Title:	MSGP Stormwater Pollution Prevention Plan TA-16 Stockpile Area
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MSGP Stormwater Pollution Prevention Plan

TA-16 Stockpile Area

Triad National Security, LLC

Los Alamos National laboratory

January 2021
Revision 2

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STORMWATER POLLUTION PREVENTION PLAN

PREFACE

This Stormwater Pollution Prevention Plan (SWPPP) was developed in accordance with the provisions of the Clean Water Act (33 U.S.C. §§1251 et seq., as amended), and the *United States Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP)* (U.S. EPA, January 2021) issued by EPA. The SWPPP uses the industry specific permit requirements for Sector P: Land Transportation and Warehousing as a guide. The applicable stormwater discharge permit is EPA General Permit Tracking Number NMR050013 MSGP 2021 [Triad National Security, LLC (Triad)]. Click here to view contents of the 2021 Multi-Sector General Permit

This SWPPP applies to discharges of stormwater from the operational areas of the TA-16 Stockpile Area within Weapons Facility Operations (WFO) Facility Operations Directorate (FOD) at Los Alamos National Laboratory. Los Alamos National Laboratory (also referred to as LANL or the "Laboratory") is owned by the Department of Energy (DOE), and is operated by Triad. Throughout this document, the term "facilities" refers to the TA-16 Stockpile Area. The current MSGP expires at midnight on February 28, 2026.

1.0 FACILITY DESCRIPTION

1.1 Facility Information

Name of Facility: TA-16 Stockpile Area		
Street: PO Box 1663		
City: Los Alamos	State: NM	ZIP Code: 87545
County: Los Alamos		
NPDES ID (i.e., permit tracking number): NMR050013 MSGP 2021		
Primary Industrial Activity Sector and Subsector (2021 MSGP, Appendix D and Part 8): Sector P, Subsector P1		
Estimated area of industrial activity at site exposed to stormwater: 1.2 acres		
Discharge Information		
Name(s) of surface water(s)/segment that receives stormwater from your facility: Cañon de Valle (within LANL) below LANL Gage E256		

Does this facility discharge industrial stormwater directly into any segment of an "impaired water" (see definition in 2021 MSGP, Appendix A)? ☒Yes No
Pollutants causing the impairment: Adjusted Gross Alpha
Pollutants causing the impairment (see above) that may be present in industrial stormwater discharges from this Facility: Adjusted Gross Alpha
Are any of your stormwater discharges subject to effluent limitation guidelines (ELGs) (2021 MSGP Table 1-1)? ☐Yes ☒No If Yes, which guidelines apply? Not applicable.

1.2 Stormwater Pollution Prevention Team (PPT)

The TA-16 Stockpile Area is part of the Weapons Facility Operation (WFO) Facility Operations Division (FOD) at Los Alamos National Laboratory with day-to-day management provided by Logistics Division-Heavy Equipment Roads & Grounds (LOG-HERG), which has established a PPT whose members are responsible for assisting the facility manager in developing and revising the facility's SWPPP as well as maintaining control measures and taking corrective actions when required. All PPT members have access to either a hard copy or an electronic version of this SWPPP.

The specific duties of individual team members of the PPT are listed below.

Staff Names	Individual Responsibilities
FOD Manager/Representative John Branch, Operations Manager, WFO-HE	Responsible for managing the operation and maintenance of all aspects of the TA-16 Stockpile Area listed within this Plan. The Operations Manager shall provide review and ensure coordination with core personnel and the PPT, as appropriate, when tenants within the WFO FOD propose a new process or a new site or operation that may be subject to the MSGP. The FOD Manager/Representative is key to ensuring adequate communication and coordination of issues regarding implementation of the MSGP and this SWPPP.
Deployed Environmental Professional (DEP) Kelkenny Bileen, EPC-CP	Responsible for the support and oversight of all environmental programs and issues for the TA-16 Stockpile Area. The DEP is responsible for training, recordkeeping, and SWPPP revision. The DEP ensures that all PPT, operations site workers (as appropriate), and applicable supervisors receive annual MSGP and SWPPP training. The DEP ensures documentation of inspections and other required MSGP records relative to the SWPPP are managed in accordance with the permit and established document control procedures and that the SWPPP is kept current. The DEP provides technical and regulatory support and regularly communicates with facility and operations personnel and the PPT regarding implementation of the MSGP and this SWPPP. Lastly, the DEP conducts routine facility inspections and if necessary, visual assessments, in accordance with the Permit. Identified conditions

	requiring corrective actions from routine facility inspections are entered into the Environmental Protection and Compliance-Compliance Programs (EPC-CP) Corrective Action Report (CAR) database. The DEP is responsible for tracking and updating the status of corrective actions that cannot be implemented immediately. The DEP is also responsible for immediate and timely communication to appropriate facility and operations management personnel to ensure that they are aware of non-compliant issues within the MSGP facility boundary and that they understand immediate action is required to correct the non-compliance.
EPC Core Holly Wheeler, MSGP Program Lead, EPC-CP	The MSGP Program Lead is responsible for managing and administering the MSGP Program for all industrial facilities operated by Triad within Los Alamos National Laboratory. The MSGP Program Lead advises and provides guidance to facility and operations personnel on NPDES MSGP regulations/requirements. The MSGP Program Lead also acts as the institutional point of contact for all interactions with the regulatory authority (EPA) and supervises personnel implementing stormwater monitoring requirements for the facility.
Facility Staff Randy Archuleta, Logistics Superintendent Field Work Execution (LOG-SUP)	Responsible for day-to-day operations at the facility. Assisting DEPs and EPC with inspections; spill reporting; implementing, installing and maintaining stormwater controls (also known as Best management Practices) (BMPs); and providing documentation as requested by other team members. The Superintendent is key to ensuring adequate communication and coordination of issues regarding implementation of the MSGP and this Plan. The Superintendent also assists the DEP/EPC with SWPPP training and/or briefings, as requested.

1.3 Site Description

Activities associated with the TA-16 Stockpile Area fall under Industrial Sector P, Land Transportation and Warehousing, of the 2021 MSGP.

The TA-16 Stockpile Area includes two industrial activity areas: 1) the material storage area where construction materials (sand, gravel, rock, base course, soil and clean fill) are staged, and 2) the pothole washout area where two containment basins are located to manage pothole washout water and associated sediment. The 1.2 acre TA-16 Stockpile Area is 0.9 miles east of TA-16-0969 WFO-Division Office, on the east side of K-Site Road. Activities include the following:

- Storage of trucks and heavy equipment used to transport/haul material.
- Staging of soil or clean fill prior to reuse.
- Potholing washout and culvert cleanout area.
- Storage of sand, gravel, rock, base course, and other landscaping materials related to grounds keeping, road maintenance and construction.

The area surrounding the TA-16 Stockpile Area (formerly, TA-16-280) is primarily undeveloped except for the paved K-Site Road located west of the site. Areas within the TA-16 Stockpile Area are stabilized with base course, pavement and native vegetation. The boundary of industrial activity is approximately 1.2 acres with 10 percent impervious cover. Earthern berms serve as perimeter controls to prevent offsite sediment migration from the material storage area. Bermed catchment basins serve as containment controls for the potholing staging area. Monitored outfall 078 is located on the northwest corner of the site on the spillway for the earthen berm perimeter control. There are no substantially identical outfalls for this facility.

1.4 General Location Map

A general location map for the facility can be found in Figure A. Figure B-1 contains the site map. Figure B-2 identifies nearby receiving waters associated with stormwater discharges from the facility. 100% percent of the site flows to Canon de Valle. The canyon at this location is an ephemeral stream and eventually flows to the Rio Grande approximately nine and a half miles southeast of the site.

1.5 Site Map

The site map provided as Figure B-1 illustrates the facility's activities including the facility boundary, structures, impervious surfaces, industrial activity areas, spills, operational areas, and drainage patterns, stormwater controls, monitoring locations, outfalls and direction of the receiving stream.

As required by the 2021 MSGP, the following information specific to the facility is either shown on the site map or provided elsewhere in this SWPPP.

- **Site boundary and acreage.** The site covers approximately 1.2 acres.
- **Significant structures and impervious surfaces.** The site is 10 percent impervious (pavement).
- **Direction of stormwater flow and site drainage.** Direction of flow is indicated with arrows. Areas have been regraded to ensure stormwater flows are directed from the stockpile area toward monitored outfall 078 and the perimeter berm located along the northwest perimeter of the site. The containment basins in the pothole washout area promotes infiltration and prevent discharge of sediments to the surrounding area. The earthen berm located southeast of the stockpile area acts to manage run-on from the slope to the south and manage sediments along the southern boundary of the stockpile area, next to former outfall and associated drainline [AOC 16-030(d)]. Run-on from K-Site Road is managed by a vegetated swale that directs flows to the north, along the western boundary of the site.
- **Locations of stormwater control measures.** The earthen berm located along the northwestern perimeter of the stockpile area manages runoff and acts to prevent offsite sediment migration. The earthen berm located southeast of the stockpile area acts to manage run-on from the slope to the south and manage sediments along the southern boundary of the stockpile area. The containment basins located in the pothole washout area along the southern boundary of industrial activity, manage sediments and pothole washout water. Run-on from K-Site Road is managed by a vegetated swale that directs flows to the north, along the western boundary of the site.

- **Locations of all receiving waters.** The site discharges to a tributary of Canon de Valle which is impaired for Adjusted Gross Alpha. TMDLs for the receiving waters are not established and wetlands are not present. A map of nearby receiving waters is provided as Figure B-2.
- **Locations of all stormwater conveyances.** This includes all ditches, pipes, and swales.
- **Locations of potential pollutant sources.**
- **Locations of significant spills or leaks.**
- **Locations of all stormwater monitoring points.**
- **Locations of stormwater inlets and outfalls** Monitoring is conducted via automated sampler MSGP07801 at monitored outfall 078 (northwest corner of the boundary of industrial activity, north of earthen berm #1600103010001). There are no substantially identical discharge points (SIDPs) associated with this site.
- This facility is currently not associated with a municipal separate storm sewer system (MS4).
- **Areas of designated critical habitat for endangered or threatened species.** There are no areas in the direct vicinity of the facility. However, a map for threatened and endangered species within LANL property is included as Figure B-3.
- Locations of the following activities where such activities are exposed to precipitation:
    - Material Storage Area (storage and loading/unloading of sand, gravel, rock, base course, related to road maintenance and construction and storage of trucks and heavy equipment used to transport/haul material);
    - Pothole Staging Area (loading/unloading of pothole washout water and culvert cleanout water into the containment basins); and
    - Immediate access roads (used or traveled by carriers of raw materials and pothole washout culvert cleanout water).

2.0 POTENTIAL POLLUTANT SOURCES

Industrial activities that could potentially result in releases to the environment are summarized in Section 2.1 below. The site map for the facility is provided in Figure B-1.

2.1 Potential Pollutants Associated with Industrial Activity

Storage of Trucks and Heavy Equipment for Material Loading and Unloading

Potential pollutants for this activity include spills of fuel, oil, grease, fluids (transmission and hydraulic), and anti-freeze and associated heavy metals. Perimeter berms are installed in strategic locations to contain spills in the event a leak involving a potential pollutant occurs.

Material Loading/Unloading Operations

Front-end loaders are used to load and unload sand, soil, clean fill, base course and rock in the material storage area. Dust is a potential pollutant of concern from this operation and is controlled, as needed, by wetting the materials with a water truck. Other potential pollutants of concern from this equipment include leaks and spills (i.e. hydraulic fluids or diesel fuel) from loading and unloading trucks. On site containment berms and spill response protocol ensure all spills are managed appropriately.

Raw Material Storage Area

The potential pollutant associated with this activity is offsite migration of sediment. Perimeter berms are installed in strategic locations to manage stormwater runoff and prevent sediment migration.

Pothole Staging Area

Potholing washout and culvert cleanout water is screened to verify it is from area free from contamination. The potential pollutant is offsite migration of sediment. One primary containment basin and a reserve containment basin function to contain, infiltrate, and evaporate pothole washout and culvert cleanout water. Sediments are removed as needed to ensure the catchments have adequate capacity to manage pothole washout and culvert cleanout water. Other potential pollutants include leaks or spills of fuel, oil, grease, fluids (transmission and hydraulic), anti-freeze and associated heavy metals from heavy equipment performing work in the area. In the event a leak is identified, LANL spill response protocol is followed (i.e., on-site spill response kit and notifications) as specified in Section 3.1.4.

Clean Fill Material

Clean fill is defined in the LANL policy "Excavation/Fill/Soil Disturbance," Policy Number P-101-17, as uncontaminated, non-water-soluble, non-decomposable inert solid material. Fill material (concrete and/or asphalt from LANL decontamination and decommissioning efforts or other projects) or soil used as fill material at LANL must be demonstrated to be free of contamination, must not be placed in a watercourse, and must not create a public nuisance or impact the environment.

Clean fill used in accordance with P101-17 is not managed as waste and therefore, not subject to waste management regulations. The use of clean fill includes the transportation, processing, storage, management and reuse.

Environmental due diligence is performed to determine whether material can be managed as clean fill, or will be managed as waste in accordance with applicable waste management regulations. If any of the following indicators are present, the material may contain potential pollutants.

- Operations conducted at the location of origin that may have resulted in contamination of the fill material or soil [e.g., operations within the High Explosives corridor, within an open detonation blast radius, beryllium contamination area, area potentially contaminated with depleted uranium, or soil taken from outside of Phermex, or potential release sites (also known as Consent Order Site)];
- Visual examination identifies signs of staining;
- Material removed from potentially radioactively-contaminated areas; or
- Unusual odors or other indicators of contamination are detected.

If there is a possibility that the material may contain potential pollutants, contact the Sample Management Office (SMO) at Sample_Managment@lanl.gov and request assistance with sampling and analysis of the material.

If the following occurs, the material is appropriate for acceptance at the TA-16 Stockpile Area and may be reused within WFO-FOD as clean fill.

- Evaluation of the material is approved per Attachment 26.
- If potential pollutants may be present in the material, representative samples will be collected and analyzed for all potential pollutants. If none are present in the material or are present at or below background concentrations.

If it is determined that the material is contaminated, it will be managed as waste in accordance with applicable waste management regulations and P-409. Contact the assigned Waste Management Coordinator for assistance.

NOTE: Clean fill does not include decomposable material such as land clearing wood and other materials.

If a project requires fill or material transfer, and the original Excavation Permit (EXID) does not include it in the scope of work, a separated EXID must be requested. Prior to transfer of material to the TA-16 Stockpile Area, obtain concurrence from the FOD/designee (at the receiving location) in the form of written approval on an EXID. Material moving from any TA within WFO FOD other than TA-16 will require approval on the EXID. Prior to releasing fill material or soil for use outside of the LANL facility boundary, the Project Coordinator, PIC, or FOD/designee will submit to Environmental Protection Division, Waste Management Programs Group (667-6259) documentation establishing that the material or soil is not contaminated and obtain approval or submit a Waste Steam Profile for approval prior to off-site disposition of this material.

Do not abandon excavated material, debris or equipment onsite at LANL because doing so is considered mismanagement and abandonment of waste.

Other Potential Pollutant Sources

The following two areas Solid Waste Management Unit (SWMU) or Consent Order Site 16-003(h) and Area of Concern (AOC) 16-030(d) are located within the boundary of industrial activity for the TA-16 Stockpile Area. Earthen berm (#1600103010002) located south of the stockpile area manages sediment and runoff from the southern portion of the site. Therefore, it is unlikely that SWMU 16-003(h) and AOC 16-030(d) would be impacted by stormwater runoff generated from the site.

- 16-030(d) – Former NPDES-permitted outfall [Environmental Protection Agency (EPA) 05A061] and associated drain line formerly connected to (HE) sump 16-003(h). Decision-level data for SWMU 16-030(d) consists of results from 11 samples collected at 7 locations in 1995 at and down gradient of the AOC 16-030(d) outfall. The 2006 investigation work plan concluded the nature and extent of contamination have not been defined and additional sampling is recommended. Human health and ecological risk assessments have not been conducted since the nature and extent of contamination have not been defined. All detected inorganic chemical concentrations are below residential soil screening levels (SSLs) except chromium, which was detected above the residential SSL in one sample. Numerous organic chemicals were detected in the 1995 samples; nine SVOCs [(polyaromatic hydrocarbons (PAHs)] were detected at concentrations above residential and construction worker SSLs.
- 16-003(h) – Inactive high explosive (HE) sump. Decision-level data for SWMU 16-003(h) consists of results from 11 samples collected at 7 locations in 1995 at the site and downgradient of the AOC 16-030(d) outfall. The 2006 investigation work plan concluded the nature and extent of

contamination have not been defined and additional sampling is recommended. Human health and ecological risk assessments have not been conducted since the nature and extent of contamination have not been defined. All detected inorganic chemical concentrations are below residential SSLs except chromium, which was detected above the residential SSL in one sample. Numerous organic chemicals were detected in the 1995 samples; nine SVOCs (PAHs) were detected at concentrations above residential and construction worker SSLs.

2.2 Spill and Leaks

No spills or leaks have occurred at this location to date. Therefore, there is no information contained in Table 1A below.

Table 1A: Spill and Leak History

Date	Description	Outfall(s) Affected

Table 1B: – Areas Where Spills/Leaks Could Occur

Specific Equipment/Industrial Activity Areas and Location	Outfall Affected
Material Storage Area	078
Pothole Washout Area	N/A

In the event of any future spill or leak at any of the facility areas, a spill report, documenting the occurrence and the nature of the spill or leak, will be completed. The spill report will be filed promptly upon completion and documentation of the spill clean-up, and will be summarized in this section of the SWPPP (see Table 1A above). In addition, spills within MSGP facility boundaries will be entered as conditions requiring corrective action in the MSGP CAR database and will be updated as corrective action occurs, in accordance with EPC-CP-QP-022, *MSGP Corrective Actions*.

The probability of spills or releases at the facility is minimized by the application of good housekeeping procedures and appropriate operational methods. Appropriate response measures for a spill or release of hazardous materials are applied when addressing spills. The specific spill response and cleanup process depends on the nature of the spilled material. Specific spill response and reporting procedures for LANL are listed in Section 3.1.4.

2.3 Unauthorized Non-Stormwater Discharges

NPDES non-stormwater discharges, unpermitted outfalls, or unauthorized discharges associated with the facility are not anticipated. There are no potential sources of non-stormwater discharges (e.g., testing of fire hydrants) identified at the site. The "Certification of No Unauthorized Stormwater Discharges" is located in Attachment 3. This form certifies that the facility and stormwater outfall has been evaluated for the presence of non-stormwater discharges. This form is updated whenever a change in possible non-stormwater discharges is determined**.**

2.4 Salt Storage

No salt storage or piles that contain salt are present at the facility.

2.5 Historical Data Summary

CY 2020

Outfall 078 at the TA-16 Stockpile Area did not flow during 2020. Therefore, there is no historical data to summarize. It was not operational prior to that time.

3.0 STORMWATER CONTROL MEASURES

Control measures at the facility are designed to minimize the potential release of pollutants that could adversely affect water quality. Perimeter sediment controls for material storage consist of earthen berms installed along the northwest and southern portions of the industrial activity area. These berms are strategically located to intercept runoff from the stockpiles and manage sediment and other potential pollutants from potential spills generated from heavy equipment or trucks used to transport, load and unload material. The run-on control at the material storage area consists of a vegetated swale located east of K-Site Road which functions to intercept sheet flow from the paved surface and convey flow to the north, away from the material storage area. Erosion controls for the material storage area include existing vegetation, base course, and pavement that function as stabilization for all surfaces impacted by the TA-16 Stockpile Area activities. Two catchment basins located in the pothole washout area located on the southern perimeter of the industrial activity boundary function to contain, infiltrate and promote evaporation for pothole washout and culvert cleanout water.

3.1 Non-Numeric Technology-Based Effluent Limits

Specific non-numeric technology-based effluent limits for Sector P are identified below.

Good Housekeeping

Refer to Section 3.1.2 below. None of the following occur at this facility.

- Fueling;
- Vehicle and equipment cleaning; or
- Vehicle or equipment maintenance.

Vehicle and Equipment Storage Area

- Only well maintained vehicles and heavy equipment are stored at the TA-60 Stockpile Area. Drip pans are placed under any vehicle/heavy equipment found to be leaking and it is then sent off for maintenance. Any identified spills or leaks are managed in accordance with Section 3.1.4.

Material Storage Area

- Gravel, rock, base course, sand, soil and clean fill are transported, unloaded, staged and loaded in this area. Heavy equipment and trucks are used to facilitate this operation.

Potholing Staging Area

- This area consists of two catchments used to place pothole washout materials. These catchments function to infiltrate and facilitate the evaporation of the pothole washout water. Sediments are removed once the catchments are filled to seventy-five percent capacity. Heavy equipment and trucks are used to facilitate this operation. Sections 3.1.5 and 3.1.6 describe how non-numeric limits area met.

Non-numeric technology-based effluent limits for all industrial sectors are identified in the following subsections.

3.1.1 Minimize Exposure

Control measures at the facility are designed to minimize the potential for spills, releases, exposure of materials, or any other events that could adversely affect the quality of water and sediment that may be transported out of the area by stormwater runoff. Section 3.0 “Stormwater Control Measures” identifies the structural controls specific to the two industrial activity areas at the facility. Spill response to leaks from heavy equipment or vehicles used to transport and load/unload material is described in Section 3.1.4, *Spill Prevention and Response*.

3.1.2 Good Housekeeping

Good housekeeping practices specifically applicable to the prevention of stormwater contamination include the following measures:

- Sweep or vacuum at regular intervals or, alternatively, wash down the area and collect and/or treat, and properly dispose of the washdown water.
- All site areas are walked down during daily operations and quarterly routine facility inspections to ensure that the grounds are kept in an orderly condition. The entire site, including loading/unloading areas, the potholing staging area, and the outfall, are inspected for floatable debris, garbage, waste and all other potential pollutants.

- During loading and unloading operations at the material storage area, all vehicles and equipment are confined to the designated boundary of industrial activity to prevent impact to existing vegetation at the site. Stockpiles are managed by the perimeter earthen berms in order to minimize the potential for off-site sediment migration. Base course stabilization is maintained at all times to minimize the potential for tracking onto K-Site Road. If tracking is observed, sweeping will be performed by close of business that day.

- The potholing staging area catchments are inspected during daily operations and quarterly routine facility inspections to determine whether adequate capacity is available to prevent overflow conditions in the event of a precipitation event. Twenty-five percent of the total catchment capacity will be available at all times to accommodate precipitation and prevent inadvertent discharge of pothole or culvert cleanout water. Inspections are conducted when the catchments are dry to assess sediment accumulation and to determine if sediment removal is required. Base course stabilization along the surfaces of the access road to the catchments is maintained at all times to minimize the potential for tracking onto K-Site Road. If tracking is observed, sweeping will be performed by close of business that day.
- Trucks and heavy equipment used to transport, load, and unload material staged at the material storage area are properly maintained to minimize the potential for leaks. During daily operations and quarterly, inspections are conducted to check for spills or leaks and the facility procedure (WFO-IWD-0016, *Spill Response and Clean Up in Weapons Facilities Operations (WFO) Areas)* is followed if a leak is discovered. Heavy equipment repair and maintenance is never performed at this site.
- Garbage and floatables are routinely picked up by facility personnel. Garbage containers are not staged at this site.

3.1.3 Maintenance

Control measures at the facility are kept in effective operating condition by the implementation of scheduled preventive maintenance, standard operating procedures (SOPs), and engineering guidance. If control measures need to be replaced or repaired to maintain compliance with the 2021 MSGP, corrective action is taken in accordance with the timelines specified in the *Corrective Action and Deadlines* requirements in Section 6.0 of this SWPPP.

Deficient items identified during routine facility inspections, walk-downs, or by any other means of identification, are documented on the routine facility inspection forms and entered into the MSGP CAR database. All reasonable steps are taken immediately to address any identified condition requiring corrective action. The condition requiring corrective action will remain open until proper maintenance or corrective action has been completed. CAR information, along with documentation of maintenance/repair of control measures, is in Attachment 9 of the SWPPP.

NOTE: “All reasonable steps" means that the permittee has responded to the condition(s) triggering the action, such as, cleaning up any exposed material that may be discharged in a storm event (e.g., through sweeping, vacuuming) or making arrangements (i.e., scheduling) for a new stormwater control measure (SCM) to be installed.

Trucks and heavy equipment used to transport, load, and unload material staged at the material storage area are properly maintained to minimize the potential for leaks. During daily operations and quarterly, inspections are conducted to check for leaks and the facility procedure is followed if a leak is discovered.

The pothole washout area catchments are inspected during daily operations and quarterly routine facility inspections to check for adequate capacity to prevent overflow conditions in the event of a precipitation event. Twenty-five percent of the total catchment capacity will be available at times to accommodate precipitation and prevent inadvertent discharge of pothole or culvert clean-out water.

Routine facility inspections are conducted when the catchments are dry to assess sediment accumulation and to determine if sediment removal is required. If sediments/solids/ are removed they are managed, characterized, and disposed of in accordance with the applicable LANL waste management policies and procedures, unless the material can be demonstrated to be free of contamination. If the sediments/solids are free of contamination and other trash, the material may be used as clean fill at WFO FOD (see Section 2.1 and Attachment 26 for additional information regarding the management of clean fill material.

Earthen berms located around the perimeter of the material storage area are inspected during daily operations and quarterly routine facility inspections.

3.1.4 Spill Prevention and Response

Spills, leaks, or other releases are minimized and/or prevented by maintaining heavy equipment and trucks, staged at the material storage area, on a regular basis and inspecting for leaks daily during operations and quarterly during routine facility inspections. The approach to spill cleanup within WFO is provided in Attachment 24. This procedure is for cleanup of spills deemed a non-emergency (or identified as simple spills) by Emergency Management Division-Emergency Response (EMD-ER) and EPC-CP. Spills are categorized as either simple spills or complex spills. Simple spills are defined as ones that do not spread rapidly, do not endanger people or property (except by direct contact), do not endanger the environment, and do not involve fire or an explosive condition or the potential for such. All other spills are identified as complex spills and require assistance from the Emergency Operations Support Center (EOSC). Simple spills are cleaned up by knowledgeable chemical workers (workers with knowledge of the chemical, appropriate training, material and PPE needed to clean the spill). For incidental releases, Micro-Blaze® or dry absorbents can be used and spill clean-up materials are containerized and managed as waste.

All complex/emergency spills or releases are reported to the EOSC by calling 667-2400 and the Facility Duty Officer by dialing pager number 664-2926 and 664-4100 for RCT support (if needed). All spills or releases are reported to EPC-CP by using the spills pager (505) 664-7722. If fire or explosion is present, or if the potential for such exists, the situation is reported by dialing 911 from a non-cellular phone or by activating a fire pull box. In the event of a spill, EMD-ER will coordinate appropriate cleanup procedures and EPC-CP will notify the individuals or organizations responsible for completing spill reports and providing information needed to fulfill regulatory reporting requirements.

Unauthorized releases or discharges within industrial facility boundaries are entered into the MSGP CAR database in accordance with EPC-CP-QP-022, *MSGP Corrective Actions*. In addition, the completion of an Unplanned Release Report is required in the event of a spill. The report is submitted to EPC-CP personnel and handled according to internal spill record keeping procedures. Spills may be “reportable” (requiring external agency notification) depending on the nature of the spilled material and the location of the release. External agency notification may consist of verbal and/or written notification to the National Response Center, Environmental Protection Agency Region VI, or the New Mexico Environment Department (NMED). EMD-ER, the FOD and EPC-CP, in accordance with Laboratory and DOE policies and federal and state regulatory reporting requirements, will make the determination for the type of reporting required. EPC-DO-QP-101, *Environmental Reporting Requirements for Releases or Events* is used for this purpose (see Attachment 21).

Copies of internal spill reports are maintained by the responsible organization and in the EPC-CP database. The EPC-CP procedure for spill reporting and response, EPC-CP-QP-007*, Spill Investigations,* can be found in Attachment 22 of this SWPPP.

3.1.5 Erosion and Sediment Control

Erosion at the site will be controlled through the preservation of existing native vegetation and the installation and maintenance of base course stabilization along access areas and material storage areas where stockpiles are staged. Sediment control perimeter berms and pothole washout and culvert clean out catchments function to retain sediments and prevent off-site sediment migration.

3.1.6 Management of Runoff

Runoff from the site is minimized through preservation of existing vegetation and stabilization measures involving impervious material such as base course. Run-on is minimal at the site as all flows generated from K-Site Road are captured by the vegetated swale located along the western perimeter of the industrial activity boundary. Runoff is managed by perimeter berms located on the southern and northwestern perimeters of the site.

3.1.7 Salt Storage Piles or Piles Containing Salt

No salt storage or piles containing salt are present at the facility.

3.1.8 Dust Generation and Vehicle Tracking of industrial Materials

Dust generation and vehicle tracking are controlled with pavement/base course stabilization, street sweeping and or dust suppression with potable water.

3.2 Numeric Effluent Limitations Based on Effluent Limitations Guidelines

This facility does not meet the industrial category requirements for effluent monitoring as listed in Part 2.1.3 (*Table 2-1 Applicable Effluent Limitation Guidelines*) of the 2021 MSGP. Benchmark monitoring not required.

Part 8 of the 2021 MSGP identifies sector-specific requirements for Sector P – Land Transportation and Warehousing, in addition to the numeric limits outlined in this section. The facility must comply with requirements associated with the primary industrial activities described in Section 1.3 and any co-located industrial activities as defined in Appendix A of the 2021 MSGP. Sector-specific requirements apply only to areas where sector-specific activities occur.

3.3 Water Quality-Based Effluent Limitations and Water Quality Standards

Impaired Receiving Waters/No TMDLs

Impaired waters monitoring is performed annually at the facility as listed in Section 4.7 of this SWPPP. The pollutants monitored can change yearly based on the requirements of the MSGP. The table in Section 4.7 lists the current year monitoring requirements and standards.

Stormwater from the TA-16 Stockpile Area discharges to Assessment Unit NM-126.A_01, Canon de Valle (within LANL) Below LANL Gage E256. This reach of Canon de Valle has been identified as an impaired water for Adjusted Gross Alpha by the NMED Surface Water Quality Bureau (SWQB) per the 2020-2022 State of NM Clean Water Act 303d/305b Integrated Report and Final List. EPA has not yet approved or established TMDLs for Canon de Valle. Sections 3.1.5 and 3.1.6 describe controls measures used to ensure discharges from industrial activities meet the water quality standards. Refer to Section 4.7 for specific actions that will be taken when a water quality standard is exceeded.

