Los Alamos National Laboratory September 8 through 29, 2015, in accordance with Part 4.3 of the 2008 MSGP. On October 3, 2015, the LANS authorization to discharge under the 2015 MSGP became effective. The 2015 Annual Report would have been due on November 13, 2015 (45 days after the last day of the inspection) under the 2008 MSGP. However, due to coverage under the new 2015 MSGP superseding the 2008 requirements, LANS will provide the information collected from the 2015 Comprehensive Site Inspection and other required documentation identified in Part 7.5 of the 2015 MSGP in the 2015 Annual Report to be submitted by January 30th 2016. This Report will contain the following:

- A summary of the past year's routine facility inspection documentation (2015 MSGP Part 3.1.2) from September 1, 2015 through the end of 2015 calendar year;
- A summary of the past years quarterly visual assessment documentation (2015 MSGP Part 3.2.2);
- For any four-sample (minimum) average benchmark monitoring exceedance, if after reviewing the selection, design, installation, and implementation of control measures and considering whether any modifications are necessary to meet the effluent limits in the permit, a determination is made that no further pollutant reductions are technologically available and economically practicable and

achievable in light of best industry practice, the rationale for no further reductions being achievable (2015 MSGP Part 6.2.1.2); and

- A summary of the past year's corrective action documentation (2015 MSGP Part 4.4) from September 1, 2015 through the end of the 2015 calendar year.

The Annual Report will be signed and certified in accordance with Appendix B, Subsection 11. Please contact Terrill W. Lemke at (505) 665-2397 or Holly Wheeler at (505) 667-1312 if you have questions.

Sincerely,

Anthony R. Grieggs
Group Leader
Environmental Compliance Programs (ENV-CP)
Los Alamos National Security, LLC

ARG:TWL:HLW/lm

Cy: Nasim Jahan, USEPA/Region 6, Dallas, TX, (E-File)
Bruce Yurdin, NMED/SWQB, Santa Fe, NM, (E-File)
Michelle Hunter, NMED/GWQB, Santa Fe, NM, (E-File)
Gene E. Turner, LASO-NS-LP, (E-File)
Jorden Arnswald, LASO-NS-PI, (E-File)
Kirsten Laskey, LASO-SUP, (E-File)
Craig Leasure, PADOPS, (E-File)
Amy E. De Palma, PADOPS, (E-File)
Michael T. Brandt, ADESH, (E-File)
Raeanna Sharp-Geiger, ADESH, (E-File)
Alison M. Dorries, ENV-DO, (E-File)
Terrill W. Lemke, ENV-CP, (E-File)
Holly L. Wheeler, ENV-CP, (E-File)
lasomailbox@nnsa.doe.gov, (E-File)
locatesteam@lanl.gov, (E-File)
env-correspondence@lanl.gov

2015 NPDES Multi-Sector General Permit For Stormwater Discharges Associated With Industrial Activity (MSGP) Forms

United States Environmental Protection Agency
1200 Pennsylvania Ave, NW Washington, DC 20460

Note: This is a "smart form"; as you fill out the form, additional questions willl appear that you will need to answer.

Permit Information

1. What action would you like to take? *

File a New Notice of Intent Form

Submission of this Notice of Intent (NOI) constitutes notice that the operator identified in the Facility Operator Information section of this form requests authorization to discharge pursuant to the NPDES Stormwater Multi-Sector General Permit (MSGP) permit number identified in the Permit Information section of this form. Submission of this NOI also constitutes notice that the operator identified in the Facility Operator Information section of this form meets the eligibility conditions of Part 1.1 of the MSGP for the facility identified in the Facility Information section of this form. To obtain authorization, you must submit a complete and accurate NOI form. Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage.

Operator Name (Organization Name) *

LOS ALAMOS NATIONAL LABORATORY

Operator Name as Noted by the NOI Preparer

Los Alamos National Security, LLC

2. Select the state/territory where your facility is located *

NM

3. Is your facility located on Indian Country lands? *

○ Yes ◉ No

4. Are you requesting coverage as a "federal operator" as defined in Appendix A? *

◉ Yes ○ No

5. Are you a new discharger or a new source as defined in Appendix A? *

○ Yes ◉ No

5a. Have stormwater discharges from your facility been covered previously under an NPDES permit? *

◉ Yes ○ No

5aa. Provide your most current NPDES ID (i.e., permit tracking number) if you had coverage under EPA's MSGP 2008 or the NPDES permit number if you had coverage under an EPA individual permit *

NMR05GB21

6. Do you directly discharge to any of the waters of the U.S. that are designated by the state or tribal authority under its antidegradation policy as a Tier 3 water (Outstanding Natural Resource Water) (See Appendix L)? Your project will be considered to discharge to a Tier 3 water if the first water of the US to which you discharge is identified by a state, tribe, or EPA as a Tier 3 water. For discharges that enter a storm sewer system prior to discharge, the first water of the US to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system. *