4.0 SCHEDULES AND PROCEDURES

Preventative maintenance of control measures used to comply with non-numeric effluent limits can avoid situations that result in discharges to the environment. Part 6.2.5 of the 2021 MSGP specifies control measures will have a schedule or frequency for maintenance and procedures specifying how maintenance is conducted. Part 6.5 requires documentation of maintenance and repairs including the date(s) of regular maintenance. See Attachment 10 for the Scheduled Maintenance Log.

4.1 Good Housekeeping

See Section 3.1.2 of this SWPPP.

4.2 Maintenance

See Section 3.1.3 of this SWPPP.

4.3 Spill Prevention and Response

See Section 3.1.4 of this SWPPP. All referenced procedures are provided in Attachments 21 and 22 of this SWPPP.

4.4 Erosion and Sediment Control

See Section 3.1.5 of this SWPPP.

4.5 Employee Training

Employee training is essential for effective implementation of the SWPPP and MSGP requirements. The goals for the training program are to ensure that employees: (1) are aware of what happens when pollutants come in contact with stormwater; (2) are familiar with and will implement the requirements of this SWPPP; (3) are capable of preventing spills; (4) respond safely and effectively to an accident when one occurs; (5) recognize when there is an issue with a control measure; (6) recognize when additional control measures are necessary; and (7) identify situations that could lead to stormwater contamination.

Per Part 2.1.2.8 of the 2021 MSGP, training relevant to the SWPPP and MSGP is required for all workers at the facility that work in areas where industrial materials or activities are exposed to stormwater (MSGP sites); workers, managers, and supervisors who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel); and all

members of the PPT. Training is designed to ensure these personnel understand the MSGP and SWPPP requirements, as well as their specific responsibilities regarding these requirements.

Training provided and assigned to these personnel cover both the specific control measures used at the facility; along with monitoring, inspection, planning, reporting, and documentation requirements described in this SWPPP. Training will be conducted at least annually. The DEP, Deployed Environment Safety and Health (DESH) Group Leader and PPT members are responsible for ensuring all appropriate personnel receive this training.

Training activities are documented in accordance with LANL's Training Standards. In cases where training is formalized enough to require specific curricula and reoccurrence, the training activity will be recorded in LANL's official U-TRAIN database. Informal briefings, such as those included in-group safety meetings are not typically recorded in U-TRAIN. Sign-in sheets are used to document attendance and are considered official use only (OUO). All training records are managed in accordance with P204-1, *Controlled Unclassified Information*.

The topics in this SWPPP that are covered in the latest version of the facility-specific annual MSGP training (see Attachment 11) include the following:

- Overview of the SWPPP contents;
- Spill response and cleanup procedures, good housekeeping, maintenance requirements, and material management practices to prevent stormwater pollution;
- The location of all controls on the site required by this permit and how they are 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.

4.6 Routine Facility Inspections and Quarterly Visual Assessments

Routine inspections at this facility are conducted and documented quarterly in accordance with EPC-CP-QP-023*, MSGP Routine Facility Inspections* (Attachment 16).
Visual assessments are conducted in accordance with EPC-CP-QP-064*, MSGP Stormwater Visual Assessments* (Attachment 18).

4.6.1 Routine Facility Inspections

At least once each calendar year, the routine facility inspection is conducted during a period when a stormwater discharge is occurring. A qualified member of the PPT (typically the DEP, a representative from the EPC-CP Storm Water Permitting/Compliance Team or EPC-CP Program Lead) performs the inspection. The 2021 MSGP consolidates the different and separate documentation requirements in the Comprehensive Site Inspection Procedures and Routine Facility Inspection Procedures from the 2008 MSGP. EPC-CP will perform at least one routine facility inspection per year.
Routine inspections will evaluate the following areas, at a minimum:

- Areas where industrial materials or activities are exposed to stormwater;
- Areas identified in the SWPPP and those that are potential pollutant sources;
- Areas where spills and leaks have occurred in the last three years;

- Discharge points(outfalls/ SIDPs; and
- Control measures used to comply with the effluent limits contained in this permit.

Specific areas of the facility to be inspected are described in Section 2.1.
During routine inspections, the following must be evaluated:

- 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; and
- Control measures needing maintenance, repairs or replacement.

Inspections performed by the PPT member are documented by completing the routine facility inspection form, which identifies all conditions requiring corrective action and other potential stormwater pollution issues that were encountered. All conditions requiring corrective actions identified during the inspection are addressed in accordance with Section 6.0 *Corrective Actions and Deadlines* of this plan. Facility personnel or the DEP may also perform daily, weekly, or other periodic facility surveys (walk downs) between quarterly routine facility inspections to ensure compliance with the SWPPP and MSGP. Completed routine facility inspection forms are provided in Attachment 7 of this SWPPP and meet the requirements listed in the 2021 MSGP (Part 3.1.2.).

4.6.2 Quarterly Visual Assessments

Once each quarter, (January-March, April-June, July-September, October-December) a stormwater sample is obtained and visual assessment performed at each outfall, if a measureable storm event occurred. A qualified member of the PPT (DEP, EPC-CP Storm Water Permitting/Compliance team member or MSGP Program Lead) conducts the visual assessment. The visual assessment will be:

- Of a sample in a clean, clear 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 or as soon as practicable thereafter. Alternatively, document why it was not possible to collect the sample within the first 30 minutes (i.e. adverse conditions, not enough flow, etc.); and
- Conducted at least 72 hours since the last storm event; or document that the 72-hour period is representative of local storm events during the sampling period.

NOTE: Snowmelt samples need only be collected during a period of measurable discharge.

The visual assessment will inspect 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.

If a visual assessments is not conducted:

- Document rationale if a visual assessment is unable to be collected in a quarter (no precipitation event or adverse conditions, etc.); and

- Perform an additional assessment during the next qualifying storm event if unable to perform in a particular quarter.

Perform one quarterly assessment during snowmelt discharge (taken during a measurable discharge from the site).

For facilities with SIDPs, quarterly visual assessments may be performed at only one of the outfalls, provided that you perform visual inspections on a rotating basis at each SIDP.

The PPT member performing the visual assessment documents potential stormwater pollution problems that were observed during the assessment on the quarterly visual assessment form. Any conditions requiring corrective action identified during the assessment is addressed in accordance with Section 6.0 *Corrective Actions and Deadlines* of this plan. Completed quarterly visual assessments are provided in Attachment 8 of this SWPPP and meet the requirements listed in the 2021 MSGP (Part 3.2.2).

4.7 Monitoring

Analytical monitoring comprised of Impaired Waters monitoring is performed annually on stormwater discharges from the site. Pre- and polyfluoroalkyl substance (PFAS) monitoring will occur annually unless it is not detected or is detected below the PFAS screening level for New Mexico. If either of these scenarios occur, PFAS monitoring will cease. Indicator parameters are monitored quarterly. Monitoring occurs when storm events result in an actual discharge from the site and follow the preceding measurable storm event by at least 72 hours (3 days), unless documented that the storm event is representative of local storm events during the sampling period. For runoff from snowmelt, the monitoring is performed at a time when a measurable discharge from the site occurs.

Monitoring is conducted according to test procedures approved under 40 CFR Part 136. Runoff samples are collected by taking a minimum of one grab sample from a discharge, collected within the first 30 minutes of 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 is collected as soon as practicable after the first 30 minutes and documentation is kept with the SWPPP explaining why it was not possible.

LANL is located in a high elevation, semi-arid climate where the majority of rainfall occurs during a period between July and September. Freezing conditions that would prevent runoff from occurring for extended periods may also occur during the winter months. If adverse weather conditions prevent the collection of a sample according to the relevant monitoring schedule, a sample will be collected during the next qualifying storm event or as soon as practicable.

Monitoring occurs at automated sampling station **MSGP07801** as identified in Section 1.4. Discharge from the facility is east to Canon de Valle (impaired waters), which is a tributary of the Rio Grande located approximately two miles east of the facility.

For impaired waters pollutants, monitoring is required annually in the first and fourth year of permit coverage. If any pollutant associated with the impairment is detected, annual monitoring will continue. If the impaired water constituent value exceeds the New Mexico Water Quality criterion, the Pollution Prevention Team will:

- Review the selection, design, installation, and implementation of control measures to determine if modifications are necessary to meet the effluent limits;
- Implement the necessary modifications within the timeframe specified for corrective action; and
- Continue annual monitoring of the constituent (as required by Part 4.2.5 of the 2021 MSGP).

For each monitoring event, except snowmelt monitoring, the following information is recorded and maintained through work orders, LANL database systems, and Discharge Monitoring Records:

- The date, exact place, and time of sampling or measurements;
- The date and duration (in hours) of the rainfall event;
- Rainfall total (in inches) for that rainfall event;
- The individual(s) who performed the sampling or measurements;
- The date(s) analyses were performed;
- The individual(s) who performed the analyses;
- The analytical techniques or methods used; and
- The results of such analyses.

All records of monitoring information, including all calibration and maintenance records are maintained for a minimum period of at least three years from the date the permit expires.
LANL's applicable stormwater monitoring procedures can be found in the following Attachments:

- EPC-CP-QP-2103, *Inspecting ISCO Stormwater Runoff Samplers and Retrieving Samples* (Attachment 19)
- EPC-CP-QP-048, *Processing MSGP Stormwater Samples* (Attachment 20).

The table on the following page lists the current Summary of Monitoring Requirements. The monitoring values have been modified to reflect New Mexico water quality standards and are based on the most protective water quality standards from the Standards for Interstate and Intrastate Surface Waters (effective on February 28, 2018), 20.6.4.900 NMAC; and as set forth in Part 9.6.2.1 of the 2021 MSGP.

Outfall: 078

Monitoring Requirement	Industrial Sector	Assessment Unit	Analyte	Filtered/ Unfiltered	Regulatory Standard	Units	Regulatory Standard Type	Regulatory Standard Reference
Impaired Waters	-	NM-128.A_01	Adjusted Gross Alpha	UF	RO	pCi/L	-	-
Annual	-	-	PFOA+ PFOS	-	0.07	ug/L	-	-
Indicator Parameters	P	COD, TSS, and pH						
Quarterly Benchmark	P	No Benchmark Monitoring Required						

NM=New Mexico
UF=Unfiltered
RO-Report Only
pCi=Picocurie
L=Liter
PFOA=Perfluorooctanoic Acid
PFOS=Perfluorooctane Sulfonate
COD=Chemical Oxygen Demand
TSS=Total Suspended Solids

5.0 DOCUMENTATION FOR ELIGIBILITY CONSIDERATIONS UNDER OTHER FEDERAL LAWS

5.1 Endangered Species

The Final Site-Wide Environmental Impact Statement (EIS) for the Operation of Los Alamos National Laboratory (DOE/EIS-0380) was issued in May 2008, and a Record of Decision in September 2008. Stormwater issues and associated pollution prevention requirements and activities at LANL are analyzed in Chapters 4 and 5 of the 2008 Site-Wide EIS. These activities are integrated into environmental reviews on a project-specific level through LANL's Integrated Review Tool (IRT), which incorporates both the Excavation Permit (EX-ID) and Permit Requirements Identification (PR-ID) process. Stormwater issues are identified and pollution prevention activities are implemented during the design and construction phases of all LANL projects, and as part of facility operations, including routine maintenance. LANL staff monitors stormwater pollution prevention compliance at MSGP sites in accordance with Section 4.7 *Monitoring* of this plan. Corrective actions are taken as necessary as described in Section 6.0 *Corrective Actions and Deadlines* of this plan.

Part2.3 of the 2021 MSGP requires areas of designated critical habitat for endangered or threatened species, as applicable, be included in the SWPPP. The *Threatened and Endangered Species Habitat Management Plan for Los Alamos National Laboratory* (LA-UR-17-29454) was last updated in October 2017 (see Attachment 13). This document provides a management strategy for the protection of threatened and endangered species and their habitats on LANL property. The MSGP IPaC Trust Resource Report (see Attachment 14) is also attached for informational purposes.

5.2 Historic Properties

In April 2021, August, 2015, and December 2008, the Cultural Resources Team (using Global Positioning System 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 2021 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-09-0214 Metals Fabrication Shop
- TA-3-38 Metal Fabrication Shop
- TA-16 Stockpile Area
- 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

6.0 CORRECTIVE ACTIONS AND DEADLINES

When any of the following conditions occur or are detected during an inspection, Level 1, 2, or 3 additional implementation measures (AIM) monitoring or any other means, this SWPPP (e.g., sources of pollution; spill and leak procedures; non-stormwater discharges; the selection, design, installation and implementation of control measures) is reviewed and revised (as appropriate).

- 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 the facility;
- A discharge violates a numeric effluent limit;
- Stormwater control measures are not stringent enough for stormwater discharge to be controlled as necessary such that the receiving water of the United States will meet applicable water quality standards or to meet the non-numeric effluent limits in the permit;
- An inspection identifies that a required control measure was never installed, was installed incorrectly or is not being properly operated or maintained; or
- Whenever a visual assessment shows evidence of stormwater pollution.

The purpose is to ensure effluent limits of the 2021 MSGP permit are met and pollutant discharges are minimized.

When any of the following conditions occur, a review of the selection, design, installation, and implementation of control measures is performed to determine if modifications are necessary to meet the effluent limits in this permit:

- Construction or a change in design, operation, or maintenance at the facility significantly changes the nature of pollutants discharged in stormwater from the facility, or significantly increases the quantity of pollutants discharged; or
- If an impaired water constituent exceeds the NM Water Quality criterion (see Section 4.7).

If any of the AIM triggering events (i.e., an annual average exceeds an applicable benchmark threshold) in Parts 5.2.3, 5.2.4, or 5.2.5 occur, PPT members must follow the response procedures described in those parts. An annual average exceedance for a benchmark parameter can occur if:

1) The four-quarter annual average for a parameter exceeds the benchmark threshold, or

2) Fewer than four quarterly samples are collected, but a single sample or the sum of any sample results within the sampling year exceeds the benchmark threshold by more than four times for a parameter.

There are three AIM levels: AIM Level 1, Level 2, and Level 3. PPT members must respond, as required, to different AIM levels which prescribe sequential and increasingly robust responses when a benchmark exceedance occurs. The corresponding AIM level responses and deadlines described in Parts 5.2.3.1, 5.2.3.2, 5.2.4.1, 5.2.4.2, 5.2.5.1 and 5.2.5.2 must be followed unless the facility qualifies for an exception under Part 5.2.6."

When the review identifies the need to modify the SWPPP, it will be revised within 14 calendar days of completion of the associated condition requiring corrective action.

6.1 Immediate Actions

When a condition requiring corrective action is identified, all reasonable steps necessary to minimize or prevent the discharge of pollutants are immediately taken (i.e. spill clean-up, scheduling repairs) until a permanent solution (if needed) can be implemented. Immediate action means all reasonable steps are

taken the same workday or no later than the following workday (when it is too late in the day to take corrective action).

6.2 Subsequent Actions

When additional corrective actions are required (e.g. installing or making operational a new or modified control, completing repairs, ordering BMPs) they will be completed by the next storm event, if possible, or within 14 calendar days (from initial discovery). When it is determined that it is infeasible to complete corrective actions within 14 days, documentation of infeasibility and a schedule for completion of the work is documented in the CAR database, which will be completed no later than 45 days (from initial discovery). When it is determined that corrective actions will exceed 45 days, EPA is notified and provided justification of why actions will exceed the timeframe; and a minimal amount of additional time to complete the work may be approved.

6.3 AIM Baseline Status and Triggering Events

Once the facility is authorized to discharge under the MSGP, it is considered to be in a baseline status for all applicable benchmark parameters required by that facility to be monitored. If an AIM triggering event occurs, the facility may return directly to baseline status once the corresponding AIM-level response and conditions are met.

6.3.1 AIM Level 1

When an annual average exceeds an applicable benchmark threshold, the PPT must immediately review the MSGP SWPPP and the selection, design, installation, and implementation of stormwater control measures to ensure the effectiveness of existing measures and determine if modifications are nesessary to meet the benchmark threshold for the parameter that exceeded.

NOTE: An AIM triggering event is outfall and parameter specific.

After reviewing the SWPPP, additional measures, considering good engineering practices, will be implemented, that will reasonably be expected to bring the exceedance below the parameter's benchmark threshold.

NOTE: If it is determined that nothing further is required to bring the exceedance below the parameter's benchmark threshold for the next 12-month period, document this in the MSGP CAR database.

All modifications and additional control measures required in response to AIM Level 1 will be implemented within 14 days of identification of an AIM Level 1 exceedance. If doing so within 14 days is infeasible, documentation is entered into the MSGP CAR database as to why it is infeasible. Completion of the response must occur within 45 days.

NOTE: There is no provision in the 2021 MSGP for exceeding the 45-day time frame for response to AIM Level 1.

An additional four quarters of Benchmark monitoring will occur at the outfall where the parameter exceeded the benchmark threshold for AIM Level 1. This monitoring will begin no later than the next full quarter after all responses and deadlines required by AIM Level 1 have

been completed. After four quarters of monitoring, the parameter will either return to baseline (see Section 6.3) if it does not exceed the same benchmark threshold or, another annual average exceeds the benchmark threshold causing the facility to move to AIM Level 2

6.3.2 AIM Level 2

When a second benchmark threshold exceedance occurs at an outfall, the PPT will review the SWPPP and implement additional pollution prevention/good housekeeping SCMs, (considering good engineering practices), beyond those implemented in response to AIM Level 1.

Additional control measures required in response to AIM Level 2 will be implemented within 14 days of identification of the AIM Level 2 exceedance. If it is feasible to implement a measure, but not within 14 days, facility personnel may take up to 45 days to implement the measure. In this case, documentation will be entered into the MSGP CAR database identifying why it was infeasible to implement the control measure within 14 days. EPA may grant an extension beyond 45 days, based on an appropriate demonstration by the operator.

An additional four quarters of benchmark monitoring will occur at the outfall where the parameter exceeded the benchmark threshold for AIM Level 2. This monitoring will begin no later than the next full quarter after all responses and deadlines required by AIM Level 2 have been completed. After four quarters of monitoring, the parameter will either return to baseline (see Section 6.3) if it does not exceed the same benchmark threshold or, the parameter continues to exceed the benchmark threshold causing the facility to move to AIM Level 3.

6.3.3 AIM Level 3

When a third benchmark threshold exceedance occurs at an outfall, facility personnel will install structural source controls (e.g., permanent controls such as permanent cover, berms, and secondary containment), and/or treatment controls (e.g., sand filters, hydrodynamic separators, oil-water separators, retention ponds, and infiltration structures). The controls, treatment technologies, or treatment train installed will be appropriate for the pollutant that triggered AIM Level 3, will be sufficient to bring the exceedance below the benchmark threshold and, will be more rigorous that the SCMs implemented under AIM Level 2. These controls will be installed for the outfall that exceeded the benchmark threshold and SIDPs, unless monitoring of the SIDPs demonstrates AIM Level 3 requirements are not triggered at those discharge points.

A schedule for installing the structural source and/or treatment stormwater control measures will be identified and documented in the MSGP CAR database within 14 days. Control measures in response to AIM Level 3 will be installed within 60 days unless it is not feasible to install them within 60 days. In this case, up to 90 days can be taken provided justification identifying why it is infeasible to install the measure within 60 days is documented in the MSGP CAR database. EPA may grant an extension beyond 90 days, based on an appropriate demonstration by the operator.

An additional four quarters of benchmark monitoring will occur at the outfall where the parameter exceeded the benchmark threshold for AIM Level 3. This monitoring will begin no later than the next full quarter after all responses and deadlines required by AIM Level 3 have been completed. After four quarters of monitoring, the parameter will either return to baseline (see Section 6.3) if it does not exceed the same benchmark threshold or, the facility will remain in AIM Level 3 and EPA may require the facility to apply for an individual permit.

6.3.4 AIM Exceptions

Any AIM Level exceedance may qualify for an exception from specific AIM requirements and continued benchmark monitoring after four quarters of monitoring, provided the requirements to demonstrate qualification of the exception are followed (see Parts 5.2.6.1 through 5.2.6.5 of the permit). These exceptions include the following for benchmark exceedances:

1) Solely attributable to natural background pollutant levels;

2) Due to run-on;

3) Due to an abnormal event;

4) Demonstrated to not result in an exceedance of facility-specific value using the national recommended water quality criteria in-lieu of the applicable MSGP benchmark threshold (for aluminum and copper benchmark parameters only); or

5) Demonstrated to not result in any exceedance of water quality standards.

NOTE: There are very specific and complicated documentation requirements and time frames that have to be met to qualify for any of these exceptions. Therefore, any demonstration to qualify for an exception will be coordinated through a representative of the EPC-CP Storm Water Permitting/Compliance Team.

6.4 Corrective Action and AIM Documentation

Upon discovery, conditions requiring corrective action are documented by the DEP or EPC-CP on a Routine Facility Inspection Form and/or entered into the CAR database. The action will be kept open in the database until the issue has been resolved. Documentation of maintenance and repairs of SCMs are kept in Attachment 10 of this SWPPP. Where corrective actions result in changes to procedures or controls documented in this SWPPP, modifications to the SWPPP are made accordingly within 14 calendar days of completing the corrective action(s). LANL procedure EPC-CP-QP-022, *MSGP Corrective Actions* can be found in Attachment 17.

Any AIM Level triggering event will conform to the requirements and time frames provided in Sections 6.3 and 6.3.1 through 6.3.4.

7.0 ACRONYMS

AIM	Additional Implementation Measures
BMP	Best Management Practice
CAR	Corrective Action Report
DEP	Deployed Environmental Professional
DESH	Deployed Environmental Safety and Health
DOE	Department of Energy
EIS	Environmental Impact Statement
ELG	Effluent Limitation Guidelines
EMD-ER	Emergency Management Division-Emergency Response
EOSC	Emergency Operations Support Center
EPA	Environmental Protection Agency
EPC-CP	Environmental Protection and Compliance – Compliance Programs
FOD	Facility Operations Division
IPaC	Information for Planning and Consultation
MRF	Material Recycling Facility
LANL or the Laboratory	Los Alamos National Laboratory
MSGP or Permit	Multi-Sector General Permit
LOG-HERG	Logistics-Heavy Equipment Roads and Grounds
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
OUO	Official Use Only
PAH	Polyaromatic Hydrocarbons
PPT	Pollution Prevention Team
SCM	Stormwater Control Measure
SIDP	Substantially Identical Discharge Points
SWPPP	Stormwater Pollution Prevention Plan
URL	Uniform Resource Locator
WFO	Weapons Facilities Operations

8.0 SWPPP CERTIFICATION

STORMWATER POLLUTION PREVENTION PLAN
TA-16 Stockpile Area
Los Alamos National Laboratory

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.

Signature John Branch Date 5/20/2021

John Branch
Operations Manager, High Explosives/Weapons Facilities (WFO-HE)
Weapons Facilities Operations

FIGURE A: GENERAL LOCATION MAP

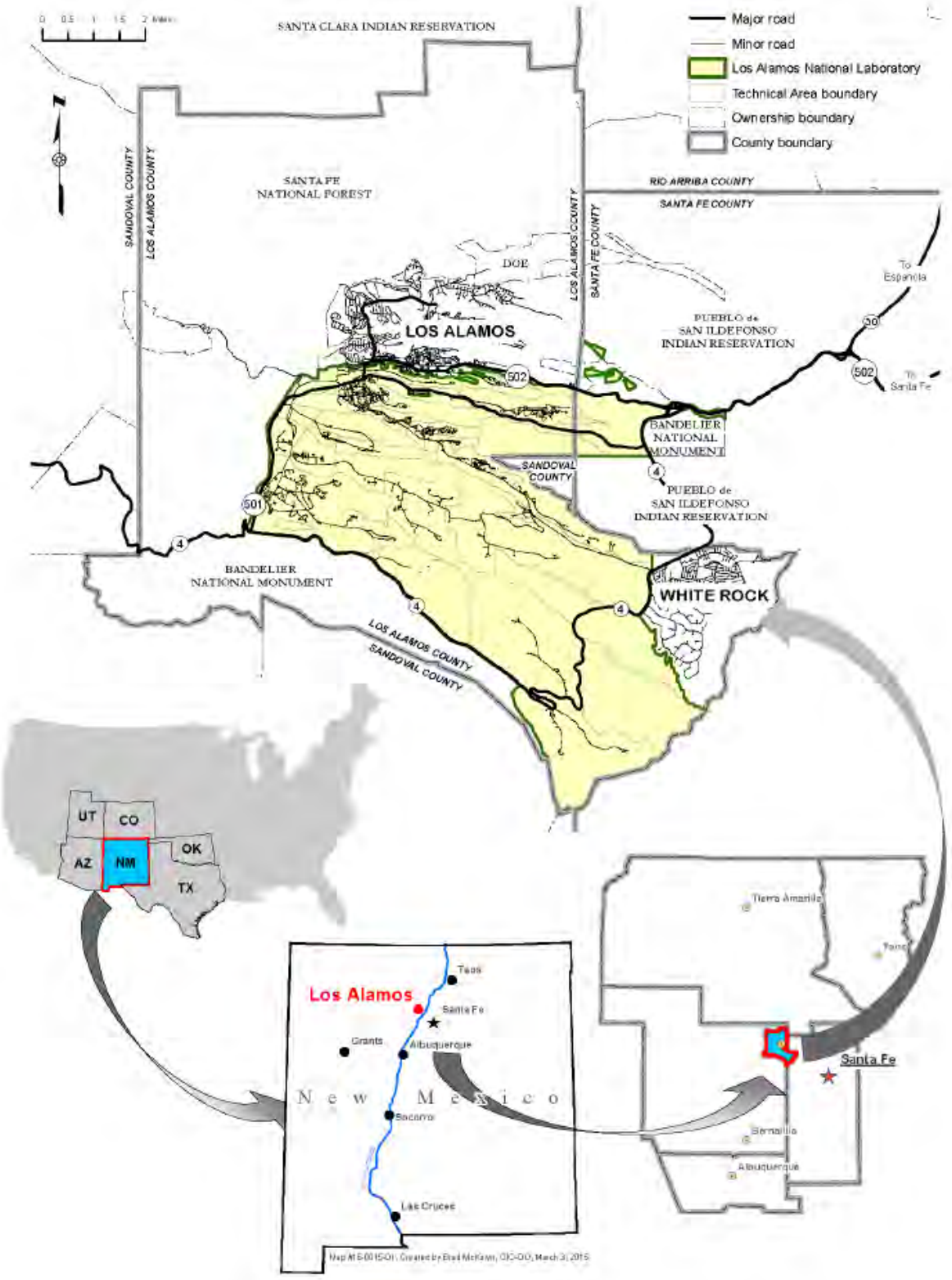

SANTA CLARA INDIAN RESERVATION
Major road
Minor road
Los Alamos National Laboratory
Technical Area boundary
Ownership boundary
County boundary
SANTA FE NATIONAL FOREST
SANDOVAL COUNTY
LOS ALAMOS COUNTY
RIO ARRIBA COUNTY
SANTA FE COUNTY
DOE
LOS ALAMOS
PUEBLO de SAN ILDEFONSO INDIAN RESERVATION
To Española
To Santa Fe
BANDELIER NATIONAL MONUMENT
WHITE ROCK
UT
CO
AZ
NM
OK
TX
Los Alamos
Santa Fe
Taos
Grants
Albuquerque
Socorro
Las Cruces
New Mexico
Tierra Amarilla
Española
Santa Fe
Bernalillo
Albuquerque

FIGURE B-1: FACILITY SITE MAP

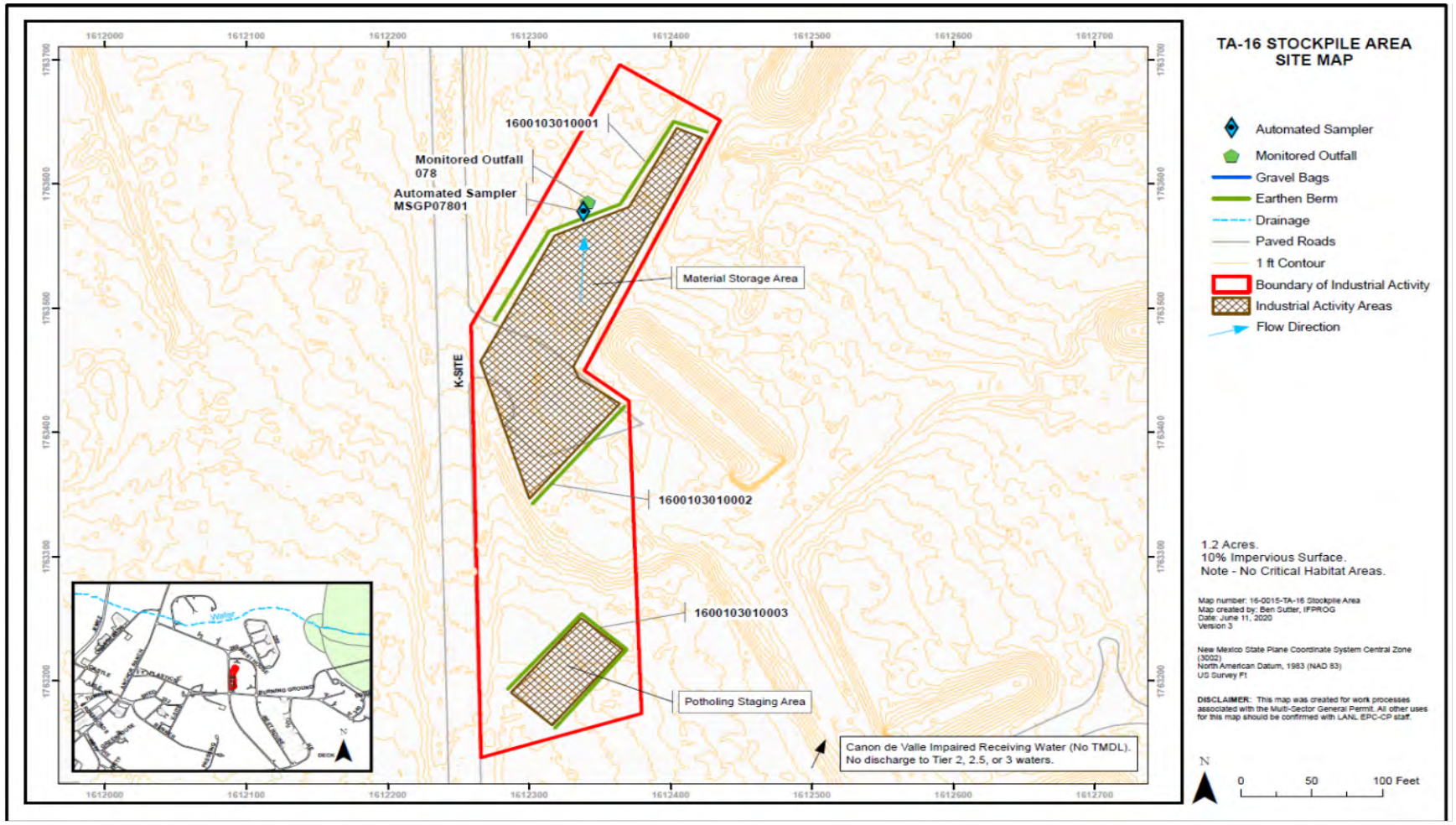


FIGURE B-2: NEARBY RECEIVING WATERS MAP

FIGURE B-3: LANL ENDANGERED SPECIES MAP

Endangered Species Habitat Within Los Alamos National Laboratory

SANTA FE NATIONAL FOREST

LOS ALAMOS TOWNSITE

PUEBLO de SAN ILDEFONSO

BANDELIER NATIONAL MONUMENT

WHITE ROCK

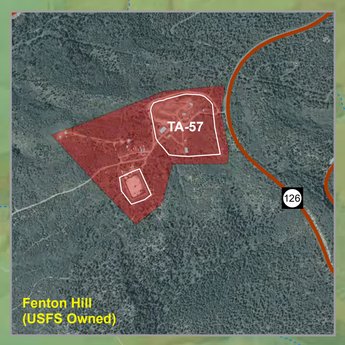
TA-43 TA-41 TA-02 TA-21 TA-73 TA-74 TA-61 TA-53 TA-60 TA-59 TA-48 TA-64 TA-62 TA-03 TA-58 TA-69 TA-06 TA-22 TA-08 TA-09 TA-35 TA-05 TA-55 TA-50 TA-52 TA-63 TA-40 TA-66 TA-67 TA-14 TA-46 TA-51 TA-18 TA-16 TA-15 TA-36 TA-11 TA-28 TA-37 TA-54 TA-49 TA-68 TA-71 TA-39 TA-72 TA-70 TA-33

Los Alamos Canyon
Two-Mile Canyon
Upper Two-Mile Canyon
Sandia Canyon
Mortandad Canyon
Stamers Gulch
Bulldog Gulch
Pajarito Canyon
Three-Mile Canyon
Cañon de Valle
Water Canyon
Potrillo Canyon
Canada del Buey
Fence Canyon
Indio Canyon
North Ancho Canyon
Ancho Canyon
Chaquehui Canyon
Rio Grande

EAST JEMEZ ROAD
PAJARITO ROAD

501 502 4 126

To Fenton Hill



Legend

- Structures
- Land ownership
- LANL Boundary
- Technical Areas
- Major roads
- Paved Roads
- Drainages

Mexican Spotted Owl
HABITAT
- Buffer
- Core

Jemez Mountains Salamander
HABITAT
- Buffer
- Core

Southwestern Willow Flycatcher
HABITAT
- Buffer
- Core

Elevation (ft)
- 5,331 - 5,500
- 5,501 - 5,750
- 5,751 - 6,000
- 6,001 - 6,250
- 6,251 - 6,500
- 6,501 - 6,750
- 6,751 - 7,000
- 7,001 - 7,250
- 7,251 - 7,500
- 7,501 - 7,750
- 7,751 - 8,000

Elevations outside LANL boundary are shown in muted colors.