○ Yes ◉ No

7. Does your facility directly discharge to a Federal CERCLA site listed in Appendix P? For the purposes of this permit, a permittee discharges to a Federal CERCLA site if the discharge flows directly into the site through its own conveyance, or through a conveyance owned by others, such as a municipal separate storm sewer system. *

○ Yes ◉ No

8. Has the Stormwater Pollution Prevention Plan (SWPPP) been prepared in advance of filing this NOI, as required? *

◉ Yes ○ No

9. By indicating "Yes", I confirm that I understand that the MSGP only authorizes the allowable stormwater discharges in Part 1.1.2 and the allowable non-stormwater discharges in Part 1.1.3. Any discharges not expressly authorized under the MSGP are not covered by the MSGP and they cannot become authorized by disclosure to EPA and/or a state via this Notice of Intent to be covered by the permit or by any other means (e.g., in the Stormwater Pollution Prevention Plan or during an inspection). If any discharges requiring NPDES permit coverage other than the allowable stormwater and non-stormwater discharges listed in Parts 1.1.2 and 1.1.3 will be discharged, they must be covered under another NPDES permit. *

◉ Yes ○ No

10. Master Permit Number

NMR050000

A: Facility Operator Information

1. Operator Name (Organization Name) *

LOS ALAMOS NATIONAL LABORATORY

2. Street *

PO Box 1663

3. Supplemental Address

MS K490

4. City *

Los Alamos

5. State *

NM

6. Zip Code *

87545

7. Facility County or Similar Govt. Subdivision *

Los Alamos

8. Phone (10-digits, No dashes) *

5056671312

9. Extension

10. E-Mail *

hbenson@lanl.gov

Operator point of contact information

11. First Name *

Holly

12. Middle Initial

13. Last Name *

Wheeler

14. Professional Title *

Environmental Professional

B: Facility Information

1. Facility Name *

Los Alamos National Laboratory

☒ Facility address same as facility operator address

2. Street/Location *

PO Box 1663

3. Supplemental Address

MS K490

4. City *

Los Alamos

5. State *

NM

6. Zip Code *

87545

7. Facility County or Similar Govt. Subdivision *

Los Alamos

Latitude/Longitude for the facility:

	8. Latitude (Decimal Degrees) *		9. Longitude (Decimal Degrees) *	10. Latitude/Longitude Data Source *	11. Horizontal Reference Datum
+	35.872777	-	106.321127	Other	WGS84

12. What is the ownership type of the facility *

Federal Facility (U.S. Government)

13. Estimated area of industrial activity at your facility exposed to stormwater (to the nearest quarter acre) *

126

Identify the applicable sector and subsector of your primary industrial activity (See Appendix D) that best represents the products produced or services rendered for which your facility is primarily engaged, as defined in the MSGP, and the 4-digit Standard Industrial Classification (SIC) code or 2-letter Activity Code:

15. Sector *

SECTOR AA: FABRICATED METAL PRODUCTS

16. Primary SIC Code *

3449: Miscellaneous Metal Work

17. Subsector

AA1: Fabricated Metal Products, Except Machinery and Transportation Equipment, and Coating, Engraving, and Allied Services.

18. Identify the applicable sectors(s) of any co-located industrial activity for which you are requesting permit coverage.

Sector	Subsector *	
SECTOR P: LAND TRANSPORTATION AND WAREHOUSING	P1: Motor Freight Transportation and Warehousing	Delete Sector
SECTOR K: HAZARDOUS WASTE TREATMENT, STORAGE, OR DISPOSAL FACILITIES	K1: Hazardous Waste Treatment, Storage, or Disposal Facilities, including those that are operati	Delete Sector
SECTOR A: TIMBER PRODUCTS	A4: Wood Products, Not Elsewhere Classified	Delete Sector
SECTOR D: ASPHALT PAVING AND ROOFING MATERIALS AND LUBRICANTS	D1: Asphalt Paving and Roofing Materials	Delete Sector
SECTOR O: STEAM ELECTRIC GENERATING FACILITIES	O1: Steam Electric Generating Facilities, including coal handling sites	Delete Sector
SECTOR F: PRIMARY METALS	F4: Nonferrous Foundries (Castings)	Delete Sector
SECTOR N: SCRAP RECYCLING FACILITIES	N2: Source-separated Recycling Facility	Delete Sector

Add Sector

22. Is your facility presently inactive and unstaffed? *

◯ Yes ◉ No

C: Discharge Information

1. Does your facility discharge into any saltwater receiving waters? *

◯ Yes ◉ No

2. What is the hardness of your receiving water(s) (see Appendix J) *

50-74.99 mg/L

3. Identify if the following Effluent Limitation Guideline(s) apply to any of your discharges

40 CFR Part/Subpart: Part 423	Eligible Discharges: Coal pile runoff at steam electric generating facilities	Affected MSGP Sector: O	New Source Date: 11/19/1982, 10/8/1974[1]	Does your facility have any discharges subject to this effluent limitation guideline? * ◯ Yes ◉ No
40 CFR Part/Subpart: Part 429, Subpart I	Eligible Discharges: Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	Affected MSGP Sector: A	New Source Date: 1/26/1981	Does your facility have any discharges subject to this effluent limitation guideline? * ◯ Yes ◉ No
40 CFR Part/Subpart: Part 443, Subpart A	Eligible Discharges: Runoff from asphalt emulsion facilities	Affected MSGP Sector: D	New Source Date: 7/28/1975	Does your facility have any discharges subject to this effluent limitation guideline? * ◉ Yes ◯ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *	
002	+	35.875801	-	106.327538	Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