N W E S

0 0.25 0.5 1 Miles
0 0.5 1 2 Kilometers

PROJECTION: New Mexico State Plane Coordinates, Central Zone, North America Datum 1983, Units Feet.

Disclaimer: This map was created as an overview map of endangered species habitat at LANL. All other uses for this map should be confirmed with the Environmental Stewardship Services Group.

Map Produced by OIO-DO-GIS Team
Date: February 21, 2014.
Map Document Reference: X:\Projects\14-Projects\14-0020\14-0020

ATTACHMENT 1: NOTICE OF INTENT, SUPPORTING DOCUMENTATION, AND UPDATES

ATTACHMENT 2: SWPPP AMENDMENTS

Date	Plan Section	Reason for Amendment	Amendment
Jan 2019	All	MSGP Plan for new industrial facility at TA-16.	New MSGP Plan for Triad, LLC regarding the TA-16 Stockpile Area.
May 2021	All	The 2021 MSGP was published on January 15, 2021, and became effective on March 1, 2021. The new permit requires a SWPPP update.	Plan was revised to reflect new permit requirements."

ATTACHMENT 3: CERTIFICATION OF NO UNAUTHORIZED STORMWATER DISCHARGES

Unauthorized Non-Storm Water Discharge Assessment and Certification

Facility:	TA-16 Stockpile Area		
Outfalls (including SIOs*) or Other Onsite Drainage Points Observed During the Assessment	**Identified Potential Sources of Unauthorized Non-Storm Water Discharge (if applicable)**	**Description of Assessment Criterion Used**	**Describe any Required Actions to Control or Eliminate the Discharge**
078	None	Visual evluation	None

Assessor:

Print Name:	Signature:	Title:	Date Assessed:
Kelkenny Bileen	Kelkenny Bileen Digitally signed by Kelkenny Bileen DN: cn=Kelkenny Bileen, o=Environmental Compliance Program, ou=EPC-CP, email=kbileen@lanl.gov, c=US Date: 2021.05.14 07:43:01 -06'00'	Deployed Environmental Professional	05/14/2021

Authorized Signatory: 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 contained therein. Based on my inquiry of the person or persons who manage the system, or those 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.

Print Name:	Signature:	Title:	Date Certified:
John Branch	JOHN BRANCH (Affiliate) Digitally signed by JOHN BRANCH (Affiliate) Date: 2021.05.14 07:59:48 -06'00'	WFO HE Ops Manager	05/14/2021

*SIO = Substantially Identical Outfall

ATTACHMENT 4: DULY AUTHORIZED SIGNATORY MEMORANDUM

Los Alamos
NATIONAL LABORATORY
EST.1943

Environmental Protection & Compliance Division
Los Alamos National Laboratory
PO Box 1663, K490
Los Alamos, NM 87545
505-667-0666

Symbol: EPC-DO: 18-453
LAUR: 18-31574
Date: DEC 1 1 2018

Ms. Anne L. Idsal, Regional Administrator
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Mail Code: 6RA
Dallas, TX 75202-2733

Subject: Notification of Triad National Security, LLC, Signatory Officials and Authorized Representatives for NPDES Permits

Dear Ms. Idsal:

The purpose of this letter is to provide an update to the U. S. Environmental Protection Agency (EPA) Region 6 on the Triad National Security, LLC delegation of authority for signature of documents associated with the various Los Alamos National Laboratory (LANL) NPDES Permits, pursuant to 40 CFR 122.22(c). This letter supersedes and replaces the signatory authority letter dated March 14, 2018 (ADESH: 18-017).

The positions of Associate Laboratory Director of Environment, Safety, Health & Quality and Safeguards & Security (ESHQSS), and Division Leader of the Environmental Protection & Compliance Division (EPC-DO) are identified as Triad's primary signatory officials under 40 CFR 122.22(a) for certifying and signing permit applications (including Notice of Intents (NOIs)) required under the LANL NPDES Industrial Point Source Outfall Permit (Permit No. NM0028355), the NPDES Storm Water Construction General Permit, the NPDES Multi-Sector General Permit (Permit No. NMR050013), and the NPDES Pesticide General Permit (Permit No. NMG87B113).

The following positions are hereby designated as authorized representatives under 40 CFR 122.22(b) to sign reports, Storm Water Pollution Prevention Plans, Discharge Monitoring Reports, Pesticide Discharge Management Plans, and any other compliance documentation required by the permits:

NPDES Industrial Point Source Outfall Permit (No. NM0028355)

- Positions listed as primary signatory officials above.
- Group Leader or Team Leaders within the Environmental Compliance Programs Group.
- Responsible Facility Operations Director (FOD).

NPDES Construction General Permit:

- Positions listed as primary signatory officials above.
- Group Leader or Team Leaders within the Environmental Compliance Programs Group.
- Cognizant Project Manager, Construction Manager, or Subcontractor Technical Representative for the regulated construction activity.

NPDES Multi-Sector General Permit (ID No. NMR053195)

- Positions listed as primary signatory officials above.
- Group Leader or Team Leaders within the 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, Operations Manager; or Deployed Environment, Safety, & Health Manager responsible for the overall operation of the regulated facility or activity.

NPDES Pesticide General Permit (No. NM687A041)

- Positions listed as primary signatory officials above.
- Group Leader or Team Leaders within the Environmental Compliance Programs Group.

If you have questions, please contact me at (505) 667-7269 or at etorres@lanl.gov.

Sincerely,

Enrique Torres
Division Leader
Environmental Protection & Compliance Division

ET/TWL/MTS:jdm

Attachment(s): None.

Copy: Nancy Williams, USEPA, Region 6, williams.nancy@epa.gov, (E-File)
Brent E. Larsen, USEPA, Region 6, Larsen.brent@epa.gov, (E-File)
Robert Houston, USEPA, Region 6, Houston.robert@epa.gov, (E-File)
Sarah Holcomb, NMED, sarah.holcomb@state.nm.us, (E-File)
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epc-correspondence@lanl.gov, (E-File)
adesh-records@lanl.gov, (E-File)

ATTACHMENT 5: DISCHARGE MONITORING REPORTS

ATTACHMENT 6: ANNUAL REPORTS

ATTACHMENT 7: ROUTINE FACILITY INSPECTIONS

ATTACHMENT 8: QUARTERLY VISUAL ASSESSMENTS

ATTACHMENT 9: CORRECTIVE ACTION DOCUMENTATION AND CERTIFICATION

ATTACHMENT 10: SCHEDULED MAINTENANCE LOG

Date	**Control Measure or Equipment Description** (include location where appropriate)	**Action Taken/Comments**	**Action Taken By** (printed name & Z no.)

ATTACHMENT 11: TRAINING DOCUMENTATION

Information on employess receiving training is available upon request.

MSGP Training Overview

Presented by the EPC-CP Stormwater Permitting/Compliance Team

April 2020

"GOSH, TOTO . . . WATER IN OZ MUST REALLY BE POLLUTED!"

What is the MSGP?

- A nation-wide general permit
- Authorizes the discharge of stormwater from specific industrial activities to meet Clean Water Act provisions
  - MSGP contains 30 industrial sectors
- EPA is the regulatory authority
  - NM Environment Department is delegated authority to conduct inspections

MSGP Industrial Sectors Within LANL

- LANL (Triad) has 8 of the 30 industrial sectors
  - Asphalt Paving Manufacturing (*Sector D*)
  - Fabricated Metal Products (*Sector AA*)
  - Primary Metals *(Sector F)*
  - Timber Products (*Sector A*)
  - Scrap Recycling (*Sector N*)
  - Steam Electric Generation (*Sector O*)
  - Land Transportation/Warehousing (*Sector P*)
  - Hazardous Waste Treatment, Storage, or Disposal *(Sector K)*
- *UI FOD has facilities in 6 of these sectors.*

What is the Purpose of the MSGP?

- **Minimize** off-site migration of pollutants!
  - Ensure controls are *always* adequate (not just after identification of condition requiring corrective action or exceedance of permit limit).

What are the Key Elements of the MSGP?

- Storm Water Pollution Prevention Plan (SWPPP)
- Storm Water Sampling
- Analytical Monitoring
- Inspections
- Corrective Actions

Key Elements of the MSGP

- SWPPP
  - Facility-specific document identifying how MSGP requirements will be met at the facility
    - All personnel implementing MSGP requirements must be trained to, and understand it
    - Identifies potential pollutant sources
    - Describes stormwater controls used to reduce/eliminate pollutants in discharges
    - Contains procedures the facility uses to comply with terms/conditions of the permit
    - Identifies the Pollution Prevention Team (PPT)

Pollution Prevention Team

- Typically consists of the FOD/Designee, DESH Group Leader, Operations Manager, DEP, and the MSGP Program Lead
- Provides expertise to evaluate changes to the design of controls and facilitates action to resolve identified issues/conditions *(i.e., Corrective Action)*
- Assists with Stormwater Control Implementation
  - Design, install, and implement control measures (including best management practices) to minimize pollutant discharges and meet effluent limits

Pollution Prevention Team (cont.)

- Stormwater Control Implementation (cont.)
  - Consider the following when selecting and designing control measures
    - Minimizing stormwater contact with potential pollutants
    - Using control measures in combination
    - Assessing the type and quantity of pollutants
    - Minimizing impervious areas and infiltrating runoff onsite
    - Attenuating flow using open vegetated swales and natural depressions
    - Conserving and/or restoring riparian buffers
    - Using treatment interceptors (e.g., vortex separators and sand filters)

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EST. 1943

MSGP Storm Water Sampling

What triggers a sample?

- A measureable storm event
  - One that results in an actual discharge
  - Proceed an event by at least 72-hours
- EPC-CP Database
  - Rainfall Data/Rain gages
  - Flow intensities at facilities

How are samples collected?

- Automated Samplers
  - Avalanche (refrigerated)
  - Model 3700 (filtered)
- Grab Sample

Avalanche Sampler

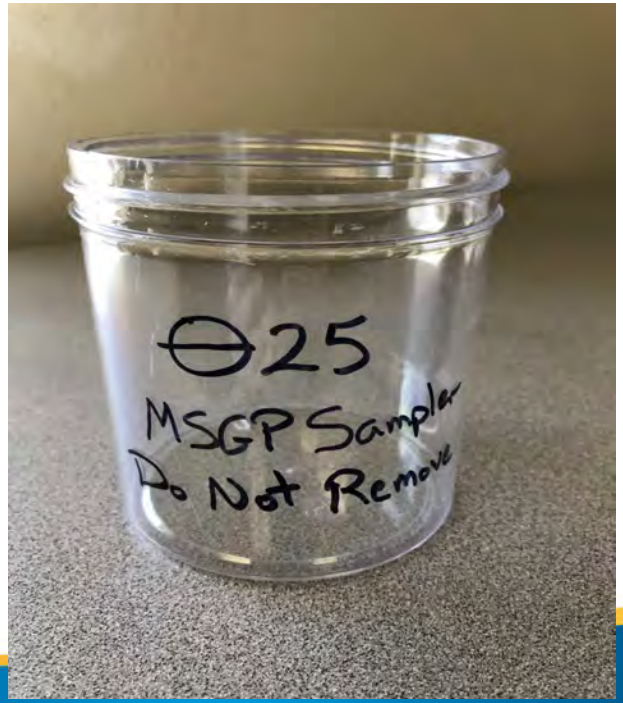
- MSGP requires sample collection to follow 40 CFR Part 136
- Some constituents require refrigeration as preservation within 15 minutes

3700 Sampler

- Other constituents require filtering within 15 minutes

Where are samples collected?

- Monitored Outfalls
  - Automated Samplers
- Substantially Identical Outfalls
  - Other outfalls that discharge substantially identical effluent



What types of samples are collected?

- Samples for analysis of monitored constituents
- Samples for field parameters
  - Visual Assessment
  - pH

Collection and Preservation

- Volume collected are based on 40 CFR 136 and identified in the SAP provided by EPC-CP
- Volumes from samplers are transferred to shipping containers (250mL, 500mL, 1L, etc.)
- Filter samples and add preservatives
- SMO ships to off-site analytical laboratory

Visual Assessments

- Examination includes:
  - Odor
  - Color
  - Clarity
  - Floating solids
  - Settled solids
  - Suspended solids
  - Foam
  - Oil sheen
  - Other obvious indicators of storm water pollution

MSGP Analytical Monitoring

Monitoring Requirements

- **Why?**
  - To demonstrate that pollutants resulting from industrial activity are not being discharged from the site *(or not exceeding numeric limits)*
  - Show effectiveness of stormwater control measures

- **What? Analytical monitoring types**
  - Benchmark
  - Impaired Waters
  - Effluent Limitation Guidelines (ELG)
  - **103 Analytical Samples planned for MY20**

Monitoring Requirements

- **How?**
  - **40 CFR § 136**
    - Defines Clean Water Act analytical methods, sample containers, volumes, preservatives, holding times, and cool samples immediately after collection and store < 6°C (42° F)
  - **Laboratories performing analyses for NPDES certified under**
    - National Environmental Laboratory Accreditation Program (NELAP)
    - DOE Consolidated Audit Program (DOECAP)
  - **20.6.4 NMAC - NM Water Quality Standards**
    - Applies to Impaired Waters and some Benchmark parameters
    - Dissolved metals require 0.45 micron filtration
    - Total recoverable Al requires 10 micron filtration

Monitoring Frequency

- **When?**
- **Monitoring season April 1- Nov 30**
  - **2-month quarters**
  - **Once per Quarter**
    - Benchmark monitoring
  - **Once per Year**
    - Impaired Waters
    - Effluent Limitation Guidelines (ELG)

Benchmarks

Parameters are sector-specific – based on industrial activity

Sector	Industrial Activity	Parameter(s)	Facilities
A	Timber Products	COD, TSS	TA-3-38 Carpenter Shop
AA	Fabricated Metals	Al, Fe, Zn, NO2-+NO3-N	TA-3-38 Metals Fab Shop TA-60-1 Heavy Equipment Yard
D	Asphalt Paving	pH, TSS, Oil and Grease	TA-60 Asphalt Batch Plant
N	Scrap Recycling	N/A for subsector	TA-60 MRF
O	Steam Electric Power	Fe	TA-3-22 Power & Steam Plant
P	Land Transportation/ Warehousing	N/A	TA-16 Stockpile Yard TA-60-1 Heavy Equipment Yard TA-60-2 Warehouse TA-60 Roads and Grounds

New for next permit:

- **Universal benchmarks for <u>all</u> sectors: pH, TSS, COD**
- **Fe dropped from Sector AA, O**
- **Hg and Pb added to Sector P**

Benchmark Limits

Benchmark limits provided in permit

- Superseded by NM WQS if different

Analyte	Field Prep Code	National Benchmark	Chronic Exposure Limit	Acute Exposure Limit	Units	Regulatory Source
Al*	F10U	750	1010	2520	ug/L	20.6.4.900 NMAC Subpart I
COD	UF	120	120	120	mg/L	NMR053195 Sect 9.6.2.1
Fe	UF	1000	1000	1000	ug/L	NMR053195 Sect 9.6.2.1
Hg	UF	1.4	0.77	0.77	ug/L	20.6.4.900 NMAC Subpart J
NO3+NO2-N	UF	0.68	0.68	0.68	mg/L	NMR053195 Sect 9.6.2.1
Pb‡*	UF	210	2	51	ug/L	20.6.4.900 NMAC Subpart I
pH	UF	6-9	6-9	6-9	SU	NMR053195 Sect 9.6.2.1
TSS	UF	100	100	100	mg/L	NMR053195 Sect 9.6.2.1
Zn*‡	F	110	76	101	ug/L	20.6.4.900 NMAC Subpart I

* NM water quality hardness-based values replace Appendix J as benchmarks.

‡ National benchmark applies to total (unfiltered) result; NM water quality benchmark applies to dissolved (filtered) result.

NM WQS more stringent than benchmark

NM WQS is less stringent than benchmark

Data Evaluation - Benchmarks

- Evaluate the average of 4 quarterly results against the benchmark
- Exceedances: triggers corrective action process
  - average of 4 results > benchmark or
  - average of fewer than 4 results is mathematically certain to exceed benchmark
- If average of 4 < benchmark, discontinue monitoring

Benchmark Exceedances

2016-2018 LANS permit data

Permitted Facility	Location ID	Analyte Name	Field Prep Code	QBM Sequence No.	Last Mon Sample Date	Actual Result Average	Minimum Possible Average	Report Units	Analysis Results Count	Maximum Adjusted Result	MSGP QBM Exceedance	MSGP QBM Level
TA-3-38 Metals Fab Shop	MSGP00201	Iron, total	UF	1	06/04/2016	2955.0	1477.5	ug/L	2	3640.0	Predicted	1000.0
TA-3-38 Metals Fab Shop	MSGP00201	Iron, total	UF	2	08/04/2016	4860.0	1215.0	ug/L	1	4860.0	Predicted	1000.0
TA-3-38 Metals Fab Shop	MSGP00201	Iron, total	UF	3	04/04/2017	3914.0	1957.0	ug/L	2	7370.0	Predicted	1000.0
TA-3-38 Metals Fab Shop	MSGP00201	Iron, total	UF	4	10/05/2017	1400.0	1050.0	ug/L	3	1520.0	Predicted	1000.0
TA-3-38 Metals Fab Shop	MSGP00201	Iron, total	UF	5	08/02/2018	771.0	385.5	ug/L	2	1330.0		1000.0
TA-3-38 Metals Fab Shop	MSGP00201	Aluminum, total recoverable	F10u	1	08/04/2016	1604.333	1203.25	ug/L	3	2770.0	Predicted	681.0
TA-3-38 Metals Fab Shop	MSGP00201	Aluminum, total recoverable	F10u	2	10/05/2017	799.75	799.75	ug/L	4	1280.0	True Value	681.0
TA-3-38 Metals Fab Shop	MSGP00201	Aluminum, total recoverable	F10u	3	08/02/2018	896.5	448.25	ug/L	2	1550.0		681.0
TA-3-38 Metals Fab Shop	MSGP00201	Zinc, dissolved	F	1	10/08/2016	140.075	140.075	ug/L	4	324.0	True Value	76.0
TA-3-38 Metals Fab Shop	MSGP00201	Zinc, dissolved	F	2	06/01/2017	194.5	97.25	ug/L	2	250.0	Predicted	76.0
TA-3-38 Metals Fab Shop	MSGP00201	Zinc, dissolved	F	3	07/05/2018	171.933	128.95	ug/L	3	285.0	Predicted	76.0
TA-3-38 Metals Fab Shop	MSGP00201	Zinc, dissolved	F	4	08/02/2018	78.0	19.5	ug/L	1	78.0		76.0
TA-3-39 & 102 Metal Shop	MSGP00401	Iron, total	UF	1	06/27/2016	4105.0	2052.5	ug/L	2	6620.0	Predicted	1000.0
TA-3-39 & 102 Metal Shop	MSGP00401	Iron, total	UF	2	05/09/2017	4035.0	2017.5	ug/L	2	6650.0	Predicted	1000.0
TA-3-39 & 102 Metal Shop	MSGP00401	Nitrate plus Nitrite Nitrogen	UF	1	08/03/2016	1.178	0.883	mg/L	3	2.66	Predicted	0.68
TA-3-39 & 102 Metal Shop	MSGP00401	Nitrate plus Nitrite Nitrogen	UF	2	05/09/2017	0.733	0.183	mg/L	1	0.733		0.68
TA-3-39 & 102 Metal Shop	MSGP00401	Aluminum, total recoverable	F10u	1	04/18/2016	9060.0	2265.0	ug/L	1	9060.0	Predicted	1699.0
TA-3-39 & 102 Metal Shop	MSGP00401	Aluminum, total recoverable	F10u	2	05/09/2017	2822.667	2117.0	ug/L	3	6570.0	Predicted	1699.0
TA-3-39 & 102 Metal Shop	MSGP00401	Zinc, dissolved	F	1	04/01/2017	13.45	13.45	ug/L	4	20.5		101.0
TA-3-22 Power & Steam Plant	MSGP00501	Iron, total	UF	1	07/01/2016	9980.0	2495.0	ug/L	1	9980.0	Predicted	1000.0
TA-3-22 Power & Steam Plant	MSGP00501	Iron, total	UF	2	07/15/2016	4450.0	1112.5	ug/L	1	4450.0	Predicted	1000.0
TA-3-22 Power & Steam Plant	MSGP00501	Iron, total	UF	3	04/04/2017	7566.0	5674.5	ug/L	3	20700.0	Predicted	1000.0
TA-3-22 Power & Steam Plant	MSGP00501	Iron, total	UF	4	08/07/2017	3010.0	1505.0	ug/L	2	3270.0	Predicted	1000.0
TA-3-22 Power & Steam Plant	MSGP00501	Iron, total	UF	5	05/21/2018	4620.0	2310.0	ug/L	2	6410.0	Predicted	1000.0
TA-3-22 Power & Steam Plant	MSGP00501	Iron, total	UF	6	08/03/2018	269.0	134.5	ug/L	2	367.0		1000.0
TA-3-22 Power & Steam Plant	MSGP00901	Iron, total	UF	1	06/07/2016	4015.0	2007.5	ug/L	2	5240.0	Predicted	1000.0
TA-3-22 Power & Steam Plant	MSGP00901	Iron, total	UF	2	04/01/2017	1772.333	1329.25	ug/L	3	3600.0	Predicted	1000.0
TA-3-22 Power & Steam Plant	MSGP00901	Iron, total	UF	3	10/05/2017	1573.333	1180.0	ug/L	3	2390.0	Predicted	1000.0
TA-3-22 Power & Steam Plant	MSGP00901	Iron, total	UF	4	08/03/2018	1082.5	541.25	ug/L	2	1800.0		1000.0
TA-60 Asphalt Batch Plant	MSGP04301	Total Suspended Solids (TSS)	UF	1	10/05/2017	27.4	6.85	mg/L	1	27.4		100.0
TA-3-38 Carpenter Shop	MSGP07302	Chemical Oxygen Demand (COD)	UF	1	07/26/2017	271.75	135.875	mg/L	2	463.0	Predicted	120.0
TA-3-38 Carpenter Shop	MSGP07302	Chemical Oxygen Demand (COD)	UF	2	08/16/2018	101.0	50.5	mg/L	2	202.0		120.0
TA-3-38 Carpenter Shop	MSGP07302	Total Suspended Solids (TSS)	UF	1	08/16/2018	123.683	92.763	mg/L	3	188.0		100.0

New: Additional Implementation Measures – Tiered Corrective Action Levels

based on nature and magnitude of benchmark exceedances

- Tier 1
  a. One Annual Average > benchmark (*same as current permit*)
     - Average of 4 results exceeds benchmark
     - Average of fewer than 4 results is mathematically certain to exceed benchmark
  b. One single result > 4X benchmark
- Tier 2
  a. Two Annual Averages > benchmark
  b. Two single results > 4x benchmark in 2 year period
  c. One single result > 8x benchmark
- Tier 3
  a. Three Annual Averages > benchmark
  b. Three single results > 4x benchmark in 3 year period
  c. Two single results > 8x benchmark in 3 year period
  d. 4 consecutive results are each > benchmark and the average is > 2 times benchmark
- Can discontinue monitoring if the average of 4 results < benchmark
  (does not apply to new Universal benchmarks)

Preview of Corrective Action Status with Tiered Corrective Action Levels

2019 Triad permit data

Permitted Facility	MSGP Station Number	Report Type	Analyte Name	Field Prep Code	QBM Sequence No.	Last Mon Sample Date	Adjusted Result Average	Adjusted Result Minimum Possible Average	Report Units	Analysis Results Count	Minimum Adjusted Result	Maximum Adjusted Result	MSGP QBM Exceedance	MSGP QBM Level	Maximum Adjusted Result > QBM	Tier
TA-3-22 Power & Steam Plant	MSGP00501	MSGP QBM	Iron, total	UF	1	06/15/2019	3783.0	1891.5	ug/L	2	916.0	6650.0	Predicted	1000.0	Y	1b
TA-3-22 Power & Steam Plant	MSGP00501	MSGP QBM	Iron, total	UF	2	08/07/2019	54900.0	13725.0	ug/L	1	54900.0	54900.0	Predicted	1000.0	Y	2c
TA-3-22 Power & Steam Plant	MSGP00501	MSGP QBM	Iron, total	UF	3	10/04/2019	4610.0	1152.5	ug/L	1	4610.0	4610.0	Predicted	1000.0	Y	3b
TA-3-22 Power & Steam Plant	MSGP00901	MSGP QBM	Iron, total	UF	1	04/23/2019	5290.0	1322.5	ug/L	1	5290.0	5290.0	Predicted	1000.0	Y	1b
TA-3-22 Power & Steam Plant	MSGP00901	MSGP QBM	Iron, total	UF	2	08/08/2019	3345.0	1672.5	ug/L	2	3220.0	3470.0	Predicted	1000.0	Y	2b
TA-3-22 Power & Steam Plant	MSGP00901	MSGP QBM	Iron, total	UF	3	10/04/2019	3620.0	905.0	ug/L	1	3620.0	3620.0		1000.0	Y	
TA-3-38 Carpenter Shop	MSGP07401	MSGP QBM	Chemical Oxygen Demand (COD)	UF	1	10/04/2019	54.675	54.675	mg/L	4	0.0	106.0		120.0	N	
TA-3-38 Carpenter Shop	MSGP07401	MSGP QBM	Total Suspended Solids (TSS)	UF	1	10/04/2019	78.55	78.55	mg/L	4	21.2	114.0		100.0	Y	
TA-3-38 Metals Fab Shop	MSGP00201	MSGP QBM	Aluminum, total recoverable	F10u	1	04/22/2019	222.0	55.5	ug/L	1	222.0	222.0		1010.0	N	
TA-3-38 Metals Fab Shop	MSGP00201	MSGP QBM	Iron, total	UF	1	04/22/2019	7550.0	1887.5	ug/L	1	7550.0	7550.0	Predicted	1000.0	Y	1b
TA-3-38 Metals Fab Shop	MSGP00201	MSGP QBM	Nitrate plus Nitrite Nitrogen	UF	1	04/22/2019	1.12	0.28	mg/L	1	1.12	1.12		0.68	Y	
TA-3-38 Metals Fab Shop	MSGP00201	MSGP QBM	Zinc, dissolved	F	1	04/22/2019	387.0	96.75	ug/L	1	387.0	387.0		99.0	Y	
TA-3-38 Metals Fab Shop	MSGP07601	MSGP QBM	Aluminum, total recoverable	F10u	1	10/04/2019	81128.667	60846.5	ug/L	3	896.0	241000.0	Predicted	1010.0	Y	2c
TA-3-38 Metals Fab Shop	MSGP07601	MSGP QBM	Iron, total	UF	1	08/06/2019	2365.0	1182.5	ug/L	2	1390.0	3340.0	Predicted	1000.0	Y	1a
TA-3-38 Metals Fab Shop	MSGP07601	MSGP QBM	Iron, total	UF	2	10/04/2019	7400.0	1850.0	ug/L	1	7400.0	7400.0	Predicted	1000.0	Y	1b
TA-3-38 Metals Fab Shop	MSGP07601	MSGP QBM	Nitrate plus Nitrite Nitrogen	UF	1	10/04/2019	0.656	0.492	mg/L	3	0.393	0.82		0.68	Y	
TA-3-38 Metals Fab Shop	MSGP07601	MSGP QBM	Zinc, dissolved	F	1	10/04/2019	470.333	352.75	ug/L	3	135.0	1110.0	Predicted	99.0	Y	2c
TA-60 Asphalt Batch Plant	MSGP04301	MSGP QBM	Total Suspended Solids (TSS)	UF	1	08/07/2019	101.0	50.5	mg/L	2	61.0	141.0		100.0	Y	
TA-60-1 Heavy Equipment Yard	MSGP02201	MSGP QBM	Aluminum, total recoverable	F10u	1	04/22/2019	14900.0	3725.0	ug/L	1	14900.0	14900.0	Predicted	1010.0	Y	2c
TA-60-1 Heavy Equipment Yard	MSGP02201	MSGP QBM	Aluminum, total recoverable	F10u	2	10/04/2019	1596.667	1197.5	ug/L	3	1430.0	1860.0	Predicted	1010.0	Y	1a
TA-60-1 Heavy Equipment Yard	MSGP02201	MSGP QBM	Iron, total	UF	1	07/02/2019	4910.0	2455.0	ug/L	2	1300.0	8520.0	Predicted	1000.0	Y	2c
TA-60-1 Heavy Equipment Yard	MSGP02201	MSGP QBM	Iron, total	UF	2	10/04/2019	1090.0	545.0	ug/L	2	1080.0	1100.0		1000.0	Y	
TA-60-1 Heavy Equipment Yard	MSGP02201	MSGP QBM	Nitrate plus Nitrite Nitrogen	UF	1	08/06/2019	1.131	0.848	mg/L	3	0.742	1.48	Predicted	0.68	Y	1a
TA-60-1 Heavy Equipment Yard	MSGP02201	MSGP QBM	Nitrate plus Nitrite Nitrogen	UF	2	10/04/2019	0.642	0.161	mg/L	1	0.642	0.642		0.68	N	
TA-60-1 Heavy Equipment Yard	MSGP02201	MSGP QBM	Zinc, dissolved	F	1	04/22/2019	657.0	164.25	ug/L	1	657.0	657.0	Predicted	99.0	Y	1b
TA-60-1 Heavy Equipment Yard	MSGP02201	MSGP QBM	Zinc, dissolved	F	2	10/04/2019	114.533	85.9	ug/L	3	82.6	148.0		99.0	Y	

Tier 1
Tier 2
Tier 3

Impaired Waters

Parameters and limits are receiving-water specific

– CWA 303d/305b Integrated Report is revised by NMED biennially (next revision due late 2020)

Assessment Unit	Description	Parameter(s)	Facility
NM-9000.A_047 (perennial flow - chronic exposure risk)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	Al, Cu, PCBs	TA-3-22 Power & Steam Plant TA-3-38 Carpenter Shop TA-3-38 Metals Fab Shop TA-60 MRF TA-60-1 Heavy Equipment Yard TA-60-2 Warehouse TA-60 Roads and Grounds
NM-9000.A_042 (ephemeral flow – acute exposure risk)	Mortandad Canyon (within LANL)	Cu, Hg, PCBs, Adjusted Gross Alpha	TA-60-Asphalt Batch Plant TA-60 Roads and Grounds
NM-128.A_01 (ephemeral flow - acute exposure risk)	Canon de Valle (below LANL gage E256)	Adjusted Gross Alpha	TA-16 Stockpile Yard

Impaired Waters Limits

20.6.4 NMAC – Water Quality Standards
Limits are risk-based by exposure type

Parameter	Field Prep Code	Chronic Exposure Limit	Acute Exposure Limit	Units	Regulatory Source
Al	F10U	1010	2520	ug/L	20.6.4.900 NMAC Subpart I
Cu	F	7	11	ug/L	20.6.4.900 NMAC Subpart I
Hg	UF	0.77	0.77	ug/L	20.6.4.900 NMAC Subpart J
Pb	F	2	51	ug/L	20.6.4.900 NMAC Subpart I
GROSSA-Adj	UF	15	15	pCi/L	20.6.4.900 NMAC Subpart J
Tot Aroclor	UF	0.2	0.2	ug/L	20.6.4.900 NMAC Subpart J/ 20.6.4.12 Subpart E

Lower WQS limit for chronic exposure
Higher WQS limit for acute exposure

- Any WQS exceedance is a permit violation and triggers the corrective action process
- Current permit – if the parameter is not detected, monitoring may be discontinued
- **New: parameter must not be detected <u>for three consecutive years</u> for monitoring to be discontinued**

Exceedances– Impaired Waters

2019 Triad permit data

Permitted Facility	MSGP Station Number	Report Type	Level Type	Analyte Name	Field Prep Code	Current Mon Status	Last Mon Sample Date	Report Units	Analysis Results Count	Detected Results Count	Minimum Adjusted Result	Maximum Adjusted Result	MSGP I Level	Maximum Adjusted Result > I
TA-3-22 Power & Steam Plant	MSGP00501	MSGP I	NM 2010 Aqu Chronic 80 mg	Aluminum, total recoverable	F10u	Mon	4/22/2019	ug/L	1	1	18300	18300	1010	Y
TA-3-22 Power & Steam Plant	MSGP00501	MSGP I	2007 EPA R6 MQL	Aroclor, total	UF	NMM	4/22/2019	ug/L	1	0	0	0	0.2	N
TA-3-22 Power & Steam Plant	MSGP00501	MSGP I	NM 2010 Aqu Chronic 80 mg	Copper, dissolved	F	Mon	4/22/2019	ug/L	1	1	15.9	15.9	7	Y
TA-3-22 Power & Steam Plant	MSGP00901	MSGP I	NM 2010 Aqu Chronic 80 mg	Aluminum, total recoverable	F10u	Mon	4/23/2019	ug/L	1	1	6550	6550	1010	Y
TA-3-22 Power & Steam Plant	MSGP00901	MSGP I	2007 EPA R6 MQL	Aroclor, total	UF	NMM	4/23/2019	ug/L	1	0	0	0	0.2	N
TA-3-22 Power & Steam Plant	MSGP00901	MSGP I	NM 2010 Aqu Chronic 80 mg	Copper, dissolved	F	Mon	4/23/2019	ug/L	1	1	11.9	11.9	7	Y
TA-3-22 Power & Steam Plant	MSGP01201	MSGP I	NM 2010 Aqu Chronic 80 mg	Copper, dissolved	F	Mon	7/25/2019	ug/L	1	1	13.5	13.5	7	Y
TA-3-38 Carpenter Shop	MSGP07401	MSGP I	NM 2010 Aqu Chronic 80 mg	Aluminum, total recoverable	F10u	Mon	5/10/2019	ug/L	1	1	728	728	1010	N
TA-3-38 Carpenter Shop	MSGP07401	MSGP I	2007 EPA R6 MQL	Aroclor, total	UF	NMM	5/10/2019	ug/L	1	0	0	0	0.2	N
TA-3-38 Carpenter Shop	MSGP07401	MSGP I	NM 2010 Aqu Chronic 80 mg	Copper, dissolved	F	Mon	5/10/2019	ug/L	1	1	2.94	2.94	7	N
TA-3-38 Metals Fab Shop	MSGP00201	MSGP I	NM 2010 Aqu Chronic 80 mg	Aluminum, total recoverable	F10u	NoRpt	4/22/2019	ug/L	1	1	222	222	1010	N
TA-3-38 Metals Fab Shop	MSGP00201	MSGP I	NM 2010 Aqu Chronic 80 mg	Copper, dissolved	F	NoRpt	4/22/2019	ug/L	1	1	24.9	24.9	7	Y
TA-3-38 Metals Fab Shop	MSGP07601	MSGP I	NM 2010 Aqu Chronic 80 mg	Aluminum, total recoverable	F10u	Mon	6/17/2019	ug/L	1	1	1490	1490	1010	Y
TA-3-38 Metals Fab Shop	MSGP07601	MSGP I	2007 EPA R6 MQL	Aroclor, total	UF	NMM	6/17/2019	ug/L	1	0	0	0	0.2	N
TA-60 Asphalt Batch Plant	MSGP04301	MSGP I	NM 2010 Lvstk Wtr	Adjusted Gross Alpha	UF	Mon	7/25/2019	pCi/L	1	1	3.96	3.96	15	N
TA-60 Asphalt Batch Plant	MSGP04301	MSGP I	2007 EPA R6 MQL	Aroclor, total	UF	NMM	7/25/2019	ug/L	1	0	0	0	0.2	N
TA-60 Asphalt Batch Plant	MSGP04301	MSGP I	NM 2010 Aqu Acute 80 mg	Copper, dissolved	F	Mon	7/25/2019	ug/L	1	1	3.1	3.1	11	N
TA-60 Asphalt Batch Plant	MSGP04301	MSGP I	NM 2010 Wldlf Hab	Mercury, total	UF	NMM	7/25/2019	ug/L	1	0	0	0	0.77	N
TA-60 MRF	MSGP02901	MSGP I	NM 2010 Aqu Chronic 80 mg	Aluminum, total recoverable	F10u	Mon	4/22/2019	ug/L	1	1	816	816	1010	N
TA-60 MRF	MSGP02901	MSGP I	2007 EPA R6 MQL	Aroclor, total	UF	NMM	4/22/2019	ug/L	1	0	0	0	0.2	N
TA-60 MRF	MSGP02901	MSGP I	NM 2010 Aqu Chronic 80 mg	Copper, dissolved	F	Mon	4/22/2019	ug/L	1	1	41.8	41.8	7	Y
TA-60 Roads and Grounds	MSGP03101	MSGP I	NM 2010 Lvstk Wtr	Adjusted Gross Alpha	UF	Mon	7/25/2019	pCi/L	1	1	0.495	0.495	15	N
TA-60 Roads and Grounds	MSGP03101	MSGP I	2007 EPA R6 MQL	Aroclor, total	UF	NMM	7/25/2019	ug/L	1	0	0	0	0.2	N
TA-60 Roads and Grounds	MSGP03101	MSGP I	NM 2010 Aqu Acute 80 mg	Copper, dissolved	F	Mon	7/25/2019	ug/L	1	1	8	8	11	N
TA-60 Roads and Grounds	MSGP03101	MSGP I	NM 2010 Wldlf Hab	Mercury, total	UF	NMM	7/25/2019	ug/L	1	0	0	0	0.77	N
TA-60 Roads and Grounds	MSGP03201	MSGP I	NM 2010 Aqu Chronic 80 mg	Copper, dissolved	F	Mon	4/22/2019	ug/L	1	1	5.14	5.14	7	N
TA-60 Roads and Grounds	MSGP03201	MSGP I	NM 2010 Aqu Chronic 80 mg	Aluminum, total recoverable	F10u	Mon	4/30/2019	ug/L	1	1	1380	1380	1010	Y
TA-60 Roads and Grounds	MSGP03201	MSGP I	2007 EPA R6 MQL	Aroclor, total	UF	NMM	4/30/2019	ug/L	1	0	0	0	0.2	N
TA-60 Roads and Grounds	MSGP03701	MSGP I	NM 2010 Aqu Chronic 80 mg	Aluminum, total recoverable	F10u	Mon	7/26/2019	ug/L	1	1	6580	6580	1010	Y
TA-60 Roads and Grounds	MSGP03701	MSGP I	2007 EPA R6 MQL	Aroclor, total	UF	NMM	7/26/2019	ug/L	1	0	0	0	0.2	N
TA-60 Roads and Grounds	MSGP03701	MSGP I	NM 2010 Aqu Chronic 80 mg	Copper, dissolved	F	Mon	7/26/2019	ug/L	1	1	3.23	3.23	7	N
TA-60 Roads and Grounds	MSGP03901	MSGP I	NM 2010 Aqu Chronic 80 mg	Copper, dissolved	F	Mon	7/25/2019	ug/L	1	1	7.74	7.74	7	Y
TA-60 Roads and Grounds	MSGP04201	MSGP I	NM 2010 Aqu Chronic 80 mg	Aluminum, total recoverable	F10u	Mon	4/23/2019	ug/L	1	1	2050	2050	1010	Y
TA-60 Roads and Grounds	MSGP04201	MSGP I	2007 EPA R6 MQL	Aroclor, total	UF	NMM	4/23/2019	ug/L	1	0	0	0	0.2	N
TA-60 Roads and Grounds	MSGP04201	MSGP I	NM 2010 Aqu Chronic 80 mg	Copper, dissolved	F	Mon	4/23/2019	ug/L	1	1	4.75	4.75	7	N
TA-60-1 Heavy Equipment Yard	MSGP02201	MSGP I	NM 2010 Aqu Chronic 80 mg	Aluminum, total recoverable	F10u	Mon	4/22/2019	ug/L	1	1	14900	14900	1010	Y
TA-60-1 Heavy Equipment Yard	MSGP02201	MSGP I	2007 EPA R6 MQL	Aroclor, total	UF	NMM	4/22/2019	ug/L	1	0	0	0	0.2	N
TA-60-1 Heavy Equipment Yard	MSGP02201	MSGP I	NM 2010 Aqu Chronic 80 mg	Copper, dissolved	F	Mon	4/22/2019	ug/L	1	1	13.4	13.4	7	Y
TA-60-2 Warehouse	MSGP02601	MSGP I	NM 2010 Aqu Chronic 80 mg	Aluminum, total recoverable	F10u	Mon	4/1/2019	ug/L	1	1	2350	2350	1010	Y
TA-60-2 Warehouse	MSGP02601	MSGP I	2007 EPA R6 MQL	Aroclor, total	UF	NMM	4/1/2019	ug/L	1	0	0	0	0.2	N
TA-60-2 Warehouse	MSGP02601	MSGP I	NM 2010 Aqu Chronic 80 mg	Copper, dissolved	F	Mon	4/1/2019	ug/L	1	1	9.67	9.67	7	Y
TA-60-2 Warehouse	MSGP07501	MSGP I	NM 2010 Aqu Chronic 80 mg	Aluminum, total recoverable	F10u	Mon	4/22/2019	ug/L	1	1	5760	5760	1010	Y
TA-60-2 Warehouse	MSGP07501	MSGP I	2007 EPA R6 MQL	Aroclor, total	UF	NMM	4/22/2019	ug/L	1	0	0	0	0.2	N
TA-60-2 Warehouse	MSGP07501	MSGP I	NM 2010 Aqu Chronic 80 mg	Copper, dissolved	F	Mon	4/22/2019	ug/L	1	1	37	37	7	Y

Not-detected - discontinue monitoring

WQS Exceedance - violation and corrective action

Effluent Limitation Guidelines

Sector D – Asphalt Batch Plant

Analyte	Field Prep Code	Daily Min	Daily Max	30-Day Avg	Units
Oil and Grease	UF		15	10	mg/L
pH	UF	6	9		SU
TSS	UF		23	15	mg/L

- Any exceedance is a permit violation and triggers the corrective action process;
  - A follow-up sample must be collected within 30 days or during the next qualifying storm event.
- If follow-up result also exceeds, submit an ELG Exceedance Report to EPA and monitoring moves from annual to quarterly until results return to compliance.

Exceedances- ELG

2019 Triad permit data

Permitted Facility	MSGP Station Number	Level Type	Analyte Name	Field Prep Code	Last Mon Sample Date	Actual Result Average	Report Units	Analysis Results Count	Detected Results Count	Minimum Adjusted Result	Maximum Adjusted Result	MSGP ELG Exceedance	MSGP ELG Daily Min Level	Minimum Adjusted Result < ELG	MSGP ELG Daily Max Level	Maximum Adjusted Result > ELG	MSGP ELG 30-Day Avg Sequence No.	MSGP ELG 30-Day Avg Level	MSGP ELG 30-Day Avg Adjusted Result	MSGP 30-Day Avg Adjusted Result > ELG
TA-60 Asphalt Batch Plant	MSGP04301	MSGP ELG Daily Max, MSGP ELG 30-Day Avg	Oil and Grease	UF	07/25/2019	1.41	mg/L	1	0	0.0	0.0	N			15.0	N	1	10.0	0.0	N
TA-60 Asphalt Batch Plant	MSGP04301	MSGP ELG Daily Max, MSGP ELG 30-Day Avg	Total Suspended Solids (TSS)	UF	07/25/2019	141.0	mg/L	1	1	141.0	141.0	Y			23.0	Y	1	15.0	141.0	Y
TA-60 Asphalt Batch Plant	MSGP04301	MSGP ELG Daily Max, MSGP ELG 30-Day Avg	Total Suspended Solids (TSS)	UF	08/07/2019	101.0	mg/L	2	2	61.0	141.0	Y			23.0	Y	2	15.0	101.0	Y
TA-60 Asphalt Batch Plant	MSGP04301	MSGP ELG Daily Max, MSGP ELG Daily Min	pH	UF	08/07/2019	9.03	SU	2	0	8.93	9.13	Y	6.0	N	9.0	Y				

TSS and pH - 2 exceedances in 2019

- Submitted Exceedance Report to EPA
- Now monitoring quarterly until results return to compliance

Every TSS result at Asphalt Batch Plant since 2011 has exceeded the ELG

Summary

- Consistent pattern of repeated exceedances for the same parameters at most locations
- Need to evaluate the appropriateness and effectiveness of corrective actions
- New AIM Tiered Corrective Action process requires increasingly more prescriptive and robust responses
  - Tier 1 – Review existing controls, add new controls, continue monitoring (same as current requirement)
  - Tier 2 – Implement Sector-specific stormwater controls
  - Tier 3 – Install permanent controls

- LANL's environmental compliance data are published on EPA's Enforcement and Compliance History Online (ECHO) public website. Environmental groups and stakeholders review and assess facility data nationwide to advocate for more stringent permit conditions.

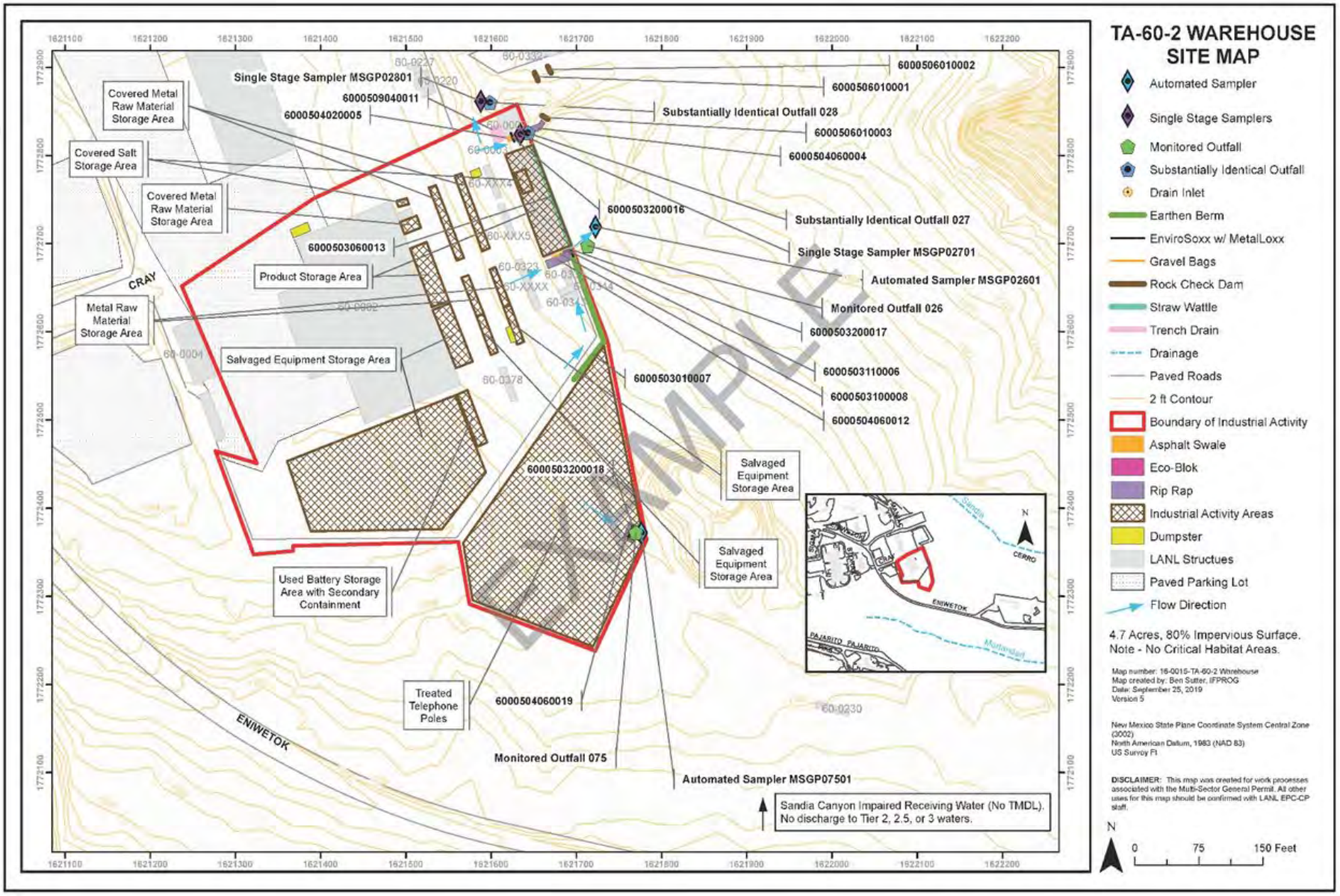
MSGP Routine Facility Inspections

When Do I Perform A Routine Facility Inspection (RFI)?

- At least quarterly
  - Monthly for areas w/ significant activities and materials exposed to stormwater
- At least once a calendar year during stormwater discharge
- Once a calendar year for sites in No Exposure or Inactive status

Where Do I Find Information to Help Me Perform an RFI?

Psst! Look at the SWPPP


TA-60-2 WAREHOUSE SITE MAP
Automated Sampler
Single Stage Samplers
Monitored Outfall
Substantially Identical Outfall
Drain Inlet
Earthen Berm
EnviroSoxx w/ MetalLoxx
Gravel Bags
Rock Check Dam
Straw Wattle
Trench Drain
Drainage
Paved Roads
2 ft Contour
Boundary of Industrial Activity
Asphalt Swale
Eco-Blok
Rip Rap
Industrial Activity Areas
Dumpster
LANL Structues
Paved Parking Lot
Flow Direction
4.7 Acres, 80% Impervious Surface.
Note - No Critical Habitat Areas.
Map number: 16-0015-TA-60-2 Wrehouse
Map created by: Ben Sutter, IFPROG
Date: September 25, 2019
Version 5
New Mexico State Plane Coordinate System Central Zone (3002)
North American Datum, 1983 (NAD 83)
US Survey Ft
DISCLAIMER: This map was created for work processes associated with the Multi-Sector General Permit. All other uses for this map should be confirmed with LANL EPC-CP staff.
N
0
75
150 Feet
Single Stage Sampler MSGP02801
6000509040011
6000504020005
Covered Metal Raw Material Storage Area
Covered Salt Storage Area
Covered Metal Raw Material Storage Area
6000503060013
Product Storage Area
Metal Raw Material Storage Area
Salvaged Equipment Storage Area
Used Battery Storage Area with Secondary Containment
Treated Telephone Poles
6000504060019
Monitored Outfall 075
Automated Sampler MSGP07501
Sandia Canyon Impaired Receiving Water (No TMDL). No discharge to Tier 2, 2.5, or 3 waters.
6000506010002
6000506010001
Substantially Identical Outfall 028
6000506010003
6000504060004
6000503200016
Substantially Identical Outfall 027
Single Stage Sampler MSGP02701
Automated Sampler MSGP02601
Monitored Outfall 026
6000503200017
6000503110006
6000503100008
6000504060012
6000503010007
6000503200018
Salvaged Equipment Storage Area
Salvaged Equipment Storage Area
ENIWETOK
CRAY
SAMPLE

What Does An RFI Cover?

- Weather at time of inspection
- Discharges or evidence of discharges from the site
  - New discharges?
  - Evidence of, or potential for pollutants to enter the drainage system?

- Monitored outfalls and Substantially Identical Outfalls (SIOs)
  - Evidence of erosion?
  - Evidence of pollutants in discharge?
  - Flow dissipation devices operating effectively?

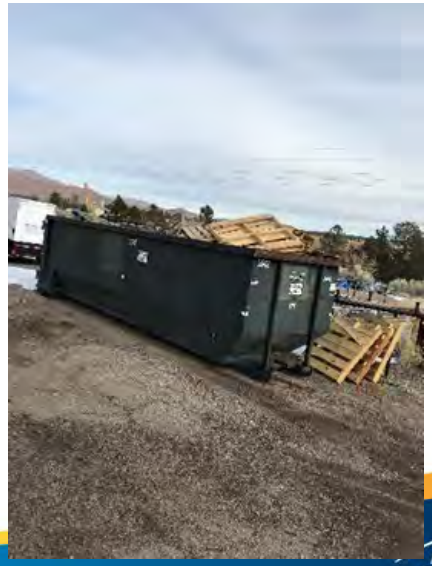
What Does An RFI Cover?

- Stormwater Control Measures
  - Are they operating effectively?
  - Are then in need of maintenance, repair, replacement?

What Does An RFI Cover?

- Industrial areas/activities exposed to stormwater
  - Includes the site's MSGP Sector of Industrial Activity (e.g. TA-60-2 Warehouse is under Sector P: Land Transportation and Warehousing)
- Additional activities you must inspect for
  - Dust generation
  - Offsite tracking
  - Housekeeping
  - Leaks/spills
- Non-compliances not identified in the above sections
- Additional Control Measures
- Signed Certification Statement

Common Issues Found During Inspection



Los Alamos National Laboratory

Work Order MSGP-RI-64155

MSGP Routine Inspection
Printed 3/2/2020 - 11:02 AM

Maintenance Details

Requested: 2/28/2020 12:04:29 PM
Procedure: MSGP Routine Facility Inspection (EPC-CP-Form-1020.2)
Last PM: 1/23/2020
Project: Routine Facility Inspections March 2020 (P-MSGP-RI-5427)
Reason: 2020 March Inspections

Target: 3/31/2020
Priority/Type: Normal / Inspection
Department: Utilities and Infrastructure

MSGP Program
RG121.9
TA-60-2 Warehouse

Contact:
Phone:

Tasks

#	Description	Meas.	No	N/A	Yes
	Weather Information				
20	Describe the weather at time of inspection and document the temperature (F°).		☐	☐	☐
	Within the Facility Boundary				
40	Is the facility free of new discharges of pollutants that have occurred since the last inspection? If "Failed" describe.		☐	☐	☐
50	If "No" has a CAR been previously initiated for this new discharge?		☐	☐	☐
60	Is the facility free of discharge of pollutants at the time of inspection? If "No" describe.		☐	☐	☐
70	Is the facility free of evidence of, or the potential for, pollutants entering the drainage system. If "No" describe.		☐	☐	☐
	Outfall Inspection (identify needed maintenance and repairs, failed control measures that need replacement, or a description of corrective actions in relevant task comment)				
90	**Monitored Outfall [026]** Free of Evidence of Erosion? If "No", describe.		☐	☐	☐
100	**Monitored Outfall [026]** Flow Dissipation Devices Operating Effectively? If "No", describe.		☐	☐	☐
110	**Monitored Outfall [026]** Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		☐	☐	☐
120	**Monitored Outfall [026]** Free of any unauthorized non-stormwater discharges? If "No" describe.		☐	☐	☐
130	**Monitored Outfall [075]** Free of Evidence of Erosion? If "No", describe.		☐	☐	☐
140	**Monitored Outfall [075]** Flow Dissipation Devices Operating Effectively? If "No", describe.		☐	☐	☐
150	**Monitored Outfall [075]** Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		☐	☐	☐
160	**Monitored Outfall [075]** Free of any unauthorized non-stormwater discharges? If "No" describe.		☐	☐	☐
170	**Substantially Identical Outfall [027]** Free of Evidence of Erosion? If "No", describe.		☐	☐	☐
180	**Substantially Identical Outfall [027]** Flow Dissipation Devices Operating Effectively? If "No", describe.		☐	☐	☐
190	**Substantially Identical Outfall [027]** Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		☐	☐	☐
200	**Substantially Identical Outfall [027]** Free of any unauthorized non-stormwater discharges? If "No" describe.		☐	☐	☐
210	**Substantially Identical Outfall [028]** Free of Evidence of Erosion? If "No", describe.		☐	☐	☐
220	**Substantially Identical Outfall [028]** Flow Dissipation Devices Operating Effectively? If "No", describe.		☐	☐	☐
230	**Substantially Identical Outfall [028]** Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		☐	☐	☐
240	**Substantially Identical Outfall [028]** Free of any unauthorized non-stormwater discharges? If "No" describe.		☐	☐	☐
	Control Measures (identify needed maintenance and repairs, failed control measures that need replacment, or a description of corrective actions in relevant task comments).				