(•) Yes ( ) No

4. List the pollutants that are causing the impairment:

Pollutant

Aluminum, total [as Al]

Delete Pollutant

Pollutant

Copper, total [as Cu]

Delete Pollutant

Pollutant

Alpha, total

Delete Pollutant

Pollutant

PCB IN WATER COLUMN

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Thallium, total [as Tl]	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

( ) Yes (•) No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *		
003	+	35.876369	-	106.326492	Lookup Receiving Waters Information	Delete Outfall

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

D. Substantially Identical to Any Outfalls Listed Above? *

(•) Yes ( ) No

E. Substantially identical to outfall ID *

002

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

5. Multiple Receiving Waters were returned for your outfall. Please select the receiving water that is associated with your outfall from this list: *

LOS ALAMOS CANYON (DP CANYON TO UPPER LANL BND)

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

LOS ALAMOS CANYON (DP CANYON TO UPPER LANL BND)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

(•) Yes ( ) No

4. List the pollutants that are causing the impairment:

Pollutant

Aluminum, total [as Al]

Delete Pollutant

Pollutant

Alpha, total

Delete Pollutant

Pollutant

PCB IN WATER COLUMN

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *: MERCURY

Pollutant *: Mercury, total [as Hg]

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *: 005

+

B. Latitude (Decimal Degrees) *: 35.873908

-

C. Longitude (Decimal Degrees) *: 106.320709

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

○ Yes ◉ No

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Pollutant: Aluminum, total [as Al]

Delete Pollutant

Pollutant: Copper, total [as Cu]

Delete Pollutant

Pollutant

Alpha, total

Delete Pollutant

Pollutant

PCB IN WATER COLUMN

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *

METALS (OTHER THAN MERCURY)

Pollutant *

Thallium, total [as Tl]

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *

006

B. Latitude (Decimal Degrees) *

\+ 35.874002

C. Longitude (Decimal Degrees) *

\- 106.319825

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

◉ Yes ○ No

E. Substantially Identical to outfall ID *

005

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Pollutant

Aluminum, total [as Al]

Delete Pollutant

Pollutant

Copper, total [as Cu]

Delete Pollutant

Pollutant

Alpha, total

Delete Pollutant

Pollutant

PCB IN WATER COLUMN

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *

METALS (OTHER THAN MERCURY)

Pollutant *

Thallium, total [as Tl]

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *

009

+

B. Latitude (Decimal Degrees) *

35.874951

-

C. Longitude (Decimal Degrees) *

106.319263

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

○ Yes ◉ No

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

(●) Yes ( ) No

4. List the pollutants that are causing the impairment:

Pollutant

Aluminum, total [as Al]

Delete Pollutant

Pollutant

Copper, total [as Cu]

Delete Pollutant

Pollutant

Alpha, total

Delete Pollutant

Pollutant

PCB IN WATER COLUMN

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *

METALS (OTHER THAN MERCURY)

Pollutant *

Thallium, total [as Tl]

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

( ) Yes (●) No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *

007

B. Latitude (Decimal Degrees) *

+ 35.874095

C. Longitude (Decimal Degrees) *

- 106.319009

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

(•) Yes ( ) No

E. Substantially identical to outfall ID *

009

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

(•) Yes ( ) No

4. List the pollutants that are causing the impairment:

Pollutant

Aluminum, total [as Al]

Delete Pollutant

Pollutant

Copper, total [as Cu]

Delete Pollutant

Pollutant

Alpha, total

Delete Pollutant

Pollutant

PCB IN WATER COLUMN

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *

METALS (OTHER THAN MERCURY)

Pollutant *

Thallium, total [as Tl]

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *	
008	+	35.874306	-	106.318891	

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

◉ Yes ○ No

E. Substantially identical to outfall ID *

009

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Pollutant

Aluminum, total [as Al]

Delete Pollutant

Pollutant

Copper, total [as Cu]

Delete Pollutant

Pollutant

Alpha, total

Delete Pollutant

Pollutant

PCB IN WATER COLUMN

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *

METALS (OTHER THAN MERCURY)

Pollutant *

Thallium, total [as Tl]

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *

010

B. Latitude (Decimal Degrees) *

\+

35.874014

C. Longitude (Decimal Degrees) *

\-

106.318428

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

◉ Yes ○ No

E. Substantially identical to outfall ID *

009

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Pollutant

Aluminum, total [as Al]

Delete Pollutant

Pollutant

Copper, total [as Cu]

Delete Pollutant

Pollutant

Alpha, total

Delete Pollutant

Pollutant

PCB IN WATER COLUMN

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *

METALS (OTHER THAN MERCURY)

Pollutant *

Thallium, total [as Tl]

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *

011

+

B. Latitude (Decimal Degrees) *

35.875560

-

C. Longitude (Decimal Degrees) *

106.320764

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

◉ Yes ○ No

E. Substantially identical to outfall ID *

012

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Pollutant

Aluminum, total [as Al]

Delete Pollutant

Pollutant

Copper, total [as Cu]

Delete Pollutant

Pollutant

Alpha, total

Delete Pollutant

Pollutant

PCB IN WATER COLUMN

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *

METALS (OTHER THAN MERCURY)

Pollutant *

Thallium, total [as Tl]

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *

012

+

B. Latitude (Decimal Degrees) *

35.875506

-

C. Longitude (Decimal Degrees) *

106.320842

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

○ Yes ◉ No

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

(•) Yes ( ) No

4. List the pollutants that are causing the impairment:

Pollutant

Aluminum, total [as Al]

Delete Pollutant

Pollutant

Copper, total [as Cu]

Delete Pollutant

Pollutant

Alpha, total

Delete Pollutant

Pollutant

PCB IN WATER COLUMN

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *

METALS (OTHER THAN MERCURY)

Pollutant *

Thallium, total [as Tl]

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

( ) Yes (•) No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID * | B. Latitude (Decimal Degrees) * | C. Longitude (Decimal Degrees) *

004 | + | 35.871465 | - | 106.323844 | Lookup Receiving Waters Information | Delete Outfall

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

D. Substantially Identical to Any Outfalls Listed Above? *

◯ Yes ◉ No

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect:) *

TWO MILE CANYON (PAJARITO TO HEADWATERS)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ◯ No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * | Pollutant *

METALS (OTHER THAN MERCURY) | Aluminum, total [as Al] | Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * | Pollutant *

RADIATION | Alpha, total | Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * | Pollutant *

POLYCHLORINATED BIPHENYLS (PCBS) | Polychlorinated biphenyls [PCBs] | Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

◯ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID * | B. Latitude (Decimal Degrees) * | C. Longitude (Decimal Degrees) *

018 | + | 35.872781 | - | 106.317616 | Lookup Receiving Waters Information | Delete Outfall

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

D. Substantially Identical to Any Outfalls Listed Above? *

○ Yes ◉ No

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Pollutant

Aluminum, total [as Al]

Delete Pollutant

Pollutant

Copper, total [as Cu]

Delete Pollutant

Pollutant

Alpha, total

Delete Pollutant

Pollutant

PCB IN WATER COLUMN

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *

METALS (OTHER THAN MERCURY)

Pollutant *

Thallium, total [as Tl]

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
014	+	35.870641	-	106.316865

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *
(•) Yes ( ) No

E. Substantially identical to outfall ID *
018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

MORTANDAD CANYON (WITHIN LANL)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *
(•) Yes ( ) No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
RADIATION	Alpha, total	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *
( ) Yes (•) No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
013	+	35.870783	-	106.317349

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *
(•) Yes ( ) No

E. Substantially identical to outfall ID *
018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect) *

MORTANDAD CANYON (WITHIN LANL)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *
(•) Yes ( ) No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
RADIATION	Alpha, total	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *
( ) Yes (•) No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
013	+	35.870783	-	106.317349

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *
(•) Yes ( ) No

E. Substantially identical to outfall ID *
018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect) *

MORTANDAD CANYON (WITHIN LANL)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *
(•) Yes ( ) No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
RADIATION	Alpha, total	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *
( ) Yes (•) No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
015	+	35.871403	-	106.316276

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *
(•) Yes ( ) No

E. Substantially identical to outfall ID *
018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *
MORTANDAD CANYON (WITHIN LANL)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *
(•) Yes ( ) No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
RADIATION	Alpha, total	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *
( ) Yes (•) No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
016	+	35.872553	-	106.316810

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *
(●) Yes ( ) No

E. Substantially Identical to outfall ID *
018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *
(●) Yes ( ) No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Thallium, total [as Tl]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
RADIATION	Alpha, total	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
017	+	35.872752	-	106.317329

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

◉ Yes ○ No

E. Substantially identical to outfall ID *

018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Thallium, total [as Tl]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
013	+	35.870783	-	106.317349

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *
(•) Yes ( ) No

E. Substantially identical to outfall ID *
018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect) *

MORTANDAD CANYON (WITHIN LANL)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *
(•) Yes ( ) No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
RADIATION	Alpha, total	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *
( ) Yes (•) No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
015	+	35.871403	-	106.316276

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *
(•) Yes ( ) No

E. Substantially identical to outfall ID *
018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *
MORTANDAD CANYON (WITHIN LANL)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *
(•) Yes ( ) No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
RADIATION	Alpha, total	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *
( ) Yes (•) No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
016	+	35.872553	-	106.316810