- This is an example of a printed inspection form.
- Forms may be completed electronically through software MC Express.
- Instructions for performing inspection and filling out form are in procedure EPC-CP-QP-023, *MSGP Routine Facility Inspections*

		Meas.	No	N/A	Yes
260	**Gravel Bags [6000503100008]** Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.		☐	☐	☐
270	**Concrete/Asphalt Channel/Swale [6000504020005]** Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.		☐	☐	☐
280	**Eco-Block [6000503110006]** Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.		☐	☐	☐
290	**Rip Rap [6000504060004]** Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair,		☐	☐	☐
300	**Rip Rap [6000504060012]** Control Measu condition & need for Maintenance, Repair,		☐	☐	☐
310	**Rip Rap [6000504060019]** Control Measu condition & need for Maintenance, Repair, or Replacement.		☐	☐	☐
320	**Earthen Berm [6000503010007]** Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.		☐	☐	☐
330	**Straw Wattle [6000503060013]** Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement. Elk ate wattle. Need to replace.		☒	☐	☐
340	**Rock Check Dam [6000506010001]** Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.		☐	☐	☐
350	**Rock Check Dam [6000506010002]** Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.		☐	☐	☐
360	**Rock Check Dam [6000506010003]** Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.		☐	☐	☐
370	**Trench Drain [6000509040011]** Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.		☐	☐	☐
380	**EnviroSoxx w/ MetalLoxx [6000503200016]** Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.		☐	☐	☐
390	**EnviroSoxx w/ MetalLoxx [6000503200017]** Control Measure is ope "No" describe condition & need for Maintenance, Repair, or Replacem		☐	☐	☐
400	**EnviroSoxx w/ MetalLoxx [6000503200018]** Control Measure is ope "No" describe condition & need for Maintenance, Repair, or Replacement.		☐	☐	☐
	Area/Activity exposed to stormwater (identify needed mainteance or a description of corrective actions in relevant task comment).				
420	Material loading/unloading and storage areas: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☒	☐
430	Transfer areas for substances in bulk: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
440	Product/chemical storage areas (raw material): controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
450	Liquid tank storage/secondary containment: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
460	Industrial processing and finished product storage areas: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
470	Equipment operation and maintenance areas: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
480	Fueling areas: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
490	Outdoor vehicle and equipment washing areas: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
500	Machinery: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
510	Waste handling and disposal areas: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
520	Erodible areas/construction: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
530	Locations and sources of run-on to the site: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
540	Salt storage piles or pile containing salt: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
550	Dust generation and vehicle tracking: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
560	Housekeeping (Industrial materials/residues/trash in contact with stormwater): controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
570	Leaks and spills: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐

If you need more space, write "See Labor Report" and continue notes at end of form

If your site does not have an activity, check N/A

		Meas.	No	N/A	Yes
580	**Sector P [60005-]** Vehicle storage/maintenance areas: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
	Non-Compliance				
600	Free of incidents of observed non-compliance not already identified above? If "No" describe.		☐	☐	☐
	Additional Control Measures				
620	Are permit requirements satisfied with existing control measure(s)? If "No" describe additional control measures needed.		☐	☐	☐

Labor

Labor	Assigned	Work Date	Reg Hrs	OT Hrs	Other Hrs
Admin, Jane	2/20/2020				

Labor Report

Completed: _____

Report:

The inspector prints and signs his/her name

Add the date and time the inspection was performed

Signature / Name | Date | Signature / Name | Date

I confirm the information as recorded is true, accurate and complete.

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 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".

(Signatory must meet definition in Section B.11.A, eg. FOD, Ops Mgr, DESH Group Leader, EPC Group Leader)

Print name and title: _____

Signature: _____ Date: _____

Have the Cert Statement signed no more than 14 days after completing the inspection

What Do I Do When I Complete the RFI?

- Check your work (especially the check boxes)
- Sign it……and date/time it
- Sign the Certification Statement (w/in 14 days of inspection)
- Give a copy to the MSGP Program (w/in 14 days of inspection)
- Add it to your SWPPP
- Enter any issues* (corrective actions) into the Corrective Action Response database

*Anyone can identify potential stormwater issue, not just DEPs or MSGP Program staff


I DON'T ALWAYS SEE SOMEONE POLLUTING THE STORMWATER SYSTEM
BUT WHEN I DO, I CALL MY LOCAL STORMWATER COORDINATOR

Call the MSGP Program Team when you have questions

MSGP Corrective Actions

Agenda

- Definition of corrective action
- Conditions requiring corrective action
- Immediate corrective action
- Subsequent corrective action
- 45-day extension
- Corrective action documentation

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) satisfy any permit condition or SWPPP requirement

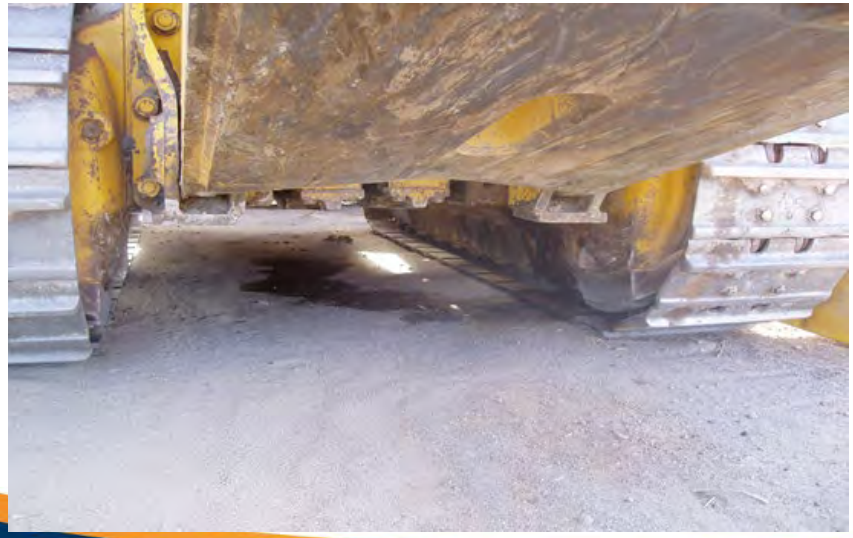
Conditions Requiring Corrective Action

- Unauthorized release or discharge
- Impaired water quality standards are exceeded (e.g., control measures are inadequately managing stormwater discharges)
- The average of four quarterly sampling results exceeds an applicable benchmark
- Effluent limitation guidelines are exceeded at the Asphalt Batch Plant (Sector D)
- Control measures are not being properly operated and maintained

Conditions Requiring Corrective Action (cont.)

- Visual assessment that shows evidence of stormwater pollution (e.g., color, odor, floating solids, settled solids, suspended solids, foam)
- A regulator during an inspection determines control modification is necessary to meet non-numeric effluent limits
- Facility operations change resulting in an increase in the quantities of pollutants discharged
- Failure to meet any permit condition or those specified in the site specific SWPPP

Conditions Requiring Corrective Action



Conditions Requiring Corrective Action

Immediate Corrective Action

- Shall *Immediately* act upon identification of an issue
  - Immediately is the same day a condition is found
  - Solely calling or emailing personnel requesting action is not considered to be an immediate response
  - Minimize or prevent the discharge of pollutants until a permanent solution is installed (e.g., absorbents, micro blaze, gravel bags)

Immediate Corrective Action (cont.)

- Clean up all contaminated surfaces to prevent pollutant discharge during subsequent storm events
- Designated staff must be trained and available to provide immediate support
- Basic BMPs and cleanup materials must be readily available on site
- If found after 3:00 pm, action must be taken the next workday

Subsequent Corrective Action

- For minor conditions, immediate action is often sufficient, and no additional action is necessary
- An FSR may be required to initiate a follow up action or permanent solution after the immediate action is completed (e.g., procurement and installation of a new stormwater control measure or SCM)
- Complete the corrective action (e.g., install a new or modified control and make it operational or complete the repair) *before the next storm event or within 14 calendar days from the time of discovery*
- Any corrective action resulting in a change to a SCM or procedure documented in the SWPPP will require SWPPP modification within 14 days of completing the corrective action

Subsequent Corrective Action (cont.)

- If finalization of CA is *infeasible* within the 14-day timeline then:
  - Document reasoning in database (e.g., delays in procuring industrial stormwater controls, installation of enclosures, etc.)
  - Provide a schedule for completion of corrective action in database
  - If the completion of a corrective action is anticipated to take more than 45 days from the time of discovery, EPA must be provided a notification of the intention to exceed, rational for the extension and a completion date
  - These time intervals are not grace periods, but are schedules for documenting findings and for making repairs and improvements
  - The permit does not allow corrective actions to remain open indefinitely

45 Day Extension

- If a CA is expected to exceed the 45-day timeframe the DEP shall provide EPC-CP the following information:
  - Rationale for an extension (e.g. an engineered design and installation of an engineered control)
  - A description of the condition requiring corrective action along with a summary of the preliminary steps that have been taken to complete the corrective action
  - A realistic completion date along with a realistic and detailed schedule that includes all outstanding steps required to complete the corrective action
- EPC-CP MSGP staff will prepare and submit to EPA the 45-day exceedance based on the information above

Corrective Action Documentation Recap

- Within 24 hours of discovery enter a description of the condition requiring corrective action and the date the condition was identified in the CAR database
- Document immediate actions taken to minimize or prevent the discharge of pollutants
- Document dates when each corrective action was initiated, completed, or is expected to be completed
- If the corrective action cannot be completed within 14-days, provide a schedule and justification why it is infeasible to complete the necessary installation

Corrective Action Documentation Recap (cont.)

- Spill documentation must describe:
  - Material, location, amount, date/time and the cause of the spill
  - Leaks, spills, or other releases that resulted in discharges of pollutants to waters of the U.S
  - Response actions, date/time cleanup was completed, notifications, staff involved, measures implemented to prevent reoccurrence

Additional Implementation Measures (AIM)

- EPA proposed revisions to the 2015 MSGP's provisions regarding benchmark monitoring exceedances
- There are three AIM levels: AIM Tier 1, Tier 2, and Tier 3
- Operators will be required to respond to different AIM levels with increasingly robust control measures depending on the nature and magnitude of the benchmark threshold exceedance

Los Alamos
NATIONAL LABORATORY
EST. 1943

New Mexico Water Quality Control Commission Compliance

Spills and Unplanned Releases
Legacy Equipment – Lesson's Learned

NNSA
National Nuclear Security Administration

Presentation Overview

- Environmental Reporting Requirements
- Who to Contact in the Event of a Release
- Ways to Prevent Spills
- NPDES MSGP Requirements
- Legacy Equipment – Lessons Learned
- Questions

Spills- Unplanned Releases to the Environment

- Water Quality investigates and evaluates spills throughout LANL to determine if external reporting is required to comply with State and Federal Regulations
  - NMWQCC Regulations, Clean Water Act, CERCLA, EPCRA

Spills- Unplanned Releases to the Environment

- Corrective actions need to be taken for all spills that occur
- There is not a de minimis volume of spilled material that does not need to be addressed

Who to Contact in the Event of a Spill

- Notify Supervisor of Spill Occurrence
- Notify the Roads and Grounds Deployed Environmental Professional
  - Leonard Sandoval
- Notify Water Quality Spills Pager – **664-7722**
- Notify Emergency Operations in the event of an emergency **667-6211**

Spill Prevention and Minimization

- Plan work to eliminate avoidable spills
- Use secondary containment to prevent releases to the environment
- Ensure preventive maintenance on equipment is completed
- Know where spill kits are located and how to use contents
- Know who to contact in the event of a release

NPDES Multi-Sector General Permit (MSGP) Requirements

- 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.
  - At LANL-“an extended period of time” is considered to be 6 months.

Legacy Equipment
Sheep's Foot Compactor-Lesson's Learned

- Compactor discovered on Sigma Mesa-slated to be salvaged
- Diesel was identified to be leaking from equipment
- Initially thought to be empty
  - Actually filled with over 900 gallons of diesel/water

Legacy Equipment
Sheep's Foot Compactor-Lesson's Learned Continued

- Diesel filled compactor presented significant environmental compliance and safety concern
  - SPCC, NMWQCC, Site Safety
- Notify your management and environmental resources to investigate any unknown equipment or equipment suspected to contain potential water contaminants to mitigate safety and environmental issues

Questions?

ATTACHMENT 12: MSGP (OR ACTIVE URL)

Attached is a copy of the2021 MSGP is kept of file with the SWPPP in hard copy. The active URL for the permit is https://www.epa.gov/npdes/stormwater-discharges-industrial-activities-epas-2021-msgp

ATTACHMENT 13: THREATENDED AND ENDANGERED SPECIES HABITAT MANAGEMENT PLAN FOR LOS ALAMOS NATIONAL LABORATORY

LA-UR-17-29454
Approved for public release; distribution is unlimited.

October2017

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

Los Alamos
NATIONAL LABORATORY
EST.1943

Cover photo: Mexican Spotted Owls at Los Alamos National Laboratory

Prepared by: Environmental Protection and Compliance Division
Resources Management Team
Los Alamos National Laboratory

Prepared for: U.S. Department of Energy, National Nuclear Security Administration,
Los Alamos Field Office

*An Affirmative Action/Equal Opportunity Employe*r

Contents

Figures

Tables

ACRONYMS AND TERMS

AEI	area of environmental interest
Bd	Batrachochytrium dendrobatidis (Chytrid Fungus)
DARHT	Dual-Axis Radiographic Hydrodynamic Test (Facility)
dB	decibel
dB(A)	A-weighted decibel
dB(C)	C-weighted decibel
DDT	(dichloro-diphenyl-trichloroethane)
DOE	U.S. Department of Energy
ESA	Endangered Species Act of 1973
fc	foot candles
Field Office	U.S. Department of Energy Los Alamos Field Office
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
LANS	Los Alamos National Security, LLC
NEPA	National Environmental Policy Act of 1969
PCBs	polychlorinated biphenyls
TNT	trinitrotoluene(2,4,6-)
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) fulfills a commitment made to the U.S. Department of Energy (DOE) in the "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). This 2017 update retains the management guidelines from the 1999 HMP for listed species, and updates some descriptive information.

2.0 Role of Site Plans in the HMP

The purpose of the HMP is to provide a management strategy for Endangered Species Act (ESA) compliance through 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 Jemez Mountains Salamander (*Plethodon neomexicanus*). Site plans provide guidance to ensure that LANL operations do not adversely affect threatened or endangered species or their habitats.

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, prime habitat for Black-footed Ferrets, have been observed at LANL. Therefore, there is no site plan for this species.

The New Mexico Meadow Jumping Mouse (*Zapus hudsonius luteus*) and Yellow-billed Cuckoo (*Coccyzus americanus*) do not require a site plan because they do not have breeding habitat on LANL property. In Keller (2015), it was concluded that if any LANL work activities might affect habitat for these two species, those activities would be reviewed for impacts.

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. The USFWS reviewed allowable activities 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

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 occur in the core and/or buffer of all 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.

3.2 General Description of Buffer Areas and Allowable Buffer Area Development

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 size 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 Los Alamos National Security, LLC (LANS) biologists for tracking (http://int.lanl.gov/environment/bio/controls/index.shtml).

3.3 Emergency Actions

Managers may activate emergency actions if safety and/or property is immediately threatened by something occurring within an AEI (for example, wildfire, water line breakage, etc.). Contact a LANS biologist (http://int.lanl.gov/environment/bio/controls/index.shtml), the Environmental Stewardship Group (505-665-8855), or the DOE Los Alamos Field Office (Field Office; 505-667-6819) as soon as possible. If the emergency occurs outside of regular business hours, contact

the Emergency Management Office (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

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.

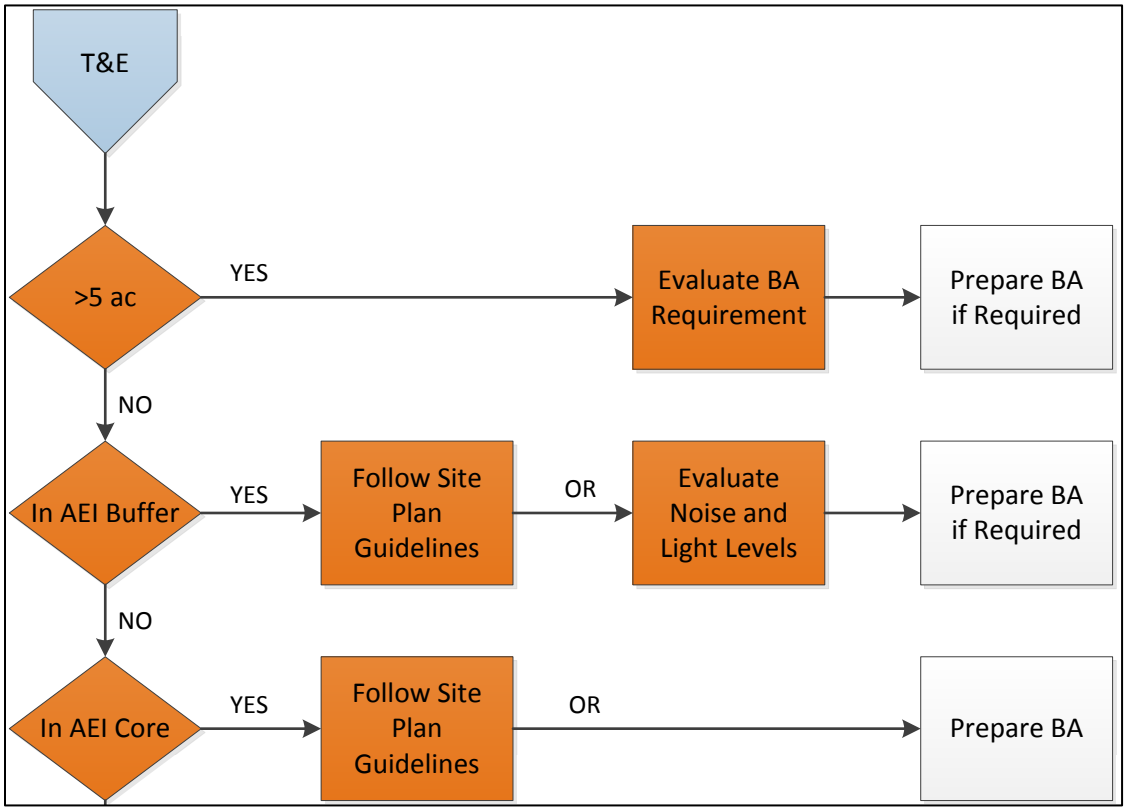


Figure 1. Process flowchart for determining site plan requirements

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 project into the integrated review tool for a new or modified project is required under Program Description 400 (LANL 2016) and allows managers to identify the requirements within their project area. Deployed environmental professionals and core LANS biologists 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 subject matter experts. 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.

4.2 If an Activity Does Not Meet Site Plan Guidelines

If a project reviewer determines that an activity or project cannot meet the guidelines in applicable site plans, LANS biologists evaluate that activity individually for compliance with the ESA. Results of the evaluation of potential impacts allow LANS biologists 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 effect 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 for the activity and submit it to the USFWS for concurrence. Fieldwork and preparation of a biological assessment 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

Habitat locations of threatened and endangered species are not considered sensitive; however, it is in the best interest of threatened and endangered species to restrict specific knowledge about their locations.

5.0 Changes in the HMP since Implementation

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.

In 2005, the USFWS concurred with DOE's proposal for updated Mexican Spotted Owl habitat boundaries based on a revised analysis of Mexican Spotted Owl habitat quality within DOE property around LANL (USFWS consultation number 22420-2006-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).

In 2015, the USFWS concurred with the DOE's addition of the New Mexico Meadow Jumping Mouse and Yellow-billed Cuckoo to LANL's HMP (USFWS consultation number 02ENNM00-2015-I-0538).

In 2017, the USFWS concurred with DOE's proposal to modify the habitat boundaries for the lower section of Water Canyon Mexican Spotted Owl AEI due to habitat degradation resulting from long-term drought and fire effects (USFWS consultation number 02ENNM00-2017-I-0255).

6.0 Data Management

The data used in the implementation of the HMP are stored in a geodatabase at LANL. The current map of all of the AEIs at LANL is in Figure A-1 in the appendix.

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 characteristics 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 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 deermice (*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, wildfires, 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 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, is 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 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).

LANS subject matter experts 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 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 chemicals of potential concern (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, LANS biologists 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. LANS biologists 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 that for Mexican Spotted Owls, 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 currently no specific information available on the reaction of Mexican Spotted Owls to explosives detonation. 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 trinitrotoluene(2,4,6-) (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 A-weighted decibel [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). LANS biologists 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). LANS biologists 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 that limit human activity and development in the canyon bottoms.

[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.

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. Noise is also 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 2016 Compliance Order on Consent issued by the New Mexico Environmental Department 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 Individual Permit (EPA 2010) issued by the Environmental Protection Agency 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. LANS biologists 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).

In December 1997, LANS biologists conducted noise measurements at the Los Alamos County airport and in Bayo and Pueblo canyons, including the Los Alamos County Sewage Treatment Facility. 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 3-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 3-minute period was 60 (range 41 to 70).

LANS biologists 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 (dB(C) scale (Keller and Foxx 1997). Measurements of noise levels using the dB(C) scale are greater than if measured using the dB(A) scale. 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.

LANS biologists measured sound levels from various pieces of construction equipment used at LANL project sites 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 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 level before construction began was 56.6 dB(A), and the average during construction was 82.1 dB(A).

LANS biologists 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 a 10 percent developed area in their buffers had significantly higher levels of background noise than undeveloped AEIs. The mean background sound level was 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.

LANS biologists 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 biological assessment 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.

LANS biologists took sound level measurements around the LANL Biosafety Level 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 Biosafety Level 3 laboratory 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 in 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. LANS biologists 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.

An updated Mexican Spotted Owl habitat model was developed and refined for application on LANL property 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 property, 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.

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

Occupancy simply refers to whether or not an AEI is occupied during a species' period of sensitivity. For Mexican Spotted Owls, the primary concern is to protect 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 LANS biologist 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

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. LANS biologists 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, LANS biologists 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 must be reported to LANS biologists for tracking (http://int.lanl.gov/environment/bio/controls/index.shtml).

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

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 area 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 LANS biologists 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

LANS biologists 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). LANS biologists 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. LANS biologists 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 biological assessment (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. LANS biologists 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 LANS biologists 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 LANS biologists 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

	Levels of Impact	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

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.

- Make every reasonable effort 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.
- Install signs on dirt roads and trails leading into AEIs labeling them as restricted access areas and provide a contact number 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.
- Employ appropriate erosion and runoff controls to reduce soil loss. The controls must be put in place and periodically checked throughout the life of projects.
- Revegetate all exposed soils as soon as feasible after construction to minimize erosion.
- Focus development away from undeveloped areas on the western end of the Los Alamos Canyon 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 redelineation of the habitats, and many have experienced additional development under past consultations. Many projects were reviewed and received USFWS concurrence between 1999 and 2017.

The current development status for each of the AEIs is at the end of each AEI description.

Cañon de Valle—In 1999, 16.3 ha (40.3 ac) of the core was developed and 52.2 ha (129 ac) of the 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 was developed, with most of the changes due to consultations. The 2017 redelineation of the lower Water Canyon AEI resulted in another reduction of 69 ha (170 ac). The current size of this AEI is 277 ha (685 ac) of core and 524 ha (1295 ac) of buffer habitat. Of that, 21 ha (52 ac) of the current core is developed and 71 ha (176 ac) of the current buffer is developed.

Pajarito—In 1999, 6.7 ha (16.5 ac) of the core was developed and 75.1 ha (186.5 ac) of the buffer was developed. For this AEI, it was recommended that only an additional 35 ha (86.4 ac) of the buffer be developed. The 1999 HMP stated that once the cap is reached or a single large-scale project is proposed, additional consultation with the USFWS would be required. By 2011,

27 ha (66.7 ac) of the core and 89 ha (220 ac) of the buffer was developed, with most of the changes due to consultations. The current size of this AEI is 236 ha (585 ac) of core and 449 ha (1,111 ac) of buffer habitat. Of that, 27 ha (67 ac) of the current core is developed and 89 ha (220 ac) of the current buffer is developed.

Los Alamos—In 1999, 77.16 ha (190 ac) of the core was developed and 167.2 ha (413.1 ac) of the buffer was developed. Because this AEI is heavily developed, additional development was restricted to a few selected areas within the buffer. By 2011, 94 ha (232.2 ac) of the core and 181 ha (447.3 ac) of the buffer was developed, with most of the changes due to consultations. The current size of this AEI is 325 ha (805 ac) of core and 535 ha (1,323 ac) of buffer habitat. Of that, 64 ha (158 ac) of the current core is developed and 129 ha (319 ac) of the current buffer is developed.

Sandia-Mortandad—In 1999, 29 ha (71.7 ac) of the core was developed and 75.1 ha (185.6 ac) of the buffer was developed. For this AEI, LANS biologists recommended only an additional 38.1 ha (94.1 ac) of the buffer be developed before additional USFWS consultations take place. By 2011, 45 ha (111.2 ac) of the core and 83 ha (205.1 ac) of the buffer was developed, with most of the changes due to consultations. The current size of this AEI is 270 ha (669 ac) of core and 371 ha (918 ac) of buffer habitat. Of that, 44 ha (110 ac) of the current core is developed and 83 ha (206 ac) of the current buffer is developed.

Three Mile—In 1999, 3.8 ha (9.4 ac) of the core was developed and 21.5 ha (51.1 ac) of the buffer was developed. For this AEI, LANS biologists recommended only 64.3 ha (158.8 ac) additional area of buffer be developed before additional USFWS consultations take place. By 2011, 12 ha (29.6 ac) of the core and 37 ha (91.4 ac) of the buffer was developed, with most of the changes due to consultations. The current size of this AEI is 131 ha (325 ac) of core and 295 ha (730 ac) of buffer habitat. Of that, 11 ha (29 ac) of the current core is developed and 36 ha (91 ac) of the current buffer is 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 2013 (78 FR 343). The most recent recovery plan for the Southwestern Willow Flycatcher was published 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 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 occupies an estimated 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 habitat loss and modification 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 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 at Cochiti Lake. There are other riparian/wetland areas on LANL property associated with canyon bottoms, the most significant being the Pajarito wetlands in the lower end of Pajarito Canyon. A major paved road parallels the wetlands area in Pajarito Canyon.

2.2.2 Ecological Risk

There is no specific information on the impact of chemicals on the Southwestern Willow Flycatcher.

2.2.2.1 Ecorisk Assessment

LANS subject matter experts completed two ecological risk assessments between 1997 and 2009 that included the Southwestern Willow Flycatcher. The ecological risk assessment process involves using computer modeling to assess potential effects to animals from chemicals of potential concern 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 chemicals of potential concern (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 available on the reactions of Southwestern Willow Flycatchers to pedestrians and vehicles. 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 available on the reaction of Southwestern Willow Flycatchers to aircraft.

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 available on the reaction of Southwestern Willow Flycatchers to explosives detonation. The Southwestern Willow Flycatcher AEI is not located close to any explosives testing sites at LANL.

2.2.3.4 Other Sources of Noise

LANS biologists 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 available on the effects of artificially produced light on Southwestern Willow Flycatchers. 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 the 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 property 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

There is one Southwestern Willow Flycatcher AEI on LANL property. 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.

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) that have 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

Occupancy simply refers to whether or not an AEI is occupied during a species' period of sensitivity. For Southwestern Willow Flycatchers, LANS biologists 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. The Activity Table (Table 2, Section 4.5.2) 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 LANS biologist 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

Sections 4.4 and 4.5 provide the guidelines for habitat alterations and allowable activities in AEI core and buffer areas. The flowchart (see Figure 1) provides a quick reference that should be used to determine if 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. LANS biologists 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 over the long term 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. 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.

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 2, Section 4.5.2) for occupied AEIs.

4.4.4 Restrictions on Habitat Alterations

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 LANS biologist 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

LANS biologists 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 United States 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

The dates shown in the Activity Table (Table 2) are the dates between which the activity in the row is restricted under the guidelines of this site plan. 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 LANS biologist (http://int.lanl.gov/environment/bio/controls/index.shtml).

Table 2. Restrictions on Activities in Undeveloped Occupied Southwestern Willow Flycatcher AEI

	Levels of Impact	Core	Buffer
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

This section provides a list of management practices to apply in the AEI.

- No wetland vegetation will be removed outside of developed areas.
- Employ appropriate erosion and runoff controls 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.
- Revegetate all exposed soils 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. LANS biologists 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), LANS biologists 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 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 (77 FR 56481) and the final listing as endangered was on September 10, 2013 (78 FR 55599).

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; 78 FR 9876).

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 (77 FR 56481). 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 (78 FR 9876).

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 (77 FR 56482).

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 that 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 (77 FR 56482). Forested habitats on LANL property 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 (77 FR 56482). 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 (77 FR 56482).

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 Salamanders 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 the 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 AEIs 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: 2,150 m (7,000 ft) 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, LANS biologists 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 from fire and extreme drought effects since this landcover map was published. 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 LANS biologists 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 were hand digitized using ArcGIS (Environmental Science Research Institute, Redlands, California) by LANS biologists 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 footprint.

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 LANS biologists.

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 LANS biologists 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 LANS biologists 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 LANS biologist (505-665-3366) as soon as possible. If the emergency occurs outside of regular business hours, contact the Emergency Management Office (505-667-6211). This office will then communicate with the appropriate LANS 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. LANS biologists are 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 LANS biologists.