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *
(●) Yes ( ) No

E. Substantially Identical to outfall ID *
018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *
(●) Yes ( ) No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Thallium, total [as Tl]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
RADIATION	Alpha, total	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
017	+	35.872752	-	106.317329

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

◉ Yes ○ No

E. Substantially identical to outfall ID *

018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Thallium, total [as Tl]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
017	+	35.872752	-	106.317329

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

◉ Yes ○ No

E. Substantially identical to outfall ID *

018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Thallium, total [as Tl]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * RADIATION

Pollutant * Alpha, total

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID * 019

\+

B. Latitude (Decimal Degrees) * 35.872668

\-

C. Longitude (Decimal Degrees) * 106.318428

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

◉ Yes ○ No

E. Substantially identical to outfall ID * 018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * METALS (OTHER THAN MERCURY)

Pollutant * Aluminum, total [as Al]

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * METALS (OTHER THAN MERCURY)

Pollutant * Copper, total [as Cu]

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * POLYCHLORINATED BIPHENYLS (PCBS)

Pollutant * Polychlorinated biphenyls [PCBs]

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *: METALS (OTHER THAN MERCURY)

Pollutant *: Thallium, total [as Tl]

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *: RADIATION

Pollutant *: Alpha, total

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *: 051

+

B. Latitude (Decimal Degrees) *: 35.830145

-

C. Longitude (Decimal Degrees) *: 106.242675

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

○ Yes ◉ No

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

PAJARITO CANYON (IN LANL BELOW ARROYO DE LA DELFE)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *: METALS (OTHER THAN MERCURY)

Pollutant *: Aluminum, total [as Al]

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *: METALS (OTHER THAN MERCURY)

Pollutant *: Copper, total [as Cu]

Delete Pollutant

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
015	+	35.871403	-	106.316276

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *
(•) Yes ( ) No

E. Substantially identical to outfall ID *
018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *
MORTANDAD CANYON (WITHIN LANL)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *
(•) Yes ( ) No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
RADIATION	Alpha, total	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *
( ) Yes (•) No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
016	+	35.872553	-	106.316810

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *
(●) Yes ( ) No

E. Substantially Identical to outfall ID *
018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *
(●) Yes ( ) No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Thallium, total [as Tl]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
RADIATION	Alpha, total	Delete Pollutant

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
013	+	35.870783	-	106.317349

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *
(•) Yes ( ) No

E. Substantially identical to outfall ID *
018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect) *

MORTANDAD CANYON (WITHIN LANL)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *
(•) Yes ( ) No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
RADIATION	Alpha, total	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *
( ) Yes (•) No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
015	+	35.871403	-	106.316276

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *
(•) Yes ( ) No

E. Substantially identical to outfall ID *
018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *
MORTANDAD CANYON (WITHIN LANL)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *
(•) Yes ( ) No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
RADIATION	Alpha, total	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *
( ) Yes (•) No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
016	+	35.872553	-	106.316810

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *
(●) Yes ( ) No

E. Substantially Identical to outfall ID *
018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *
(●) Yes ( ) No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Thallium, total [as Tl]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
RADIATION	Alpha, total	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
017	+	35.872752	-	106.317329

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

◉ Yes ○ No

E. Substantially identical to outfall ID *

018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Thallium, total [as Tl]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
013	+	35.870783	-	106.317349

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *
(•) Yes ( ) No

E. Substantially identical to outfall ID *
018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect) *

MORTANDAD CANYON (WITHIN LANL)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *
(•) Yes ( ) No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
RADIATION	Alpha, total	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *
( ) Yes (•) No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
015	+	35.871403	-	106.316276

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *
(•) Yes ( ) No

E. Substantially identical to outfall ID *
018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *
MORTANDAD CANYON (WITHIN LANL)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *
(•) Yes ( ) No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
RADIATION	Alpha, total	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *
( ) Yes (•) No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
016	+	35.872553	-	106.316810

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *
(●) Yes ( ) No

E. Substantially Identical to outfall ID *
018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *
(●) Yes ( ) No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Thallium, total [as Tl]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
RADIATION	Alpha, total	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
017	+	35.872752	-	106.317329

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

◉ Yes ○ No

E. Substantially identical to outfall ID *

018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Thallium, total [as Tl]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
017	+	35.872752	-	106.317329

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

◉ Yes ○ No

E. Substantially identical to outfall ID *

018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Thallium, total [as Tl]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * RADIATION

Pollutant * Alpha, total

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID * 019

\+

B. Latitude (Decimal Degrees) * 35.872668

\-

C. Longitude (Decimal Degrees) * 106.318428

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

◉ Yes ○ No

E. Substantially identical to outfall ID * 018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * METALS (OTHER THAN MERCURY)

Pollutant * Aluminum, total [as Al]

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * METALS (OTHER THAN MERCURY)

Pollutant * Copper, total [as Cu]

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * POLYCHLORINATED BIPHENYLS (PCBS)

Pollutant * Polychlorinated biphenyls [PCBs]

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *: METALS (OTHER THAN MERCURY)

Pollutant *: Thallium, total [as Tl]