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 (77 FR 56482), 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 LANS biologists. 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). LANS biologists 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 LANS biologists 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

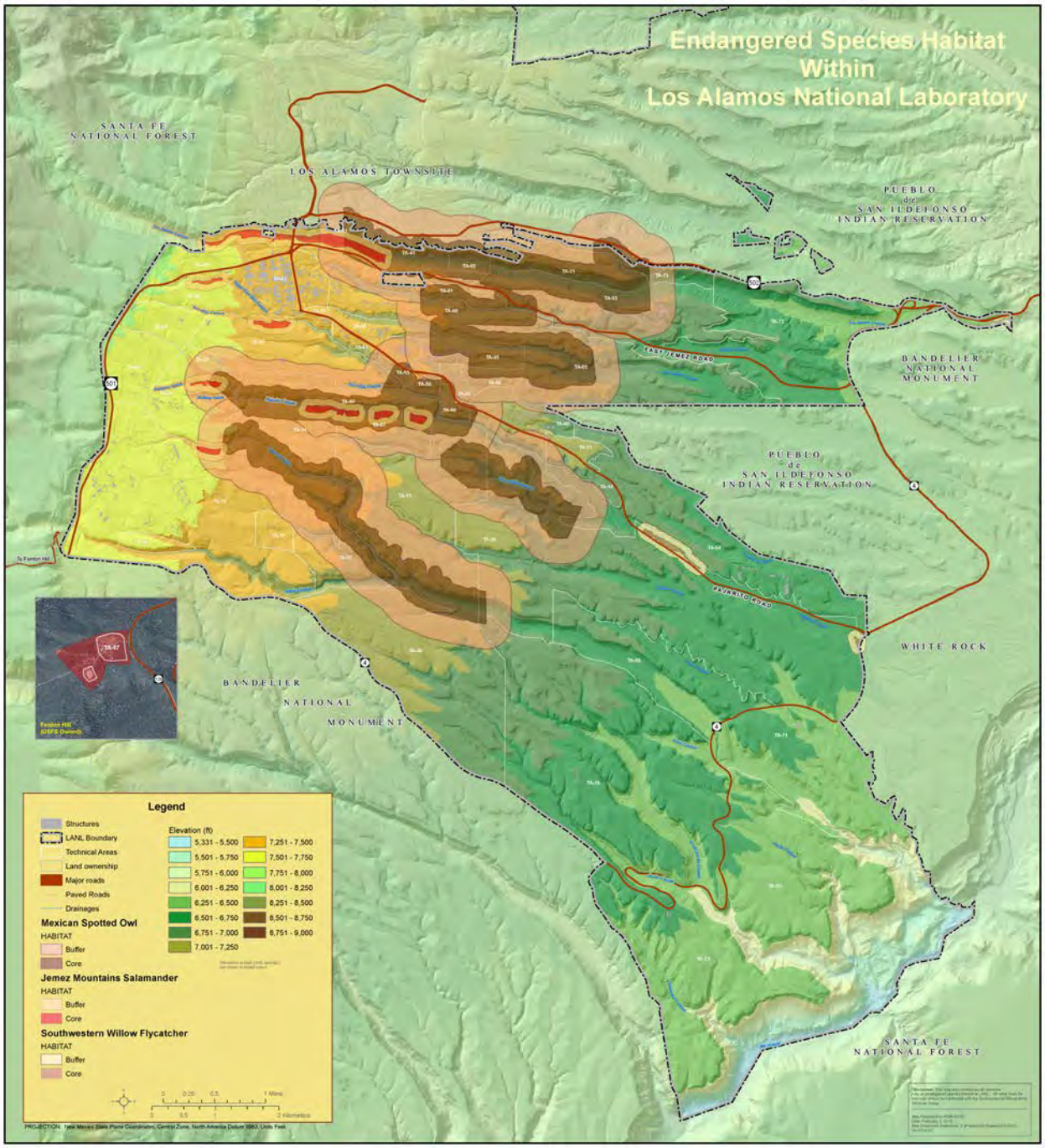

Figure A-1. Most recent map of all AEIs at LANL

ATTACHMENT 14: MSGP IPAC TRUST RESOURCES REPORT

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Los Alamos, Sandoval, and Santa Fe counties, New Mexico

Local office

New Mexico Ecological Services Field Office

(505) 346-2525
(505) 346-2542

2105 Osuna Road Ne
Albuquerque, NM 87113-1001

http://www.fws.gov/southwest/es/NewMexico/
http://www.fws.gov/southwest/es/ES_Lists_Main2.html

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an

office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
New Mexico Meadow Jumping Mouse Zapus hudsonius luteus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/7965	Endangered

Birds

NAME	STATUS
Mexican Spotted Owl Strix occidentalis lucida Wherever found There is **final** critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/8196	Threatened
Southwestern Willow Flycatcher Empidonax traillii extimus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/6749	Endangered
Yellow-billed Cuckoo Coccyzus americanus There is **proposed** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3911	Threatened

Amphibians

NAME	STATUS

Jemez Mountains Salamander Plethodon neomexicanus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/4095	Endangered

Fishes

NAME	STATUS
Rio Grande Silvery Minnow Hybognathus amarus There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/1391	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
Mexican Spotted Owl Strix occidentalis lucida https://ecos.fws.gov/ecp/species/8196#crithab	Final

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-

species/
birds-of-conservation-concern.php

- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Black-chinned Sparrow Spizella atrogularis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9447	Breeds Apr 15 to Jul 31
Brewer's Sparrow Spizella breweri This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9291	Breeds May 15 to Aug 10
Golden Eagle Aquila chrysaetos This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Grace's Warbler Dendroica graciae This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 20 to Jul 20
Gray Vireo Vireo vicinior This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8680	Breeds May 10 to Aug 20
Lesser Yellowlegs Tringa flavipes This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Lewis's Woodpecker Melanerpes lewis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9408	Breeds Apr 20 to Sep 30

Long-billed Curlew Numenius americanus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5511	Breeds Apr 1 to Jul 31
Long-eared Owl asio otus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds Mar 1 to Jul 15
Olive-sided Flycatcher Contopus cooperi This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Pinyon Jay Gymnorhinus cyanocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9420	Breeds Feb 15 to Jul 15
Rufous Hummingbird selasphorus rufus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds elsewhere
Virginia's Warbler Vermivora virginiae This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9441	Breeds May 1 to Jul 31
Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Willow Flycatcher Empidonax traillii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/3482	Breeds May 20 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most

likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▪)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

PEM1C

FRESHWATER FORESTED/SHRUB WETLAND

PSS1A

RIVERINE

R4SBA

R4SBC

A full description for each wetland code can be found at the National Wetlands Inventory website

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.

ATTACHMENT 15: EPC-CP-PIP-2101, NPDES MUTI-SECTOR GENERAL PERMIT

EPC-CP-PIP-2101	Revision: **0**	
Effective Date: 01/19/2021	Next Review Date: 01/19/2024	

Environment, Safety, Health, Quality, Safeguards and Security Directorate

Environmental Protection and Compliance Division – Compliance Programs Group

Program Implementation Plan (PIP)

NPDES Multi-Sector General Permit

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REVISION HISTORY

Document Number and Revision	Effective Date	Description of Changes
ENV-RCRA-QAPP-MSGP, R0	06/03	New Document.
ENV-RCRA-QAPP-MSGP, R1	12/05	Annual review and revision.
ENV-RCRA-QAPP-MSGP, R2	07/07	Annual review, incorporated organizational restructure changes.
ENV-RCRA-QAPP-MSGP, R3	07/09	Biennial Review and Revision.
ENV-RCRA-QAPP-MSGP, R4	07/09	Biennial Review and Revision.
ENV-CP-QAPP-MSGP, R5	10/13	Biennial Review and Revision. New format implemented.
EPC-CP-PIP-2101, R0	01/19/2021	Initial issue under this document number. It supersedes/replaces ENV-CP-QAPP-MSGP, R5. Changes include revision to the document template, addition of MLs, software requirements, and detail to Section 4.5.

Table of Contents

1.0 PURPOSE

This document describes the Program Implementation Plan (PIP) for the National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP) Program at Los Alamos National Laboratory (LANL or the Laboratory). Performance of the processes and procedures described herein, are done so in accordance with EPC-CP-QAP-001, *Environmental Compliance Programs Quality Assurance Plan.* This PIP provides detail and context regarding the implementation of those work activities generally described in EPC-CP-QAP-001. Work conducted under this program ensures compliance with the MSGP and the Clean Water Act.

2.0 AUTHORITY AND APPLICABILITY

2.1 Authority

This document is issued under the authority of the Environmental Protection and Compliance Division's Compliance Programs Group Leader to direct the management and operation of the MSGP Program.

2.2 Applicability

This PIP applies to personnel performing work by or for the MSGP Program, including but not limited to Triad National Security, LLC (Triad) employees, subcontractors and suppliers at all tiers (in accordance with subcontract documents), students, guests, and associates.

3.0 PROGRAM SCOPE

The MSGP Program is responsible for compliance oversight of LANL's NPDES MSGP, coordination and performance of institutional MSGP stormwater compliance activities, and developing and implementing institutional standards and policies regarding MSGP stormwater management. EPC-CP is the institutional point of contact regarding MSGP environmental compliance interactions with entities outside of LANL (i.e., regulatory agencies, stakeholders, and the public).

3.1 Requirements

The MSGP Program satisfies requirements contained in the following documents:

- EPC-CP-QAP-001, Section 3.3, Table 2
- NPDES MSGP
- Title 40 of the Code of Federal Regulations (CFR) Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants
- Title 20, Chapter 6, Part 4 of the New Mexico Administrative Code (NMAC), Standards for Interstate and Intrastate Surface Waters

3.2 Description of Work Activities

Triad will implement the monitoring requirements specified by the most current NPDES MSGP for industrial activities at LANL. The EPC-CP Storm Water Permitting/Compliance Team oversees institutional stormwater compliance related activities at the Laboratory.

3.3 Graded Approach

The following sections provide reference to the applicable Management Level Determinations and Software Risk Level forms.

3.3.1 Management Level Determination

The following Management Level Determinations are applicable to equipment and/or work activities for the MSGP Program (see Appendix A):

- ML-4, per MLDS No.: MLDS-TA-60-324, Revision 0.

3.3.2 Software Risk Levels

The following Software Risk Level Forms are applicable to software used during the performance of the MSGP Program (see Appendix B, C, and D):

- Environmental Information Management (EIM)
- MSGP Corrective Action Reporting Database and corresponding administrative module
- Maintenance Connection and Maintenance Connection Express

4.0 PROGRAM-SPECIFIC QUALITY ASSURANCE REQUIREMENTS AND IMPLEMENTING WORK ACTIVITIES

Based on the Graded Approach results referenced above, this PIP is determined to be consistent with the work activity types covered by EPC-CP-QAP-001, Section 3.3, Table 2. Attachment 1 presents a summary of the work practices (procedures, instructions, etc.,) that EPC-CP uses to meet the quality assurance (QA) requirements of SD300/DOE Order 414.1D, Chg. 1.

4.1 Criterion 1 – Management/Program

4.1.1 Program Goals

The MSGP Program supports EPC Division in efforts to protect:

- Public health and environment by implementing rigorous compliance programs designed to assure institutional compliance with state and federal environmental protection regulations;
- Designated uses of the Laboratory's natural resources by applying sound ecological and engineering principles towards mitigation of the Laboratory's impact; and

- Human health and the environment during emergencies by assuring technical capabilities are available to measure and evaluate unplanned release of hazardous materials into the environment.

Triad complies with the monitoring requirements, such as parameters, frequency of sampling, reporting, etc., set forth in the NPDES MSGP for industrial point source discharges through the Laboratory's MSGP Program. Compliance is demonstrated through the successful implementation of this PIP and applicable procedures.

4.1.2 Roles and Responsibilities

EPC-CP is responsible for the Laboratory's MSGP Program and a description of the group organization, level of authorities, and lines of communication are found within this PIP. The group is organized by program teams under the line management direction of the Group Leader. Teams are cross-functional and focus on specific Program responsibilities, deliverables, or products. Program teams are guided by Team Leaders who have the responsibility to assure that the program is properly implemented. The following sections identify the roles and responsibilities for EPC-CP personnel, contractors, and program interfaces.

4.1.2.1 Group Leader

- Assure that the program has adequate resources (e.g., budget, staffing, etc.,) and that qualified staff properly gather and evaluate information submitted to the Environmental Protection Agency (EPA) as required by the MSGP Program.
- Sign Discharge Monitoring Reports (DMR), Annual Reports, Quarterly Visual Assessment Certifications, and change NOIs prior to submittal to the EPA.
- Ensure that program personnel conduct procurements in accordance with P840-1, *Quality Assurance for Procurements*.
- Plan, conduct, and document periodic management assessments and Management Observation and Verifications (MOVs) of MSGP Program activities as required by P328-3 and P328-4.

4.1.2.2 Storm Water Permitting/Compliance Team Leader

- Ensure that program personnel perform the work areas/types associated with the MSGP Program in accordance with the processes, procedures, and requirements specified in this plan.
- Ensure all MSGP Program personnel have the appropriate level of education, experience, and training to perform their job duties.
- Ensure that the most recent versions of the quality-related documents are used for all activities.
- Monitor and trend MSGP Program performance and track deficiencies.

- Support Facility Operations Directors (FODs) and DEPs with the implementation of corrective actions in a timely manner.
- Sign/submit DMRs, Annual Reports, Quarterly Visual Assessment Certifications, etc.
- Ensure PIP meets minimum specifications for documentation and records required by ADESH-QAP-001, *ADESH Quality Assurance Plan*.
- Conduct periodic reviews of records and documentation for accuracy, applicability, and to ensure compliance.
- Provide oversight and ensure that monitoring requirements are followed in accordance with the MSGP Program.
- Ensure that all required compliance documents are submitted to EPA in accordance with the MSGP.
- Recommend to Group Leader contracting items and services.
- Assist the Group Leader in planning and implementing management assessments and MOVs.
- Identify issues, concerns, or problems that warrant management assessment.
- Oversee resolution and correction of all problems found during management assessments.

4.1.2.3 MSGP Program Lead

- Perform MSGP Program related activities as assigned by the Storm Water Permitting/Compliance Team Leader.
- Engage other team members to support implementation of the MSGP Program.
- Support DEPs and permitted industrial facility owners with the implementation of corrective actions in a timely manner.
- Ensure analytical instruments used in the field are calibrated as per Institutional Procedure P330-2, *Control and Calibration of Measuring and Test Equipment (M&TE)*. Periodically review and update the calibration procedures to ensure permit requirements are met.
- Identify opportunities for process improvement, health and safety enhancement, environmenal protection, or other improvements of the program's operations.
- Ensure deficiencies are reported to the Storm Water Permitting/Compliance Team Leader in a timely manner.
- Implement a monitoring program as required by the MSGP.
- Ensure DMRs are prepared and submitted as required by the MSGP Program.
- Review documents for accuracy and completeness to assure that the requirements of the MSGP are met.

- Oversee data quality assessments prior to submittal of monthly, quarterly, and annual DMRs.
- Ensure procedures for sample handling and control during sample preparation, retrieval and analysis are followed.
- Identify issues, concerns, or problems that warrant management assessment.
- Periodically evaluate corrective actions to determine if there are issues that need to be entered into the Issues Management Tool.
- Oversee preparation, conduct quality review, and submit all required compliance documents (e.g., Notice of Intent (NOI)/Notice of Termination (NOT), DMRs, Annual Reports, and correspondence) to EPA.
- Oversee preparation and conduct quality review of Stormwater Pollution Prevention Plans (SWPPP) coordinated with the responsible organization.

4.1.2.4 Storm Water Tracking System/Discharge Monitoring Report Manager

- Perform MSGP Program related activities as assigned by the Storm Water Permitting/Compliance Team Leader.
- Serve as database administrator for the Storm Water Tracking System (SWTS) and Discharge Monitoring Report modules in EIM.
- Maintain current MSGP station and monitoring requirement configuration content in SWTS.
- Ensure all results from sampling are returned and are eligible for reporting.
- Assist MSGP Program Lead in conducting data quality assurance review.
- Conduct data quality assessments prior to submittal of monthly, quarterly, and annual DMRs.
- Ensure compliance reports (NOI/NOT, DMRs, and Annual Reports) are prepared as required by the MSGP.
- Prepare stormwater DMRs for the Multi-Sector General Permit program.

4.1.2.5 MSGP Personnel

- Perform MSGP Program related activities as assigned by the Storm Water Permitting & Compliance Team Leader.
- Implement approved processes and procedures for any equipment and instrumentation used to collect field data (i.e., visual assessment parameters, temperature, and pH).
- Mentor and train new personnel, as needed.
- Conduct sampling activities in accordance with approved processes and procedures.

- Perform sample handling and control during sample preparation, retrieval, and analysis in accordance with approved processes and procedures.
- Notify the MSGP Program Lead immediately upon discovery of field parameter(s) (visual assessment parameters, temperature, and/or pH) exceedances.
- Conduct QA check of methods/equipment.
- Procure sampling equipment (i.e., bottles, standards, preservatives) in accordance with P840-1, *Quality Assurance for Procurements*. Order materials and supplies in accordance with LANL protocol.

4.1.2.6 EIM Database Administrator

- Coordinate with the Subcontract Technical Representative (STR) to ensure that formal contracts are in place to support MSGP Program compliance activities.
- Coordinate with the STR to oversee contract analytical laboratories and ensure they follow the DOE Analytical Services Program.
- Coordinate with the STR to ensure that the off-site laboratory participates in the DOE Consolidated Audit Program and that the analytical laboratory has been audited on an annual basis.
- Maintain and administer the database.
- Provide role-related database access.
- Maintain facility and personnel configuration content, permit-defined lists of limited values (LLVs), and e-mail notification distribution lists.
- Ship/transport samples to the correct off-site analytical laboratory for analysis.
- Maintain and administer sampling plans and sample documentation.
- Load analytical data into the EIM database and run auto-validation checks.
- Manage analytical laboratory data packages.

4.1.2.7 Corrective Action Reporting Database Administrator

- Maintain and administer the database.
- Provide role-related database access.
- Maintain facility and personnel configuration content, permit-defined lists of limited values (LLVs), and e-mail notification distribution lists.

4.1.2.8 Maintenance Connection Database Administrator

- Maintain and administer the database.
- Provide role-related database access.

- Maintain facility and personnel configuration content
- Extract data to support preparation of the MSGP Annual Report.

4.1.3 Internal Interfaces

4.1.3.1 Facility Operations Directors

The FOD provides organizational leadership to ensure that all facility and programmatic activities under their authority are performed in compliance with the MSGP. The FOD is also responsible for establishing an environmental compliance envelope. It is the FOD's responsibility to maintain trained and qualified DEPs and Waste Management Coordinators on staff under their authority.

4.1.3.2 Permitted Industrial Activity Facility Owner/Operator

The permitted industrial activity facility owner/operator is the organization or individual(s) designated by management to oversee the day-to-day operation and maintenance of each facility and its associated stormwater outfalls. The designated owner/operator may be the Facility Operations Manager, Maintenance Manager, or Group Leader that is responsible for the buildings, facilities, and areas where the stormwater outfall is located. The MSGP Program interfaces with the owners/operators to assist in determining appropriate maintenance, corrective actions, inspections, site walks, and monitoring.

4.1.3.3 Deployed Environmental Professional

DEPs are embedded within FODS as assigned by the Deployed Environment Professionals Team Leader. The DEP provides daily environmental oversight, guidance, and support to the FOD and each designated permitted industrial facility owner/operator. The MSGP Program interfaces with the DEPs regularly to coordinate outfall surveys, inspections, site walks, and monitoring. The DEP performs the following MSGP activities.

- Act as a liaison between the industrial operating facilities, the FOD, and EPC-CP.
- Write and update the facility-specific MSGP SWPPP.
- Conduct Routine Facility Inspections.
- Document, update, and coordinate correction of identified conditions requiring corrective actions.
- Identify personnel within industrial operating facilities requiring training.
- Update MSGP facility specific training and present the training annually.

4.1.3.4 Sample Management Office

The EPC-CP SMO is the central point for all analytical laboratory selection, evaluations, sample submittal, and data return. The SMO performs the following activities.

- Evaluates potential analytical laboratories, prepares analytical statements of work that include requirements, and arrange contracts with selected laboratories for analysis of all samples.
- Accepts samples from field collection personnel, prepares the sample for shipment, ships the samples to the off-site analytical laboratories, and receives the data packages from the laboratories.
- Analytical data is received from analytical laboratories in electronic format and uploaded into a database. Received data is checked for completeness and adherence to contract requirements. After uploading, data undergoes verification and validation for evidence of laboratory contamination, improper analytical method, and other analytical issues, which could potentially affect data quality.
- Field data collected by sample collection personnel is verified and entered into the EIM by SMO personnel when field personnel deliver samples to the SMO.
- If significant verification and validation issues are identified, results are forwarded to and discussed with the responsible program leads.
- Data issues that result from procedural failures, personnel errors, or other failures to follow requirements are documented as issues and corrected according to P322-4, *Issues Management*.

4.1.4 External Interfaces

4.1.4.1 Environmental Protection Agency

The EPA Region 6 issues and administers NPDES Permits in the State of New Mexico. The MSGP Program interfaces with the EPA, as needed, to complete permit applications, support permit development, support public comments and meetings, and ensure compliance with the NPDES MSGP.

4.1.4.2 New Mexico Environmental Department

The New Mexico Environmental Department (NMED) Surface Water Quality Bureau assists the EPA with compliance evaluations, monitoring and Section 401(a), Clean Water Act certification through a joint federal and state agreement. Section 401(a) requires that all federally issued permits are certified by the state in which the discharge occurs and that the effluent limits set forth in the permit issued adheres to state water quality standards. The MSGP Program interfaces with the NMED as needed to ensure compliance with the Permit.

4.1.4.3 National Nuclear Safety Administration/Los Alamos Field Office

The National Nuclear Safety Administration (NNSA)/Los Alamos Field Office is the LANL facility owner and is responsible for providing oversight of LANL operations. It is the responsibility of the Los Alamos Field Office to ensure that the LANL operates in compliance with all state and federal

regulations. The MSGP Program interfaces with the Los Alamos Field Office as needed to ensure compliance with the Permit.

4.1.4.4 Analytical Laboratory Contractors

An independent off-site analytical laboratory performs analytical services for the MSGP Program. The analytical laboratory is required to participate in the DOE Consolidated Audit Program; maintain positive control of samples, perform analyses for samples received, and report sample results as specified in statements of work and internal procedures. The STR and SMO personnel interface with the off-site analytical laboratory. Interface between MSGP Program personnel and the analytical laboratory is conducted with the STR and SMO oversight, as needed, to ensure that samples are handled correctly and that analytical results are received per the contract requirements.

4.2 Criterion 2 – Management/Personnel Training and Qualification

The Storm Water Permitting/Compliance Team Leader shall determine skills, knowledge, and abilities required to perform MSGP Program work area/type activities. Program personnel will be qualified and trained in accordance with P781-1, *Conduct of Training* and ADESH-TPP-301, *ADESH Training Program Plan*. The Storm Water Permitting/Compliance Team Leader assigns minimum training requirements using a training plan. The Triad Human Resources Division maintains documentation of education qualification. Table 4.2 provides a summary of the qualification and training requirements for the MSGP Program.

Table 4.2 Management/Personnel Training and Qualification		
Key Personnel/Role	**Qualification Standard**	**Program Specific Training**
Storm Water Permitting/Compliance Team Leader	• EPC-CP Manager Qualification Standard • EPC-CP Group Qualification Standard • EPC-CP-QS-2005, Stormwater Inspector Qualification Standard • EPC-CP-QS-2006, Stormwater Pollution Prevention Plan Preparer Qualification Standard • EPC-CP-QS-2007, Stormwater Design Reviewer Qualification Standard	EPC-CP-PIP-2101
MSGP Program Lead, MSGP Personnel	• EPC-CP Group Qualification Standard • EPC-CP-QS-2005, Stormwater Inspector Qualification Standard • EPC-CP-QS-2006, Stormwater Pollution Prevention Plan Preparer Qualification Standard • EPC-CP-QS-2007, Stormwater Design Reviewer Qualification Standard*	
Discharge Monitoring Report Manager	• EPC-CP Group Qualification Standard	
Database Adminstrator	• EPC-CP Group Qualification Standard	
* As required by job duties.		

4.3 Criterion 3 – Management/Quality Improvement

The MSGP Program adheres to the EPC-CP-QAP-001 principles of problem prevention and continuous improvement. The MSGP Program Lead will evaluate improvement opportunities identified by trending and reporting.

4.3.1 Performance Reporting

Personnel involved in activities associated with the MSGP Program are encouraged to provide periodic updates, either verbal or written, to the MSGP Program Lead. The program uses these updates to determine areas that require attention and corrective actions.

4.3.2 Corrective Actions

Corrective actions for all EPC-CP programs and projects are initiated, tracked, corrected, and documented according to P330-6, *Nonconformance Control and Reporting,* P322-4, *Issues Management,* ADESH-QAP-001, *ADESH Quality Assurance Plan,* and Group procedures. A corrective action that meets any of the following criteria will be entered into the Issues Management Tool that will be screened as high, medium, or low.

- Corrective action was not completed by the expected completion date.
- A schedule is sent to the EPA Region 6 requesting an extension of the 45-day timeframe to complete a corrective action and corrective action was not completed by the required completion date provided in the letter.
- Repeat corrective actions or trends identified by EPC-CP personnel.
- Conditions requiring immediate action, where failure to take action would result in pollutants being released to a water body of the State or an immediate non-compliance with the MSGP.
- Violations identified by the regulatory authority.
- Other issues as deemed necessary by EPC-CP personnel.

4.4 Criterion 4 – Management/Documents and Records

4.4.1 Document Control

Procedures, permits, NOIs, NOTs, reports, and quality affecting correspondence are controlled by the organization's document control system (ESH-AP-007, *Document Control*). As a Best Management Practice (BMP), EPC-CP keeps an approved hard copy of the MSGP as well as all of the reapplication materials associated with the permit.

Controlled copies of EPC documents are located on the Internet:

- https://edrms.lanl.gov/edrms/?docbase=lanldocs&locateId=0b02a68c800079c1, all other copies are uncontrolled.

Phone calls, emails, or fax communications are documented and controlled if the content provides direction or results in decisions.

4.4.2 Procedures

Procedures that implement the work area/type scope identified in this PIP will be developed and controlled, as needed, in accordance with ADESH-QAP-001, *ADESH Quality Assurance Plan,* ESH-AP-007, *Document Control*, and EPC-CP-QP-0901, *EPC-CP Quality Procedure to Supplement ESH-AP-007, Document Control*.

4.4.3 Electronic Media

The MSGP utilizes electronic means as necessary to maintain data. Databases used to hold data and generate reports to be used in demonstrating compliance are maintained on a common drive of a server or on a cloud platform. These databases are backed-up daily to minimize potential loss of data. The database administrator(s) control access to these databases, allowing only trained authorized personnel access to the databases.

EIM (https://www.locusfocus.com/eim/eim.cfm) is a cloud-based database information system designed in part to support the information management needs of the Laboratory's MSGP. MSGP

support includes analytical data management, stormwater discharge monitoring reporting, Geographic Information System (GIS) development, and other information management activities as needed.

Maintenance Connection (https://www.maintenanceconnection.com/mcv18/online/mc_login.htm) is a cloud-based computerized maintenance management system, or CMMS, used to manage MSGP field activities such as monitoring station installation and removal, inspections, maintenance, sample collection and retrieval, visual inspections, and information management change controls for data stored in Maintenance Connection and in the SWTS Module in EIM.

The MSGP Corrective Action Reporting (MSGP CAR) database https://epc.lanl.gov is a Laboratory-managed Oracle APEX database and associated administration module that tracks corrective action data.

4.4.4 Records Management

Records are maintained and available for auditing in accordance with ADESH-AP-006, *Records Management Plan*. The Storm Water Permitting/Compliance Team generates and retains records to ensure compliance with monitoring and recordkeeping requirements as specified by the Laboratory, DOE, and the EPA. Records kept by the MSGP Program include the following:

- Copy of the MSGP
- Annual Reports
- Discharge Monitoring Reports
- Corrective Action Reports
- Notices of Intent (NOIs) and Notices of Termination (NOTs)
- Reports and certifications required by the MSGP
- Data used for compliance purposes
- Inspection forms
- Logbook entries and/or field forms to document inspection and monitoring activity
- Equipment and instrument calibration and maintenance records
- QA documents
- General correspondence that affects the program (e.g., phone calls, emails, log entries, faxes that provide directions or results in decisions)
- Applicable IWDs
- General MSGP compliance documents (correspondence with regulators and stakeholders, notice of change conditions, etc.)

Analytical data packages are stored in EDRMS and are available for public viewing on the Intellus New Mexico website.

The DEPs assigned to the FOD in which an industrial facility resides keep, as part of the Stormwater Pollution Prevention Plan, the following records pertaining to that facility.

- Stormwater Pollution Prevention Plan
- Reports and certifications required by the MSGP
- Routine Facility Inspection forms
- Visual Assessment forms
- Corrective Action Reports
- Discharge Monitoring Reports
- Annual Reports

All monitoring data shall be collected in accordance with the requirements specified in the MSGP. Triad submits monitoring results to EPA within 60 days of the end of the monitoring period. All Annual Reports and DMRs must be submitted electronically in accordance with the MSGP. Most information required to be submitted by the MSGP is submitted vital EPA's electronic tool CDX electronic reporting website (cdx.epa.gov), unless the permit states otherwise or unless a waiver has been granted.

Triad keeps copies of the following documentation for a period of at least 3 years from the date that LANL's coverage under the MSGP expires or is terminated.

- SWPPP (including any modifications made during the term of the MSGP)
- Additional documentation requirements as identified in Section 5.5 of the MSGP
- All reports and certifications required by the MSGP
- Monitoring data
- Records of all data used to complete the NOI.

4.5 Criterion 5 – Performance/Work Processes

Work that contributes to achieving the quality specifications of the MSGP deliverables, is planned and documented, as described in this document and implementing procedures.

Work is performed according to applicable plans and implementing procedures. The Program Lead provides first line supervision of personnel assigned to program tasks to ensure work is performed to achieve program quality specifications. Before changing a work process that affects the program quality specifications, the Program Lead ensures the same level of planning and review as used in the initial program planning steps.

4.5.1 Work Processes

All work should be regarded as a process. Each process consists of a series of actions and is planned and carried out by qualified workers using specified work processes and equipment under

administrative, technical, and environmental controls established by management to achieve an end result. Workers are the best resource of contributing ideas for improving work processes and will be involved in work process design, process evaluation, and providing the feedback necessary for improvement.

Work is planned and performed using the principles of Integrated Safety Management and is in compliance with P300, *Integrated Work Management for Work Activities*.

4.5.2 Stormwater Pollution Prevention Plans

Stormwater Pollution Prevention Plan (SWPPP) development and implementation by the regulated industrial facility is required for MSGP compliance (refer to Sections 5.0 and 8.0 of the MSGP for general SWPPP requirements and Sector-Specific Requirements for Industrial Activity, and Attachment 2, *MSGP Facilities and Monitored Outfalls Associated with Industrial Activity*). The SWPPP is intended to document the selection, design, and installation of control measures. Additional documentation requirements are intended to document the implementation (including inspection, maintenance, monitoring, and corrective action) requirements identified in the MSGP. The SWPPP is a written assessment of potential sources of pollutants in stormwater runoff and control measures that are implemented at the specific industrial facility to minimize the discharge of pollutants in runoff from the site. These control measures include site-specific BMPs, inspections, employee training, and reporting. The plans and procedures detailed in the SWPPP must be implemented by the facility and updated as necessary, with a copy of the SWPPP kept on-site.

The SWPPP development process involves evaluating regulated industrial activities and requires FOD and Operational support for implementation, improvement, and revision of the plans. EPC-CP personnel follow guidance in EPC Division and Group documents including the most current revision of EPC-CP-QP-2110, *MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance*.