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *: RADIATION

Pollutant *: Alpha, total

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *: 051

+

B. Latitude (Decimal Degrees) *: 35.830145

-

C. Longitude (Decimal Degrees) *: 106.242675

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

○ Yes ◉ No

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

PAJARITO CANYON (IN LANL BELOW ARROYO DE LA DELFE)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *: METALS (OTHER THAN MERCURY)

Pollutant *: Aluminum, total [as Al]

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *: METALS (OTHER THAN MERCURY)

Pollutant *: Copper, total [as Cu]

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
017	+	35.872752	-	106.317329

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

◉ Yes ○ No

E. Substantially identical to outfall ID *

018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Thallium, total [as Tl]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * RADIATION

Pollutant * Alpha, total

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID * 019

\+

B. Latitude (Decimal Degrees) * 35.872668

\-

C. Longitude (Decimal Degrees) * 106.318428

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

◉ Yes ○ No

E. Substantially identical to outfall ID * 018

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * METALS (OTHER THAN MERCURY)

Pollutant * Aluminum, total [as Al]

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * METALS (OTHER THAN MERCURY)

Pollutant * Copper, total [as Cu]

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * POLYCHLORINATED BIPHENYLS (PCBS)

Pollutant * Polychlorinated biphenyls [PCBs]

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *: METALS (OTHER THAN MERCURY)

Pollutant *: Thallium, total [as Tl]

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *: RADIATION

Pollutant *: Alpha, total

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *: 051

+

B. Latitude (Decimal Degrees) *: 35.830145

-

C. Longitude (Decimal Degrees) *: 106.242675

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

○ Yes ◉ No

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

PAJARITO CANYON (IN LANL BELOW ARROYO DE LA DELFE)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *: METALS (OTHER THAN MERCURY)

Pollutant *: Aluminum, total [as Al]

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *: METALS (OTHER THAN MERCURY)

Pollutant *: Copper, total [as Cu]

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * POLYCHLORINATED BIPHENYLS (PCBS)

Pollutant * Polychlorinated biphenyls (PCBs)

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID * 072

B. Latitude (Decimal Degrees) * + 35.832885

C. Longitude (Decimal Degrees) * - 106.239443

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

○ Yes ◉ No

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

CANADA DEL BUEY (WITHIN LANL)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * METALS (OTHER THAN MERCURY)

Pollutant * Aluminum, total (as Al)

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * POLYCHLORINATED BIPHENYLS (PCBS)

Pollutant * Polychlorinated biphenyls (PCBs)

Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group * RADIATION

Pollutant * Alpha, total

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Outfalls

4. List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002) or a 4-digit ID. Also provide the latitude and longitude in decimal degrees for each outfall.

A. Outfall ID *		B. Latitude (Decimal Degrees) *		C. Longitude (Decimal Degrees) *
020	+	35.872251	-	106.316273

Lookup Receiving Waters Information

(This button will prepopulate the receiving water information associated with your outfall on your form. You may edit the information that is returned if you believe it is incorrect)

Delete Outfall

D. Substantially Identical to Any Outfalls Listed Above? *

○ Yes ◉ No

If for any reason the Lookup Receiving Water Information button does not prepopulate your form with receiving waters information, you must manually enter the information on your form.

Outfall Section

1. Provide the name of the first water of the U.S that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to. (You may edit the name of the water of the U.S. that was returned if incorrect.) *

SANDIA CANYON (SIGMA CANYON TO NPDES OUTFALL 001)

2. Is the receiving water listed as impaired on the 303(d) list and in need of a TMDL? *

◉ Yes ○ No

4. List the pollutants that are causing the impairment:

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Aluminum, total [as Al]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Copper, total [as Cu]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
METALS (OTHER THAN MERCURY)	Thallium, total [as Tl]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *	Pollutant *	
POLYCHLORINATED BIPHENYLS (PCBS)	Polychlorinated biphenyls [PCBs]	Delete Pollutant

Please select the cause group and pollutant for which the waterbody is impaired:

Cause Group *: RADIATION

Pollutant *: Alpha, total

Delete Pollutant

Add Impairment Pollutant Associated with this Waterbody

3. Has a TMDL been completed for this receiving waterbody? *

○ Yes ◉ No

Add Another Outfall

Provide the following information about your outfall latitude longitude.

5. Latitude/Longitude Data Source *: GPS

6. Horizontal Reference Datum: NAD83

7. Does your facility discharge into a Municipal Separate Storm Sewer System (MS4)? *

○ Yes ◉ No

8. Do you discharge to any of the waters of the U.S. that are designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water) (See Appendix L)? *

○ Yes ◉ No

D: Stormwater Pollution Prevention Plan (SWPPP) Information

SWPPP Contact Information

1. First Name *: Holly

2. Middle Initial:

3. Last Name *: Wheeler

4. Professional Title *: Environmental Professional

5. Phone (10-digits, No dashes) *: 5056671312

6. Extension:

7. E-Mail *: hbenson@lanl.gov

8. Your current SWPPP or certain information from your SWPPP must be made available through one of the following two options. Select one of the options and provide the required information. *

Note: You are not required to post any confidential business information (CBI) or restricted information (as defined in Appendix A) (such information may be redacted), but you must clearly identify those portions of the SWPPP that are being withheld from public access.

☒ Option 1: Maintain a Current Copy of your SWPPP on an Internet page (Universal Resource Locator or URL).

Provide the web address URL *: eprr.lanl.gov

☐ Option 2: Provide the following information from your SWPPP.

E: Endangered Species Protection

1. Using the instructions in Appendix E of the MSGP, under which endangered species criterion listed in Part 1.1.4.5 are you eligible for coverage under this permit? *

Criterion D – A separate ESA section 7 consultation has been completed

2. Provide a brief summary of the basis for the criterion selected in Appendix E (e.g., communication with U.S. Fish and Wildlife Service or National Marine Fisheries Service to determine no species in action area; implementation of controls approved by EPA and the Services). *

Direct consultation with the U.S. Fish and Wildlife Service and corresponding development and implementation of a facility-specific Habitat Management Plan.

You must attach copies of any letters or other communications with the U.S. Fish and Wildlife Service or National Marine Fisheries Service on the attachments screen after you click "Submit Now"

F: Historic Preservation

1. If your facility is not located in Indian country lands, is your facility located on a property of religious or cultural significance to an Indian tribe? *

(●) Yes ( ) No

1a. If yes, provide the name of the Indian tribe associated with the property *

San Ildefonso Pueblo

2. Using the instructions in Appendix F of the MSGP, under which historic properties preservation criterion listed in Part 1.1.4.7 are you eligible for coverage under this permit *

Criterion B - Subsurface stormwater controls will not affect historic properties

Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. 40 CFR 122.22 (d)

Certifier E-Mail *

ADORRIES@LANL.GOV

Form Action *

Approve

Attachment N

Training

2015 MSGP Corrective Actions

Presented by

Terrill Lemke and Holly Wheeler

Environmental Protection Division

Compliance Programs (ENV-CP)

December 01, 2015

Agenda

- Definition of Corrective Action
- What triggers a corrective action
- Examples of issues requiring corrective actions
- Timeframes to address corrective actions
- 45 Day Extension
- Corrective action process
- Results of initial inspection
- Suggestions
- Expectations and questions
- Request for other topics

Corrective Action

Definition: "Any action taken, or required to be taken, to

(1) repair, modify, or replace any stormwater control used at the site;

(2) clean up and dispose of spills, releases, or other deposits found on the site;

(3) remedy a permit violation.

What Triggers A Corrective Action?

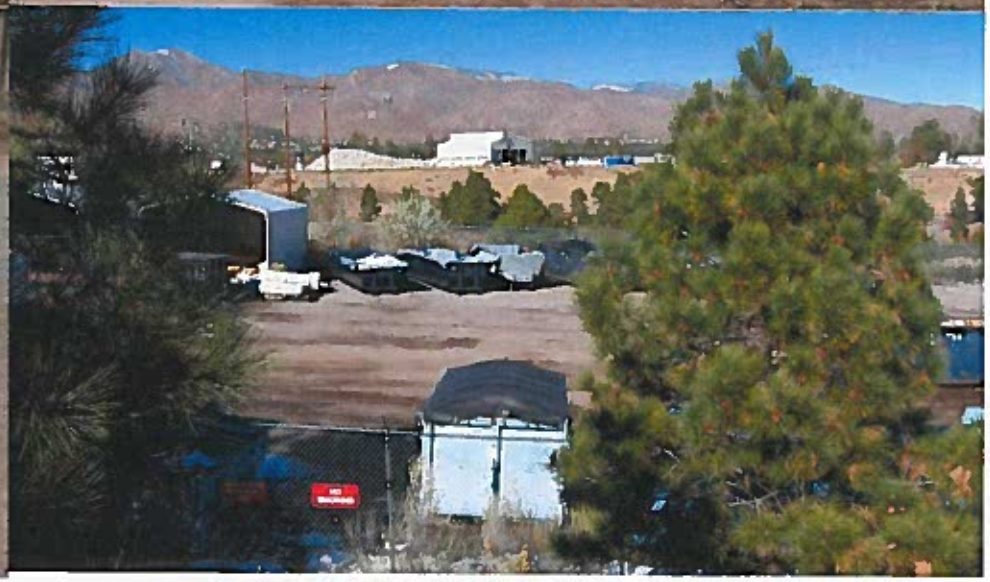
- Unauthorized release or discharge
- Discharge that violated a numeric effluent limit
- Control measures that are not stringent enough to ensure stormwater discharges meet Water Quality Standards.
  - These are the threshold values in your SWPPPs
- Visual assessment that shows evidence of stormwater pollution (e.g., color, odor, floating solids, settled solids, suspended solids, foam)
- Failure to meet any permit condition or those specified in the site specific SWPPP

Examples of Issues Requiring Corrective Action









Examples of Issues Requiring Corrective Action (continued)