4.5.3 Inspections

The MSGP requires periodic inspection of industrial processes and maintenance of BMPs to assure effectiveness of control measures. The Laboratory has implemented a routine inspection process (e.g., monthly or quarterly) of facilities permitted under the MSGP to support this determination. For information about how to perform a Routine Facility Inspection and how to complete the associated form, refer to the most current revision of EPC-CP-QP-2108, *MSGP Routine Facility Inspections.*

Visual assessments are also required by the MSGP as an important tool for collecting information to determine the effectiveness of controls in preventing potential contaminants from migrating off Laboratory property. Accordingly, field personnel conduct visual assessments for stormwater collected at the monitoring stations or discharged through substantially identical outfalls associated with industrial facilities located throughout the Laboratory. Information recorded documents all observations that are required by the MSGP. For information about how to perform a Visual Assessment and how to complete the associated form, refer to the most current revision of EPC-CP-QP-2105*, MSGP Stormwater Visual Assessments*.

4.5.4 Stormwater Corrective Actions

It is critical that the Laboratory be able to effectively inspect and maintain the BMPs that have been installed at various locations. Quarterly inspections are completed and provided to the Program Lead for inclusion into the records system. In addition, the Program Lead accompanies the DEPs on the last Routine Facility Inspection of the year. All identified conditions requiring corrective action are summarized in an Annual Report submitted EPA each year. Laboratory management has made an investment in time and materials, in addition to a commitment to minimizing the potential migration of contaminants in stormwater. Report findings are evaluated and in conjunction with facility personnel, BMPs are modified, installed, or removed as necessary. EPC-CP personnel will follow guidance in EPC Division and Group documents including the most current revision of EPC-CP-QP-022, *MSGP Corrective Actions*.

4.5.4.1 Responding to Water Quality Exceedances

Federal stormwater regulations implemented under the Laboratory's MSGP require that corrective action be taken if exceedances of water quality standards or MSGP numeric effluent limits are identified. The identification of a pollutant source(s) contributing to a water quality exceedance is addressed through the creation of a condition requiring corrective action that is entered into the MSGP CAR database in accordance with EPC-CP-QP-022, *MSGP Corrective Actions*. Corrective actions are typically accomplished by modifying, as appropriate, existing BMPs and SWPPPs or installing new BMPs.

When a water quality exceedance occurs, the MSGP Data Administrator assures the analytical data is reviewed and submitted on the required DMR. The Program Lead enters the exceedance as a condition requiring corrective action in the MSGP CAR database. DEPs, and other SWPPP team members then investigate the occurrence, implement corrective action and document all corrective actions taken.

When an exceedance of the MSGP benchmark parameters is detected, the same process is followed as identified for a water quality exceedance above.

4.5.5 Stormwater Monitoring

The MSGP requires stormwater monitoring to address three separate criteria: Quarterly Benchmark, Effluent Limitations, and Impaired Waters. Refer to Attachment 2, *MSGP Facilities Associated with Industrial Activity* for a list of Laboratory sites that have monitoring requirements. Stormwater monitoring is conducted by EPC-CP personnel in accordance with the MSGP, EPC-CP procedures, and the current year MSGP Sampling and Analysis Plan. Considerations to be used for MSGP stormwater monitoring include, but may not be limited to, MSGP requirements, State water quality standards, and Administrative Authority requests.

Quarterly benchmark monitoring is used for determining the effectiveness of stormwater controls and, corrective actions for meeting the requirements of the MSGP. Four benchmark stormwater samples per year are required under the MSGP, but it is not necessary to collect them in consecutive quarters if climatic conditions that prevented quarterly collection are documented (see *Adverse Weather Conditions* in Part 6.1.5 of the MSGP). Stormwater monitoring results are used to

demonstrate compliance with water quality standards and requirements to evaluate results against benchmark parameters.

Annual Impaired Waters stormwater discharge monitoring of all pollutants for which a waterbody is impaired and for which a standard analytical method exists (see 40 CFR Part 136) is required. The canyons within and surrounding the Laboratory are declared as impaired waters by the New Mexico Environment Department. The pollutants vary from canyon to canyon. The impaired waters pollutants are evaluated and published biannually by NMED in the Clean Water Act §303(d)/305(b) Integrated Report (IR). The pollutants may be discontinued in subsequent annual monitoring if the concentration is below background levels in stormwater or if the constituent is not detected for three consecutive years.

MSGP analytical methods applicable to LANL are consistent with the requirements of 40 CFR Part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants.*

Since LANL is located in an area where limited rainfall occurs during parts of the year (i.e., in a semi-arid climate) and has periods of freezing conditions, Triad has identified an alternative monitoring period, as allowed by the Permit, of four quarters as follows for each calendar year.

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

Documentation of the rationale for no monitoring or inspections due to adverse weather conditions must be included in the facility specific SWPPP. Adverse weather conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, or electrical storms, or situations that otherwise make sampling impractical, such as drought or extended frozen conditions.

Compliance is tracked by performing inspections of samplers and other associated equipment, and inspecting BMPs. Adequate records are maintained to demonstrate the operating history of essential instrumentation and equipment.

Triad operates and maintains systems of monitoring, control, and related equipment that are installed or used to achieve compliance with the MSGP and the SWPPP. Backup instrumentation and equipment will be timely deployed in the event of equipment failure.

Instrument calibration is essential for documenting the quality of data obtained with the instrument. Technical work that depends upon the accuracy of data is performed using equipment for which the calibration status and limits of accuracy are known and controlled.

Field team personnel calibrate and perform maintenance procedures on all monitoring and analytical field instruments to ensure accuracy of measurements and maintain appropriate records of such activities. Calibrations are documented as prescribed by procedures or manufacturer's instructions.

Any persons involved in the preparation, retrieval, and analysis must maintain positive control of samples at all times until sample disposal. Chain of custody responsibilities are summarized in Table 4.5.5-1. EPC-CP personnel follow guidance in EPC Division documents including the most current revision of:

- EPC-CP-TP-2102, Installing, Setting Up, and Operating ISCO Samplers;
- EPC-CP-TP-2103, Inspecting Stormwater Runoff Samplers and Retrieving Samples for the MSGP;
- EPC-CP-QP-2104, Installing, Inspecting, and Maintaining MSGP Single Stage Samplers;
- EPC-CP-QP-2111, Per- and Polyfluoroalkyl Substances (PFAS) Sampling for EPC-CP Surface Water Programs; and
- EPC-CP-QP-2106, Processing MSGP Stormwater Samples.

Table 4.5.5-1 Chain of Custody

Activity	Responsibility
Sample collection and preparation	All persons (other than analytical personnel) performing sample preparation and collection are trained to sample collection procedures and adhere to the chain of custody requirements therein.
Analysis	Analytical laboratories performing sample analysis maintain sufficient procedures to ensure positive control of samples as specified in the existing Statement of Work.
Storage/Disposal	Analytical laboratories maintain/retained samples and/or sample portions under chain of custody until reanalysis, or ultimate disposal.

The EPC-CP SMO is the central point of contact for analytical laboratory selection, evaluations, sample submittal, and data return. See Section 4.1.3.3 for SMO roles and responsibilities.

4.5.5.1 Quality Control Samples

The planning and coordination of each sampling event and/or monitoring period may include the following quality control (QC) samples to detect potential sources of sample contamination or to track analytical laboratory performance:

- **Equipment Rinsate Blank:** A sample of analyte-free water that is prepared in the field using the appropriate sampling equipment with an aliquot of deionized (DI) or certified contaminant-free water that is processed using applicable field equipment in the same manner as the samples.
- **Field Duplicates:** Two samples taken from and representative of the same population and carried through all steps of the sampling and analytical procedures in an identical manner.

Duplicate samples are used to assess variance of the total method including sampling and analysis.

- **Trip Blank:** Samples of analyte-free water that are prepared in the laboratory using DI or certified contaminant-free water and preserved as required. Trip blanks are used for volatile organic compound (VOC) samples only. Trip blanks are transported, unopened, to the field with other sample containers, handled like environmental samples and shipped to the analytical laboratory for analysis with the collected samples. VOC samples are not a requirement of the MSGP.
- **Field Blank:** A sample of analyte-free water that is prepared in the field using a clean sample container.

The MSGP Program Lead shall consider and include, at a minimum, the collection of QC samples at the frequencies identified in Table 4.5.5.1-1.

Table 4.5.5.1-1 Quality Control Sampling Requirements

Sample Type	Analysis	Frequency
Equipment Rinsate Blank	PFAS, o	At the MSGP Program Lead's discretion.
Field Blank and/or Field Duplicate	Includes all analytical groups	10% of samples or a minimum of one per calendar year.

PFAS= Per- and polyfluoroalkyl substances

All QC samples shall be collected in accordance with procedures provided in EPC-CP-QP-3027, Sample Containers, Preservation, and Field Quality Control.

4.5.6 Reporting

4.5.6.1 Discharge Monitoring Reports

DMRs are prepared in accordance with the most recent version of the procedure for generating DMRs using the DMR module in EIM. The DMR module is used to prepare the DMR in two formats: a paper form (EPA Form 3320-1) which may be printed as a hard copy or saved as a PDF, and an electronic comma-separated value file for import into the NetDMR electronic reporting system. The Laboratory is required to submit DMRs to EPA electronically using the NetDMR system and to keep a printed copy with the facility-specific SWPPP.

DMRs are due in the NetDMR system no later than 60 days following each monitoring period. NetDMR is accessed via EPA's Central Data Exchange (CDX) website (https://cdx.epa.gov/). The DMR manager may import DMRs into NetDMR; however, a designated EPC Signatory Official or Authorized Representative may only submit the DMRs for NPDES Permits. NetDMR roles and permissions for these functions are described on the NetDMR Support Portal (https://netdmr.zendesk.com/hc/en-us).

4.5.6.2 Annual Reports

The Laboratory is required to submit an annual report electronically to the EPA that includes a summary of the findings from inspections and corrective action documentation. The documentation includes the following:

- Information relative to whether a waiver was granted, by whom, and the date the waiver was approved;
- The NPDES Permit Tracking Number;
- A summary of the past year's routine facility inspection documentation (see Part 3.1.2 of the MSGP);
- A summary of your past years quarterly visual assessment documentation (see Part 3.2.2 of the MSGP);
- A summary of the corrective action documentation over the past year (see Part 4.4 of the MSGP); and
- For a four-sample average benchmark monitoring exceedance, if after reviewing the selection, design, installation, and implementation of the site's control measures and considering whether any modifications are necessary to meet the effluent limits in the permit, personnel determine that no further pollutant reductions are technologically available and economically practicable and achievable in light of best industry practice and the rationale for why it is believed no further reduction are achievable (see Part 6.2.1.2 of the MSGP).
- The annual report is submitted electronically via the NetMSGP program service via EPA's CDX website. The annual report may be submitted on a paper form (EPA Form 6100-28) if the Laboratory has been granted a waiver from electronic reporting by the applicable EPA Regional Office.

4.6 Criterion 6 – Performance/Design

Design activities are conducted and reviewed in accordance with:

- PD340, Conduct of Engineering and Configuration Management for Facility Work;
- P341, Facility Engineering Processes Manual and;
- P342, Engineering Standards.

Design standards under this program include, but are not limited to temporary and permanent BMPs, corrective action measures, and stormwater monitoring support.

Design inputs are specified and approved on a timely basis for making design decisions. Inputs contain the level of detail required to permit the performance of design activities correctly.

Formal design reviews, including design verifications and evaluation of design changes, are conducted to ensure that the design input is correctly incorporated into the design output. Changes

to design will undergo the same review as the original design. A Professional Engineer must stamp engineered designs.

Verification and validation of the adequacy of designs are conducted before relying on the performance of the design function. Verification and validation are conducted in accordance with implementing procedures.

4.7 Criterion 7 – Performance/Procurement

Items and services required to perform the scope for the MSGP Program are commercial grade in nature and no special procurement requirements or needs are necessary. All procurements of equipment, supplies, and/or services will be made in accordance with P840-1, *Quality Assurance for Procurements*.

4.8 Criterion 8 – Performance/Inspection and Acceptance Testing

Materials and services used in this program will be inspected and/or tested prior to acceptance in accordance with P330-8, *Inspection and Test*. Most supplies used during performance of program activities are commercial grade in nature and require no special acceptance practices or procedures.

4.9 Criterion 9 – Assessment/Management Assessment

The EPC-CP Group Leader conducts management assessments and/or MOV assessments of the MSGP Program work areas/types in accordance with P328-3, *Management Assessment* and *P328-4, Management Observation and Verification*. Assessments are documented and filed as records in accordance with ADESH-AP-006, *Records Management*. Violations of requirements and/or findings from management assessments and MOVs will initiate a nonconformance report in accordance with P330-6 Nonconformance Reporting. Corrective actions to resolve the nonconforming services or processes are tracked and documented in accordance with P322-4, *Issues Management*.

4.10 Criterion 10 – Assessment/Independent Assessment

Independent assessments are those assessments conducted by organizations external to EPC-CP. As required by the SD330, *Los Alamos National Laboratory Quality Assurance Program*, this program may be assessed by outside organizations in accordance with P328-2, *Independent Assessment.*

Annual audits/assessments will be conducted, with input from the Storm Water Permitting/Compliance Team Leader identifying one or more areas of the program to be audited each year. If a violation of requirements is found during an independent audit/assessment, a nonconformance report is initiated in accordance with P330-6, *Nonconformance Control and Reporting*. Corrective actions are tracked and documented in accordance with P322-4, *Issues Management*.

4.11 Suspect/Counterfeit Items Prevention

Suspect/Counterfeit items (S/CI) are prevented from being purchased by Triad at LANL. Potential S/CI are prevented, detected, reported and investigated in accordance with the procedures defined in the LANL procedure P330-9, Suspect/Counterfeit Items (S/CI).

4.12 Safety Software Quality Assurance Requirements for Nuclear Facilities

This section is only applicable for nuclear facilities in accordance with DOE Order 414.1D, Attachment 1 Contractor Requirements Document (CRD), Section 1.b. As such, this section is not applicable to the NPDES MSGP Program.

5.0 IMPLEMENTATION

The requirements of this document are effective on the date provided on the cover page.

6.0 TRAINING

The required training associated with this document is as follows and is documented in accordance with ADESH-TPP-301*, ADESH Training Program Plan.* Training for EPC-CP MSGP employees, DEPs, and subcontractors must be assigned and tracked using UTrain, the institutional training records management system.

- Self-study of this procedure (required reading) is required for all MSGP Program employees, including subcontractors.

7.0 DOCUMENTS AND RECORDS

The ESHQSS DCRM is the Office of Record for this document and maintains the administrative record. Documents and records must be maintained in accordance with PD1020, *Document Control and Records Management;* ESH-AP-007, *Document Control*; and ADESH-AP-006, *Records Management Plan.*

8.0 DEFINITIONS AND ACRONYMS

Use the LANL *Definition of Terms* and those in SD330.

Use the LANL *Acronym Master List*.

BMP	Best Management Practice
CFR	Code of Federal Regulations
CRD	Contractor Requirements Document
DCRM	Document Control and Records Management
DEP	Deployed Environmental Professional
DMR	Discharge Monitoring Report
DOE	Department of Energy
ESHQSS	Environment, Safety, Health, Quality, Safeguards, and Security

EPC-CP	Environmental Protection and Compliance-Compliance Programs
EIM	Environmental Information Management
ELG	Effluent Limitations Guidelines
EPA	Environmental Protection Agency
FOD	Facility Operations Director
LANL	Los Alamos National Laboratory
MSGP	Multi-Sector General Program
MOV	Management Observation and Verification
NeT	NPDES eReporting Tool
NOI	Notice of Intent
NOT	Notice of Termination
NMED	New Mexico Environmental Department
NNSA	National Nuclear Safety Administration
NPDES	National Pollutant Discharge Elimination System
PIP	Program Implementation Plan
QA	Quality Assurance
QBM	Quarterly Benchmark Monitoring
S/CI	Suspect/Counterfeit Items
STR	Subcontract Technical Representative
SMO	Sample Management Office
SWPPP	Stormwater Pollution Prevention Plan
SWTS	Storm Water Tracking Module

9.0 REFERENCES

The latest document revision, available through LANL's Electronic Document and Records Management System, shall be used unless otherwise specified.

Prime Contract

DOE Order 414.1D, Chg. 1, *Quality Assurance*

NPDES MSGP

40 CFR Part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants*

Clean Water Act, Title 33 U.S.C. 1251

20.6 Part 4 NMAC, Standards for Interstate Surface Waters

LANL Documents:

SD330, *Los Alamos National Laboratory Quality Assurance Program*

P101-17, *Excavation/Fill/Soil Disturbance*

P300, *Integrated Work Management for Work Activities*

P322-4, *Issues Management*

P328-2, *Independent Assessment*

P328-3, *Management Assessment*

P328-4, *Management Observation and Verification*

P330-2, *Control and Calibration of Measuring and Test Equipment (M&TE)*

P330-6, *Nonconformance Control and Reporting*

P330-8, *Inspection and Test*

P330-9, *Suspect/Counterfeit Items (S/CI)*

P340, *Conduct of Engineering and Configuration Management for Facility W*ork

P341, *Facility Engineering Process Manual*

P342, *Engineering Standards*

EPC-ES-FSD-001, *Implementing Environmental Requirements*

EPC-CP-FSD-001, *Water Quality*

P781-1 *Conduct of Training*

P840-1, *Quality Assurance for Procurements*

P1040, *Software Quality Management*

PD1020, *Document Control and Records Management*

EPC Documents:

ADESH-AP-006, *Records Management Plan*

ESH-AP-007, *Document Control*

ADESH-TPP-301*, ADESH Training Program Plan*

ADESH-QAP-001, *ADESH Quality Assurance Plan*

EPC-DO-QP-100, *General Field Safety*

EPC-CP-QAP-001, *Environmental Compliance Programs Quality Assurance Plan*

EPC-CP-QAP-901, *EPC-CP Quality Procedure to Supplement ESH-AP-007, Document Control*

ENV-RCRA-QP-026, *PR-ID and EX-ID Review Process*

EPC-CP-QP-022, *MSGP Corrective Actions*

EPC-CP-QP-2104, *Installing, Inspecting, and Maintaining MSGP Single Stage Samplers*

EPC-CP-QP-2105*, MSGP Stormwater Visual Assessments*

EPC-CP-QP-2106*, Processing MSGP Stormwater Samples*

EPC-CP-QP-2107, *Preparing Discharge Monitoring Reports for the NPDES Multi-Sector General Permit*

EPC-CP-QP-2108, *MSGP Routine Facility Inspections*

EPC-CP-QP-2110, *MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance*

EPC-CP-TP-2102, *Installing, Setting Up, and Operating ISCO Samplers*

EPC-CP-TP-2103, *Inspecting Stormwater Runoff Samplers and Retrieving Samples for the MSGP*

10.0 APPENDICIES

Appendix A: NPDES Multi-Sector General Permit Program Management Level Determination, MLDS-TA-60-324 Rev. 0

Appendix B: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for Environmental Information Management System

Appendix C: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for the MSGP Corrective Action Reporting Database

Appendix D: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for Maintenance Connection and Maintenance Connection Express

11.0 ATTACHMENTS

Attachment 1: Summary of QA Requirements and Program-Level (Local) Work Practices

Attachment 2: MSGP Facilities Associated with Industrial Activity

12.0 CONTACT INFORMATION

Entity: EPC-CP Group Leader

Name: Taunia Van Valkenburg

Telephone: (505) 665-9827

E-mail: tauniav@lanl.gov

Website: https://int.lanl.gov/org/ddops/aldeshqss/environmental-protection/index.shtml

Appendix A: NPDES Multi-Sector General Permit Program Management Level Determination, MLDS-TA-60-324 Rev. 0

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Los Alamos NATIONAL LABORATORY EST. 1943

NPDES Multi-Sector Construction General Permit Program Management Level Determination *Conduct of Engineering*

MLDS No.: MLDS-TA-60-324 Rev.: 0 Page 1 of

1.0 SYSTEM INFORMATION			
1.1 TA No.: All	1.2 Facility No.: All	1.3 Facility Name: All LANL	
1.4 Facility Hazard Category:	☐ Nuclear Facility	☒ Nonnuclear Facility	
☐ HC-2 ☐ HC-3 ☐ Less than HC-3	☐ Chemical High-PSM ☐ Chemical High-non-PSM ☐ Chemical Moderate ☒ Chemical Low	☐ Accelerator ☐ Firing Range ☐ Biological ☐ Explosive	
1.5 Operating System ID: WSTWTR	1.6 Operating System Name: Waste Water		
1.7 System ID: STW	1.8 System Name: Storm Water – Multi-Sector General Permit Program		

2.0 SECURITY CLASSIFICATION REVIEW
2.1 Security Classification: Unclassified
2.2 DC/RO: *(Name, Z Number, Organization, Signature, Date)* Taunia Van Valkenburg, 145666, EPC-CP 12/16/19

3.0 SYSTEM MANAGEMENT LEVEL DETERMINATION ANALYSIS		
3.1 Does this system meet one of the criteria below? If "Yes", then check the applicable criteria, insert the safety function(s) and safety analysis reference(s), and go to Section 4.0 and designate the system as ML-1.		Yes ☐ No ☒
• The system is an SSC of a Hazard Category 2 or 3 Nuclear Facility that performs Documented Safety Analysis (DSA) designated Safety Class (SC) function(s).		☐
• The system is an SSC of an Accelerator Facility that performs Safety Assessment Document (SAD) designated public protection function(s).		☐
• The system is an SSC of a High Hazard Nonnuclear Facility that performs function(s) identified in the Facility Safety Analysis (FSA) for protection of the public.		☐
If "No" is checked then go to Field 3.2		
No.	SC or public protection functions as defined by Safety Analysis	DSA, SAD, or FSA Reference
3.1-1	N/A	N/A
3.1-2	N/A	N/A
3.1-3	N/A	N/A
3.2 Does this system meet one of the criteria below? If "Yes", then check the applicable criteria, insert the safety function(s) and safety analysis reference(s), and go to Section 4.0 and designate the system as ML-2.		Yes ☐ No ☒

LANL
Form No: AP-341-502-FM01, Rev. 6
Form Effective Date: 02/07/18

ES-DO-20-032

Appendix A: NPDES Multi-Sector General Permit Program Management Level Determination, MLDS-TA-60-324 Rev. 0 (cont.)

(Page 2 of 4)

Los Alamos NATIONAL LABORATORY

NPDES ~~Construction~~ Multi-Sector General Permit Program Management Level Determination *Conduct of Engineering*

MLDS No.: MLDS-TA-60-324 Rev.: 0 Page 2 of

- The system is an SSC of a Hazard Category 2 or 3 Nuclear Facility that performs DSA designated Safety Significant (SS) function(s). ☐
- The system is an SSC of an Accelerator Facility that performs SAD designated worker protection function(s). ☐
- The system is an SSC of a High Hazard Nonnuclear Facility that performs function(s) identified in the FSA for protection of the uninvolved or noninvolved worker. ☐

If "No" is checked then go to Field 3.3.

No.	SS functions or worker protection functions as defined by Safety Analysis	DSA, SAD, or FSA Reference
3.2-1	N/A	N/A
3.2-2	N/A	N/A
3.2-3	N/A	N/A

3.3 Does this system meet one of the criteria below? If "Yes", then check the applicable criteria, insert the function(s) and safety analysis or Facility Management reference(s), and go to Section 4.0 and designate the system as ML-3. Yes ☐ No ☒

LANL
Form No: AP-341-502-FM01, Rev. 6
Form Effective Date: 02/07/18

Appendix A: NPDES Multi-Sector General Permit Program Management Level Determination, MLDS-TA-60-324 Rev. 0 (cont.)

(Page 3 of 4)

Los Alamos NATIONAL LABORATORY EST 1943

Conduct of Engineering
NPDES ~~Construction~~ Multi-Sector General Permit Program
Management Level Determination

MLDS No.: MLDS-TA-60-324 Rev.: 0 Page 3 of

- The system is an SSC of a Hazard Category 2 or 3 Nuclear Facility that is designated Other Hazard Control (OHC) in the DSA. ☐
- The system is an SSC that performs function(s) for protection of Category I or II Special Nuclear Material (SNM) or Classified Matter as determined by the Facility Management. ☐
- The system is an SSC of a Moderate Hazard Nonnuclear Facility that performs function(s) identified in the FSA for protection of uninvolved or noninvolved worker and the Facility Management requires enhanced engineering, quality, or maintenance support above national codes and standards requirements. ☐
- The system is an SSC that performs important function(s) for compliance with Waste Acceptance Criteria (WAC) for a Waste Receiving Site and as determined by the Facility Management. ☐
- The system is an SSC that performs function(s) for radiation protection that are not covered in the Radiation Protection Safety Management Program (SMP) and are considered important to normal, abnormal, or emergency response by the Facility Management ☐
- The system is an SSC that performs function(s) for environmental protection that are called out in a permit or used to demonstrate environmental compliance that are considered important by the Facility Management. (See discussion below) ☒
- The system is an SSC that performs function(s) that are essential to the facility mission as determined by the Facility Management. ☐

Evaluation. This MLDS is for the overall Multi-Sector General Permit (MSGP) Program at LANL, which is responsible for monitoring the storm water discharges at the outfalls to meet Water Quality Standards. The MSGP Program is responsible for the following:

- Determines inspection requirements, how often to conduct these inspections and what to monitor for;
- Evaluates sample results and compares those results to established effluent limits;
- Provides storm water discharge summary reports to the associated enforcement agencies at a predetermined reporting frequency;
- Works with the enforcement agencies to address identified issues.

In summary, this MLDS is associated with a program and not equipment. There is nothing in the program that would require it to be elevated to ML-3. While the program may rely on equipment to support permit requirements, the equipment (as applicable) should be evaluated separately form the program to determine the appropriate management level

If "No" is checked then go to Field 3.4

No.	OHC Functions defined by Safety Analysis or other ML-3 functions as determined by Facility Management	DSA or Facility Management Reference
3.3-1	Obtain permit coverage (NOI) and modification	N/A
3.3-2	Permit implementation	N/A
3.3-3	Compliance inspections	N/A
3.3-4	Data management	N/A

LANL
Form No: AP-341-502-FM01, Rev. 6
Form Effective Date: 02/07/18

Appendix A: NPDES Multi-Sector General Permit Program Management Level Determination, MLDS-TA-60-324 Rev. 0 (cont.)

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Los Alamos NATIONAL LABORATORY

Conduct of Engineering
NPDES ~~Construction~~ Multi-Sector General Permit Program Management Level Determination

MLDS No.: MLDS-TA-60-324 Rev.: 0 Page 4 of

3.3-5	Reporting	N/A
3.4 If the System does not meet any of the criteria in fields 3.1, 3.2, or 3.3, then designate the system as ML-4 in Section 4.0.		

4.0 SYSTEM MANAGEMENT LEVEL DESIGNATION

ML-1 ☐ ML-2 ☐ ML-3 ☐ ML-4 ☒

5.0 APPROVALS

5.1 Responsible Engineer *(Name, Z Number, Organization, Signature, and Date)*
Terrill Lemke, 120092, EPC-CP [signature] 11/25/19

5.2 Verifier *(Name, Z Number, Organization, Signature, and Date)*
Taunia Van Valkenburg, 145666, EPC-CP [signature] 12/11/19

5.3 Facility Design Authority Representative *(Name, Z Number, Organization, Signature, and Date)*
Jason Apperson, 222827, ES-DO [signature] 12/12/19

6.0 REVISIONS

Rev. No.	Date	Description	RE	Verifier	FDAR
0		Original Issue			

Appendix B: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for Environmental Information Management System

(Page 1 of 4)

Los Alamos NATIONAL LABORATORY EST. 1943

Reference No: _____

Form 2033

The Software Owner RLM must retain completed forms as a record.

Safety/Non-Safety Software Determination, Categorization, and Software Risk Level (SRL)

(See Page 5 for Guidance)

Part 1: Document the rationale supporting the reasonable probability that the software may be safety software, or risk significant software.

1.1 Excluding personal productivity software that does not provide calculation output (e.g., e-mail software, presentation software), indicate whether the software is or will be used in connection with the design, analysis and/or operation of:

- ☐ a nuclear (including radiological) facility (Ref. LANL Nuclear Facility List, Conduct of Operations Resources Website), or
- ☐ an accelerator, live-firing range, biological hazard facility, high explosive facility, or moderate- or high- chemical hazard facility as determined using SBP111-1, *Facility Hazard Categorization and Documentation*; or
- ☐ LANL's Essential Functions as described in SEO-COOP-006, *LANL NA-LA Continuity of Operations (COOP) Plan*.

Provide supporting comments (as necessary to document the selection above).

Part 2: Document the software information, software application(s) and software function(s). A separate form may be used for each software item or one form may be used for multiple software items.

2.1 Provide software name(s).	2.2 Provide software version(s).	2.3 Indicate software owner (SO).	2.4 Indicate SO organization.
EIM	N/A	John McCann	EPC-CP

2.5 Provide a description of the specific facility application(s) to sufficient detail to allow the software to be readily traceable to the point(s) of application within the facility. Include technical area (TA) and building number; or, site-wide or Facility Operating Directorate (FOD)-wide use. Add other descriptive information as required.

EIM is a cloud-based software service used by the EPC-CP personnel to support and streamline various activities related to enviromental sampling and management, including: sample planning development/documentation, sample tracking/chain-of-custody, quality checks, and reporting. This software can be used by anyone at LANL associated with environmental sampling.

2.6 Indicate System, Structure or Components (SSCs) controlled or affected by the software. Indicate NA if not applicable.

N/A

2.6.1 Provide SSC name(s).

N/A

2.6.2 Provide functional requirement(s) of the software associated with the SSC.

N/A

2.6.3 Provide reference document(s) describing the SSC/software.

N/A

Provide supporting comments (as required).

N/A

2.7 Indicate facility classification (SBP111-1), design, or analysis controlled or affected by the software. Indicate NA if not applicable.

N/A

2.7.1 Provide facility classification, design or analysis name.

N/A

2.7.2 Provide software functional requirement(s) associated with the facility classification, design or analysis.

N/A

2.7.3 Provide reference document(s) describing the facility classification, design, or analysis.

N/A

Provide supporting comments (as required).

N/A

Appendix B: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for Environmental Information Management System (cont.)