Timeframes to address new corrective actions

- Shall *Immediately* take action upon identification of an issue
  - Immediately is the same day a condition is found
  - If found after 3:00 pm, action must be taken the next work day
- If follow-up action is needed – before the next storm event or within 14 calendar days
- If finalization of CA is *not feasible* within 14 days the following is required
  - Documentation of why it is not feasible to close the CA within this timeframe
  - A formal schedule for completion of the action A.S.A.P. but no longer than 45 days after discovery

45 Day Extension

- If a CA is expected to exceed the 45 day timeframe (as identified above) the DEP shall provide ENV-CP the following information
  - Rationale for an extension (e.g., a defensible position that does not put LANS at risk)
  - Provide a realistic completion date
  - Take the minimum additional time necessary to complete the corrective action.
- Where a corrective action results in a change to any control measure or procedure the SWPPP must be modified within 14 calendar days of the day the CA was closed.

Corrective Action Process

- Identification of an issue either during routine operations or during an inspection
  - Notify the Deployed Environmental Professional
  - Take immediate action
  - Record the issue and corrective action
    - Enter the issue into the MSGP Corrective Action Report (CAR) Database
    - Propose a completion date
    - System notifies FOD, DSESH Manager, and ENV-CP of new CA
  - Follow-up and completion of corrective action
    - Perform work and record completed activities and date of completion in the database
    - Database automatically sends e-mail notifications to key personnel every 30 days until corrective actions are closed (process may change/compress in the future)

Corrective Action Process (continued)

- Follow-up and completion of corrective action (continued)
  - If CA is expected to exceed 14 days, enter a schedule for completion in the database
  - At about day 30, ENV-CP will be contacting the DEP for the following information:
    - Rationale for a 45 day extension
    - Realistic completion date taking the minimum amount of time necessary
  - Letter will be sent to Region 6 EPA prior to the 45th day.
  - ENV-CP will track progress according to the schedule provided in the 45 day extension letter
  - If timeframes in the letter are exceeded, it is a permit non-compliance.

Results of initial inspection

- Started with 40 corrective actions with potential to exceed 45 day timeframe
- Corrective action initiated well into the 45-day period (not started immediately)
- Three CA's reported to Region 6 EPA with rationale and completion dates.
  - Took numerous phone calls and discussions up the management chain to the AD level to accomplish this
  - Not efficient use of resources
  - Must strive for proactivity, not reactivity
- One was closed within identified timeframe
- One has exceeded the completion date reported to EPA
- One must be addressed by this Friday
- EPA will consider the appropriateness and promptness of corrective action in determining enforcement response to permit violations

Suggestions for Improvements?

- How does the institution speed up the corrective action process?
  - Improve the FSR system?
    - Flag compliance driven work
    - Allow compliance driven work to move through system without cost code or automatically be assigned a specific cost code
  - Use Maintenance Connection to push out work order to DEPs with deadline and notification to managers
  - What are the barriers you face in taking immediate action and/or completing work within 14 days?
    - How do we improve this? Ideas?

Expectations

- Be timely and diligent in implementing 2015 MSGP requirements at your facilities
  - ***Plan ahead for budget & resources***
- Look for opportunities to streamline and improve processes
- Ask for help



Questions?

Requests for Other Topics?

ENV-CP

Training Topic: 2015 MSGP Corrective Action Training
Date: December 1, 2015
Place: TA-59-116-117
Training Called By: Sue Terp, ENV-ES DEP Monthly Meeting
Training Given By: Holly Wheeler and Terrill Lemke, ENV-CP

Name	Z#	Organization	Mail Stop	Phone	Cell	Pager
Stephen Cossey	122057	DSESH-TA55	K571	5-8893	500-6614	4-5791
David Paulson	193689	DSESH-LFO	H418	5-8884	930-7347	—
Sonya Cohn	2016203	ENV-ES		5-8866	231-5385	—
Susan Terp	097044	ENV-ES	~~K491~~ J978	5-8889	—	—
Stephanie Hechmer	104588	DSESH-DO	K481	7-4796	695-0207	
Bill O'Neill	240098	DSESH-UI		412-5705 →		
Pattie Baucom	206967	DSESH-LFO	H418	7-3905		
Lauren Massengill	292621	DSESH-STO		7-2964		
Kari Schoenberg	243198	DSESH-STO		7-1623		
Marc Galleges	172470	DSESH-STO	~~H418~~	5-9050	500-2466	—

Name	Z#	Organization	Mail Stop	Phone	Cell	Pager
Kelkenny Baleen	178005	DSESH-WFO	C925	665-9306	699-0446	664-1296
Alethea Bannan	108243	ENV-CP	K-490	699-5836	699-5836	N/A
Holly Wheeler	118432	ENV-CP	K-490	7-1312	N/A	N/A
Terrill Lemke	120092	ENV-CP	K490	5-2397	699-0725	N/A
David Schrock	232597	DSESH-EWMO	J962	5-6547	500-5549	664-8896