(Page 2 of 4)

2.8 Indicate the hazard control, Safety Management Program (SMP) and or technical safety requirements (TSRs) controlled or affected by the software. Indicate NA if not applicable. N/A 2.8.1 Provide the hazard control, SMP and/or TSR name. N/A 2.8.2 Provide the software functional requirement(s) for the hazard control, SMP and/or TSR. N/A 2.8.3 Provide reference document(s) describing the hazard control, SMP and/or TSR. N/A Provide supporting comments (as required). N/A	

Part 3: Determine whether the software type is (1) safety software; or (2) non-safety software and the associated category for each type.		
3.1 Check **one** of the following (3.1.1 through 3.1.5) to determine one of the two software types (safety software or non-safety software) and one of the associated 5 categories for each type (i.e. Categories include SSS, SHADS or SMACS for safety software; and, Risk Significant or Commercially Controlled for non-safety software). **Note**: If software is determined to be safety software or risk significant software, complete all parts of this form. If software is determined to be commercially controlled software, complete all parts of this form **except for Part 4**.		
3.1.1 Safety software: SSS ☐	This is software for a nuclear (including radiological) facility that performs, or will perform a safety function as part of a Structure, System, and Component (SSC) and is cited in either (a) a Department of Energy (DOE)-approved documented safety analysis; or, (b) an approved hazard analysis per DOE P 450.4A, *Integrated Safety Management Policy* and 48 Code of Federal Regulations (CFR) 970-5223-1, *Integration of Environment, Safety, and Health into Work Planning and Execution*. This is safety software and is categorized as Safety System Software (SSS). Provide supporting comments (as required).	
3.1.2 Safety software: SHADS ☐	This is software that is used, or will be used to classify, design, or analyze nuclear (including radiological) facilities. This software is not part of an SSC, but helps to ensure the proper accident or hazards analysis of nuclear (including radiological) facilities or an SSC that performs a safety function. This is safety software and is categorized as Safety and Hazard Analysis Software and Design Software (SHADS). Provide supporting comments (as required).	
3.1.3 Safety software: SMACS ☐	☐	This is software that performs or will perform a hazard control function in support of nuclear (including radiological) facility radiological safety management programs (SMPs) or technical safety requirements (TSRs). This is safety software and is categorized as Safety Management and Administrative Controls Software (SMACS). Provide supporting comments (as required).
	☐	This is software that performs, or will perform a control function in support of a nuclear (including radiological) facility necessary to provide adequate protection from nuclear (including radiological) facility radiological hazards. It supports eliminating, limiting, or mitigating nuclear hazards to workers, the public, or the environment as addressed in 10 CFR 830, *Nuclear Safety Management*, 10 CFR 835, *Occupational Radiation Protection*, and the Department of Energy Acquisition Regulation (DEAR) Integrated Safety Management System (ISMS) clause 48 CFR 970.5223-1, *Integration of Environment, Safety, and Health into Work Planning and Execution*. This is safety software and is categorized as Safety Management and Administrative Controls Software (SMACS). Provide supporting comments (as required).
3.1.4 Non-safety software: Risk Significant ☐	This is software that is, or will be used for any of the purposes that safety software is used for only such purposes are in or for an accelerator, live-firing range, biological hazard facility, high explosive facility, or moderate- or high- chemical hazard facility OR, failure of the software would prevent LANL from performing Essential Functions as described in SEO-COOP-006, *LANL NA-LA Continuity of Operations (COOP) Plan*. This is non-safety software and is categorized as Risk Significant software. Provide supporting comments (as required).	

Appendix B: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for Environmental Information Management System (cont.)

(Page 3 of 4)

3.1.5 Non-safety software: Commercially Controlled ☒	This is software that is not, or will not be used for any of the above purposes in 3.1.1–3.1.4. Such software may be acquired (including commercial off the shelf (COTS)) or designed software. Examples of this software include personal productivity software (e.g., Microsoft PowerPoint, Oracle Project Primavera, MS Outlook, etc.) and other types of software (e.g., some business accounting systems, facility personnel comfort temperature monitoring systems).This is non-safety software and is categorized as Commercially Controlled software. Proceed to **Part 5.** Part 4 is not required. Provide supporting comments (as required). EIM is a cloud-based software tool used to streamline the collection and retention of environmental sampling and analysis data, and meets the Laboratory's obligation to publish all environmental data for public access. While analytical results are made available to anyone (output/customer-side), all approved user interactions (user-side) and software-related activities are controlled through approved procedures (various EPC-CP QPs, and EPC-ES TPs and Guides). While the approved/authorized use of this software item is important to completion of program goals, its use is not consistent with any of the purposes described above in 3.1.1 - 3.1.4. Various LANL Nuclear Facility Documented Safety Analyses (DSAs) discuss sampling within the Hazardous Material Protection Program (HMPP) Safety Management Plan (SMP); however, the DSAs do not explicitly credit any such sampling process or tool (including software) for providing a hazard control function. A failure, modification, or missuse of this software item may cause program-level complications, delays, or operational issues (e.g. sample reporting errors, etc.); however, it is extremely unlikely that such an event (i.e. on its own/without a separate failure of a credited safety system) would adversely effect a facility SSC Safety Function (per 3.1.1), a SSC design analysis (per 3.1.2), an administrative control function (per 3.1.3) as described in any LANL facility DSA, or an COOP Essential Function (per 3.1.4). As such, the EIM software item, as used within the approved EPC-CP scope of work (does not cover any other LANL program/group scope), is considered Non-Safety/Commercially Controlled software.

Part 4: Determine the Software Risk Level (SRL).	
4.1	Complete this section for safety software and risk significant software only. Do not complete this section for commercially controlled software. Check **only one** of the following to determine the SRL. Text shown in *[brackets]* is applicable to safety software only.
SRL 1 ☐	4.1.1 This level includes software applications that meet one or more of the following criteria. Failure of the software could: ▪ *[Compromise a limiting condition for operation].* ▪ *[Cause a reduction in the safety margin for a safety SSC that is cited in a DOE approved documented safety analysis.]* ▪ Cause a reduction in the safety margin for other systems such as toxic or chemical protection systems that are cited in either (a) a DOE approved documented safety analysis or (b) an approved hazard analysis per DOE P 450.4A, *Integrated Safety Management Policy*, and the DEAR ISMS clause (48 CFR 970.5223-1, *Integration of Environment, Safety, and Health into Work Planning and Execution*). ▪ Result in non-conservative safety analysis, design, or misclassification of facilities or SSCs. Provide supporting comments (as required).
SRL 2 ☐	4.1.2 This level includes *[safety]* software applications that do not meet SRL 1 criteria, but meet one or more of the following criteria: ▪ *[Safety management databases used to aid in decision making whose failure could impact safety SSC operation.]* ▪ Software failure that could result in incorrect analysis, design, monitoring, alarming, or recording of hazardous exposures to workers or the public. ▪ *[Software failure could compromise the defense-in-depth capability for a nuclear (including radiological) facility.]* Provide supporting comments (as required).
SRL 3 ☐	4.1.3 This level includes software applications that do not meet SRL 2 criteria, but meet one or more of the following criteria. Failure of the software could: ▪ Cause a potential violation of regulatory permitting requirements. ▪ Affect environment, safety, health monitoring, or alarming systems. ▪ Affect the safe operation of an SSC. Provide supporting comments (as required).

Appendix B: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for Environmental Information Management System (cont.)

(Page 4 of 4)

Part 5: Attest to compliant completion, review and approve. A signature is required in 5.1, 5.2 and 5.3 for all completed 2033 Forms.	
5.1 As the Software Owner (SO), I have determined the software type, category, and as appropriate, SRL, in accordance with P1040, *Software Quality Management* and the instructions associated with this form. Provide Name/Z No. (print) John MCCann, 115625	Signature, Date 11-6-2019
5.2 As the Software Owner Responsible Line Manager (SO RLM or SRLM), I have reviewed and approve the determination of the software type, category and, as appropriate, SRL for the software as described on this form. Provide Name/Z No. (print) Taunia Van Valkenburg, 145666	Signature, Date 11/6/2019
5.3 As the ☒ Facility Design Authority Representative (FDAR) for my representative facilities, as the ☐ LANL Design Authority (DA), or, as the ☐ Responsible Associate Laboratory Director (RALD), I have reviewed and approve the determination of the software type, category and, as appropriate, SRL for the software as described on this form. Check one. Provide Name/Z No. (print) Jason Apperson, 222827 **Note:** The RALD is authorized to review and approve Form 2033 (rather than the FDAR or DA) for software applications where, **as determined by the FDAR or DA**, the FDAR or DA does not have the knowledge and/or a reasonable connection to the software.	Signature, Date 11/19/19

Supporting Comments Continuation Page

As needed, use this space to provide supporting comments. Provide the Form section number that corresponds to the comments.

Appendix C: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for the MSGP Corrective Action Reporting Database

(Page 1 of 4)

Los Alamos NATIONAL LABORATORY EST.1943

Form 2033

Reference No: ____

The Software Owner RLM must retain completed forms as a record.

Safety/Non-Safety Software Determination, Categorization, and Software Risk Level (SRL)

(See Page 5 for Guidance)

Part 1: Document the rationale supporting the reasonable probability that the software may be safety software, or risk significant software.

1.1 Excluding personal productivity software that does not provide calculation output (e.g., e-mail software, presentation software), indicate whether the software is or will be used in connection with the design, analysis and/or operation of:

- ☐ a nuclear (including radiological) facility (Ref. LANL Nuclear Facility List, Conduct of Operations Resources Website), or
- ☐ an accelerator, live-firing range, biological hazard facility, high explosive facility, or moderate- or high- chemical hazard facility as determined using SBP111-1, *Facility Hazard Categorization and Documentation*; or
- ☐ LANL's Essential Functions as described in SEO-COOP-006, *LANL NA-LA Continuity of Operations (COOP) Plan.*

Provide supporting comments (as necessary to document the selection above).

Part 2: Document the software information, software application(s) and software function(s). A separate form may be used for each software item or one form may be used for multiple software items.

2.1 Provide software name(s).	2.2 Provide software version(s).	2.3 Indicate software owner (SO).	2.4 Indicate SO organization.
MSGP Corrective Action Reporting Database and corresponding APEX administrative module	Oracle Fusion Middleware Forms Services 12C and Oracle APEX	Holly Wheeler	SAE-4

2.5 Provide a description of the specific facility application(s) to sufficient detail to allow the software to be readily traceable to the point(s) of application within the facility. Include technical area (TA) and building number; or, site-wide or Facility Operating Directorate (FOD)-wide use. Add other descriptive information as required.

The MSGP Corrective Action Reporting (CAR) Database and APEX are software tools used to facilitate the documentation, tracking, and closure of conditions requiring corrective action identified by MSGP Storm Water Permitting and Compliance or DESH personel. These software tools can be used by anyone at LANL associated with the MSGP Storm Water Program.

2.6 Indicate System, Structure or Components (SSCs) controlled or affected by the software. Indicate NA if not applicable.

N/A

2.6.1 Provide SSC name(s).

N/A

2.6.2 Provide functional requirement(s) of the software associated with the SSC.

N/A

2.6.3 Provide reference document(s) describing the SSC/software.

N/A

Provide supporting comments (as required).

N/A

2.7 Indicate facility classification (SBP111-1), design, or analysis controlled or affected by the software. Indicate NA if not applicable.

N/A

2.7.1 Provide facility classification, design or analysis name.

N/A

2.7.2 Provide software functional requirement(s) associated with the facility classification, design or analysis.

N/A

2.7.3 Provide reference document(s) describing the facility classification, design, or analysis.

N/A

Provide supporting comments (as required).

N/A

Appendix C: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for the MSGP Corrective Action Reporting Database (cont.)

(Page 2 of 4)

2.8 Indicate the hazard control, Safety Management Program (SMP) and or technical safety requirements (TSRs) controlled or affected by the software. Indicate NA if not applicable.

N/A

2.8.1 Provide the hazard control, SMP and/or TSR name.

N/A

2.8.2 Provide the software functional requirement(s) for the hazard control, SMP and/or TSR.

N/A

2.8.3 Provide reference document(s) describing the hazard control, SMP and/or TSR.

N/A

Provide supporting comments (as required).

N/A

Part 3: Determine whether the software type is (1) safety software; or (2) non-safety software and the associated category for each type.

3.1 Check **one** of the following (3.1.1 through 3.1.5) to determine one of the two software types (safety software or non-safety software) and one of the associated 5 categories for each type (i.e. Categories include SSS, SHADS or SMACS for safety software; and, Risk Significant or Commercially Controlled for non-safety software).

Note: If software is determined to be safety software or risk significant software, complete all parts of this form. If software is determined to be commercially controlled software, complete all parts of this form **except for Part 4**.

3.1.1 Safety software: SSS ☐	This is software for a nuclear (including radiological) facility that performs, or will perform a safety function as part of a Structure, System, and Component (SSC) and is cited in either (a) a Department of Energy (DOE)-approved documented safety analysis; or, (b) an approved hazard analysis per DOE P 450.4A, *Integrated Safety Management Policy* and 48 Code of Federal Regulations (CFR) 970-5223-1, *Integration of Environment, Safety, and Health into Work Planning and Execution.* This is safety software and is categorized as Safety System Software (SSS). Provide supporting comments (as required).	
3.1.2 Safety software: SHADS ☐	This is software that is used, or will be used to classify, design, or analyze nuclear (including radiological) facilities. This software is not part of an SSC, but helps to ensure the proper accident or hazards analysis of nuclear (including radiological) facilities or an SSC that performs a safety function. This is safety software and is categorized as Safety and Hazard Analysis Software and Design Software (SHADS). Provide supporting comments (as required).	
3.1.3 Safety software: SMACS ☐	☐	This is software that performs or will perform a hazard control function in support of nuclear (including radiological) facility radiological safety management programs (SMPs) or technical safety requirements (TSRs). This is safety software and is categorized as Safety Management and Administrative Controls Software (SMACS). Provide supporting comments (as required).
	☐	This is software that performs, or will perform a control function in support of a nuclear (including radiological) facility necessary to provide adequate protection from nuclear (including radiological) facility radiological hazards. It supports eliminating, limiting, or mitigating nuclear hazards to workers, the public, or the environment as addressed in 10 CFR 830, *Nuclear Safety Management,* 10 CFR 835, *Occupational Radiation Protection*, and the Department of Energy Acquisition Regulation (DEAR) Integrated Safety Management System (ISMS) clause 48 CFR 970.5223-1, *Integration of Environment, Safety, and Health into Work Planning and Execution.* This is safety software and is categorized as Safety Management and Administrative Controls Software (SMACS). Provide supporting comments (as required).
3.1.4 Non-safety software: Risk Significant ☐	This is software that is, or will be used for any of the purposes that safety software is used for only such purposes are in or for an accelerator, live-firing range, biological hazard facility, high explosive facility, or moderate- or high- chemical hazard facility OR, failure of the software would prevent LANL from performing Essential Functions as described in SEO-COOP-006, *LANL NA-LA Continuity of Operations (COOP) Plan.* This is non-safety software and is categorized as Risk Significant software. Provide supporting comments (as required).	

Appendix C: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for the MSGP Corrective Action Reporting Database (cont.)

(Page 3 of 4)

3.1.5 Non-safety software: Commercially Controlled ☒	This is software that is not, or will not be used for any of the above purposes in 3.1.1–3.1.4. Such software may be acquired (including commercial off the shelf (COTS)) or designed software. Examples of this software include personal productivity software (e.g., Microsoft PowerPoint, Oracle Project Primavera, MS Outlook, etc.) and other types of software (e.g., some business accounting systems, facility personnel comfort temperature monitoring systems). This is non-safety software and is categorized as Commercially Controlled software. Proceed to **Part 5**. Part 4 is not required. Provide supporting comments (as required). The MSGP CAR Database and APEX are software tools used to track corrective actions from initiation to closure. All approved user interactions and software-related activities are controlled through approved procedures (most directly through EPC-CP-QP-022). While the approved/authorized use of these software items are important to completion of program goals, their use is not consistent with any of the purposes described above in 3.1.1 - 3.1.4. Various LANL Nuclear Facility Documented Safety Analyses (DSAs) mention Quality Improvement within the Quality Assurance (QA) Safety Management Program (SMP). CARs are an important element of any such process within the QA SMP; however, LANL facility DSAs do not explicitly credit any such CAR process or tool (including software) for providing a hazard control function. The failure, modification, or missuse of these software items may cause MSGP program-level complications, delays, or operational issues (e.g. delay or additional effort required to status and close CA items); however, it is extremely unlikely that such an event would adversely effect a facility SSC Safety Function (per 3.1.1), a SSC design analysis (per 3.1.2), an administrative control function (per 3.1.3) as described in any LANL facility DSA, or an COOP Essential Function (per 3.1.4). As such, the MSGP CAR Database and APEX software items are considered Non-Safety/Commercially Controlled software.

Part 4: Determine the Software Risk Level (SRL).	
4.1	Complete this section for safety software and risk significant software only. Do not complete this section for commercially controlled software. Check **only one** of the following to determine the SRL. Text shown in *[brackets]* is applicable to safety software only.
SRL 1 ☐	4.1.1 This level includes software applications that meet one or more of the following criteria. Failure of the software could: ▪ *[Compromise a limiting condition for operation].* ▪ *[Cause a reduction in the safety margin for a safety SSC that is cited in a DOE approved documented safety analysis.]* ▪ Cause a reduction in the safety margin for other systems such as toxic or chemical protection systems that are cited in either (a) a DOE approved documented safety analysis or (b) an approved hazard analysis per DOE P 450.4A, *Integrated Safety Management Policy*, and the DEAR ISMS clause (48 CFR 970.5223-1, *Integration of Environment, Safety, and Health into Work Planning and Execution*). ▪ Result in non-conservative safety analysis, design, or misclassification of facilities or SSCs. Provide supporting comments (as required).
SRL 2 ☐	4.1.2 This level includes *[safety]* software applications that do not meet SRL 1 criteria, but meet one or more of the following criteria: ▪ *[Safety management databases used to aid in decision making whose failure could impact safety SSC operation.]* ▪ Software failure that could result in incorrect analysis, design, monitoring, alarming, or recording of hazardous exposures to workers or the public. ▪ *[Software failure could compromise the defense-in-depth capability for a nuclear (including radiological) facility.]* Provide supporting comments (as required).
SRL 3 ☐	4.1.3 This level includes software applications that do not meet SRL 2 criteria, but meet one or more of the following criteria. Failure of the software could: ▪ Cause a potential violation of regulatory permitting requirements. ▪ Affect environment, safety, health monitoring, or alarming systems. ▪ Affect the safe operation of an SSC. Provide supporting comments (as required).

Part 5: Attest to compliant completion, review and approve. A signature is required in 5.1, 5.2 and 5.3 for all completed 2033 Forms.

Form 2033 (7/19) Page 3

Appendix C: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for the MSGP Corrective Action Reporting Database (cont.)

(Page 4 of 4)

5.1 As the Software Owner (SO), I have determined the software type, category, and as appropriate, SRL, in accordance with P1040, *Software Quality Management* and the instructions associated with this form. Provide Name/Z No. (print) Holly Wheeler, 118432	Signature, Date 11/06/2019
5.2 As the Software Owner Responsible Line Manager (SO RLM or SRLM), I have reviewed and approve the determination of the software type, category and, as appropriate, SRL for the software as described on this form. Provide Name/Z No. (print) Taunia Van Valkenburg, 45666	Signature, Date 11/6/2019
5.3 As the ☒ Facility Design Authority Representative (FDAR) for my representative facilities, as the ☐ LANL Design Authority (DA), or, as the ☐ Responsible Associate Laboratory Director (RALD), I have reviewed and approve the determination of the software type, category and, as appropriate, SRL for the software as described on this form. Check one. Provide Name/Z No. (print) Jason Apperson, 222827 **Note:** The RALD is authorized to review and approve Form 2033 (rather than the FDAR or DA) for software applications where, **as determined by the FDAR or DA**, the FDAR or DA does not have the knowledge and/or a reasonable connection to the software.	Signature, Date 11/19/19

Supporting Comments Continuation Page

As needed, use this space to provide supporting comments. Provide the Form section number that corresponds to the comments.

Appendix D: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for Maintenance Connection and Maintenance Connection Express

(Page 1 of 4)

Los Alamos NATIONAL LABORATORY EST. 1943

Form 2033

Reference No: _____

The Software Owner RLM must retain completed forms as a record.

Safety/Non-Safety Software Determination, Categorization, and Software Risk Level (SRL)

(See Page 5 for Guidance)

Part 1: Document the rationale supporting the reasonable probability that the software may be safety software, or risk significant software.

1.1 Excluding personal productivity software that does not provide calculation output (e.g., e-mail software, presentation software), indicate whether the software is or will be used in connection with the design, analysis and/or operation of:

- ☐ a nuclear (including radiological) facility (Ref. LANL Nuclear Facility List, Conduct of Operations Resources Website), or
- ☐ an accelerator, live-firing range, biological hazard facility, high explosive facility, or moderate- or high- chemical hazard facility as determined using SBP111-1, *Facility Hazard Categorization and Documentation*; or
- ☐ LANL's Essential Functions as described in SEO-COOP-006, *LANL NA-LA Continuity of Operations (COOP) Plan*.

Provide supporting comments (as necessary to document the selection above).

Part 2: Document the software information, software application(s) and software function(s). A separate form may be used for each software item or one form may be used for multiple software items.

2.1 Provide software name(s).	2.2 Provide software version(s).	2.3 Indicate software owner (SO).	2.4 Indicate SO organization.
Maintenance Connection and Maintenance Connection Express	N/A	Terrill Lemke (user)	EPC-CP (user org.)

2.5 Provide a description of the specific facility application(s) to sufficient detail to allow the software to be readily traceable to the point(s) of application within the facility. Include technical area (TA) and building number; or, site-wide or Facility Operating Directorate (FOD)-wide use. Add other descriptive information as required.

Maintenance Connection and Maintenance Connection Express are software items used by EPC-CP and DESH personnel associated with Storm Water Programs. They are COTS items used to track work activities conducted by the MSGP Storm Water Permitting and Compliance Team.

2.6 Indicate System, Structure or Components (SSCs) controlled or affected by the software. Indicate NA if not applicable.

N/A

2.6.1 Provide SSC name(s).

N/A

2.6.2 Provide functional requirement(s) of the software associated with the SSC.

N/A

2.6.3 Provide reference document(s) describing the SSC/software.

N/A

Provide supporting comments (as required).

N/A

2.7 Indicate facility classification (SBP111-1), design, or analysis controlled or affected by the software. Indicate NA if not applicable.

N/A

2.7.1 Provide facility classification, design or analysis name.

N/A

2.7.2 Provide software functional requirement(s) associated with the facility classification, design or analysis.

N/A

2.7.3 Provide reference document(s) describing the facility classification, design, or analysis.

N/A

Provide supporting comments (as required).

N/A

Appendix D: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for Maintenance Connection and Maintenance Connection Express (cont.)

(Page 2 of 4)

2.8 Indicate the hazard control, Safety Management Program (SMP) and or technical safety requirements (TSRs) controlled or affected by the software. Indicate NA if not applicable. N/A 2.8.1 Provide the hazard control, SMP and/or TSR name. N/A 2.8.2 Provide the software functional requirement(s) for the hazard control, SMP and/or TSR. N/A 2.8.3 Provide reference document(s) describing the hazard control, SMP and/or TSR. N/A Provide supporting comments (as required). N/A

Part 3: Determine whether the software type is (1) safety software; or (2) non-safety software and the associated category for each type.		
3.1 Check **one** of the following (3.1.1 through 3.1.5) to determine one of the two software types (safety software or non-safety software) and one of the associated 5 categories for each type (i.e. Categories include SSS, SHADS or SMACS for safety software; and, Risk Significant or Commercially Controlled for non-safety software). **Note**: If software is determined to be safety software or risk significant software, complete all parts of this form. If software is determined to be commercially controlled software, complete all parts of this form **except for Part 4**.		
3.1.1 Safety software: SSS ☐	This is software for a nuclear (including radiological) facility that performs, or will perform a safety function as part of a Structure, System, and Component (SSC) and is cited in either (a) a Department of Energy (DOE)-approved documented safety analysis; or, (b) an approved hazard analysis per DOE P 450.4A, *Integrated Safety Management Policy* and 48 Code of Federal Regulations (CFR) 970-5223-1, *Integration of Environment, Safety, and Health into Work Planning and Execution.* This is safety software and is categorized as Safety System Software (SSS). Provide supporting comments (as required).	
3.1.2 Safety software: SHADS ☐	This is software that is used, or will be used to classify, design, or analyze nuclear (including radiological) facilities. This software is not part of an SSC, but helps to ensure the proper accident or hazards analysis of nuclear (including radiological) facilities or an SSC that performs a safety function. This is safety software and is categorized as Safety and Hazard Analysis Software and Design Software (SHADS). Provide supporting comments (as required).	
3.1.3 Safety software: SMACS ☐	☐	This is software that performs or will perform a hazard control function in support of nuclear (including radiological) facility radiological safety management programs (SMPs) or technical safety requirements (TSRs). This is safety software and is categorized as Safety Management and Administrative Controls Software (SMACS). Provide supporting comments (as required).
	☐	This is software that performs, or will perform a control function in support of a nuclear (including radiological) facility necessary to provide adequate protection from nuclear (including radiological) facility radiological hazards. It supports eliminating, limiting, or mitigating nuclear hazards to workers, the public, or the environment as addressed in 10 CFR 830, *Nuclear Safety Management,* 10 CFR 835, *Occupational Radiation Protection*, and the Department of Energy Acquisition Regulation (DEAR) Integrated Safety Management System (ISMS) clause 48 CFR 970.5223-1, *Integration of Environment, Safety, and Health into Work Planning and Execution*. This is safety software and is categorized as Safety Management and Administrative Controls Software (SMACS). Provide supporting comments (as required).
3.1.4 Non-safety software: Risk Significant ☐	This is software that is, or will be used for any of the purposes that safety software is used for only such purposes are in or for an accelerator, live-firing range, biological hazard facility, high explosive facility, or moderate- or high- chemical hazard facility OR, failure of the software would prevent LANL from performing Essential Functions as described in SEO-COOP-006, *LANL NA-LA Continuity of Operations (COOP) Plan.* This is non-safety software and is categorized as Risk Significant software. Provide supporting comments (as required).	

Appendix D: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for Maintenance Connection and Maintenance Connection Express (cont.)

(Page 3 of 4)

3.1.5 Non-safety software: Commercially Controlled ☒	This is software that is not, or will not be used for any of the above purposes in 3.1.1–3.1.4. Such software may be acquired (including commercial off the shelf (COTS)) or designed software. Examples of this software include personal productivity software (e.g., Microsoft PowerPoint, Oracle Project Primavera, MS Outlook, etc.) and other types of software (e.g., some business accounting systems, facility personnel comfort temperature monitoring systems).This is non-safety software and is categorized as Commercially Controlled software. Proceed to **Part 5**. Part 4 is not required. Provide supporting comments (as required). Maintenance Connection and Maintenance Connection Express are COTS items, which have been configured for use in tracking work activities for the MSGP Storm Water Permitting and Compliance Team. All approved user interactions are controlled through approved procedures (QPa). Software-related activities are controlled through the contract LANL has with Maintenance Connection. While the approved/authorized use of these software items is important to completion of program goals, their use is not consistent with any of the purposes described above in 3.1.1 - 3.1.4. Various LANL Nuclear Facility Documented Safety Analyses (DSAs) make mention of Storm Water Monitoring and/or Sampling as part of the Hazardous Material Protection Program (HMPP) Safety Management Plan; however, all such discussion are limited to general facility permitting requirements, and do not mention an specific methods or tools (including software) used by the MSGP Storm Water Permitting and Compliance Team to complete the associated permitting activities. A failure, modification, or missuse of these software items may cause MSGP program-level complications, delays, or operational issues (e.g. work planning issues); however, it is extremely unlikely that such an event would adversely effect a facility SSC Safety Function (per 3.1.1), a SSC design analysis (per 3.1.2), an administrative control function (per 3.1.3) as identfied in any LANL facility DSA, or a COOP Essential Function (per 3.1.4). As such, the Maintenance Connection and Maintenance Conncection Express software items are considered Non-Safety/Commercially Controlled software.

Part 4: Determine the Software Risk Level (SRL).	
4.1	Complete this section for safety software and risk significant software only. Do not complete this section for commercially controlled software. Check **only one** of the following to determine the SRL. Text shown in *[brackets]* is applicable to safety software only.
SRL 1 ☐	4.1.1 This level includes software applications that meet one or more of the following criteria. Failure of the software could: ▪ *[Compromise a limiting condition for operation].* ▪ *[Cause a reduction in the safety margin for a safety SSC that is cited in a DOE approved documented safety analysis.]* ▪ Cause a reduction in the safety margin for other systems such as toxic or chemical protection systems that are cited in either (a) a DOE approved documented safety analysis or (b) an approved hazard analysis per DOE P 450.4A, *Integrated Safety Management Policy*, and the DEAR ISMS clause (48 CFR 970.5223-1, *Integration of Environment, Safety, and Health into Work Planning and Execution*). ▪ Result in non-conservative safety analysis, design, or misclassification of facilities or SSCs. Provide supporting comments (as required).
SRL 2 ☐	4.1.2 This level includes *[safety]* software applications that do not meet SRL 1 criteria, but meet one or more of the following criteria: ▪ *[Safety management databases used to aid in decision making whose failure could impact safety SSC operation.]* ▪ Software failure that could result in incorrect analysis, design, monitoring, alarming, or recording of hazardous exposures to workers or the public. ▪ *[Software failure could compromise the defense-in-depth capability for a nuclear (including radiological) facility.]* Provide supporting comments (as required).
SRL 3 ☐	4.1.3 This level includes software applications that do not meet SRL 2 criteria, but meet one or more of the following criteria. Failure of the software could: ▪ Cause a potential violation of regulatory permitting requirements. ▪ Affect environment, safety, health monitoring, or alarming systems. ▪ Affect the safe operation of an SSC. Provide supporting comments (as required).

Appendix D: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for Maintenance Connection and Maintenance Connection Express (cont.)

(Page 4 of 4)

Part 5: Attest to compliant completion, review and approve. A signature is required in 5.1, 5.2 and 5.3 for all completed 2033 Forms.	
5.1 As the Software Owner (SO), I have determined the software type, category, and as appropriate, SRL, in accordance with P1040, *Software Quality Management* and the instructions associated with this form. Provide Name/Z No. (print) Terrill Lemke, 120092	Signature, Date 11/7/19
5.2 As the Software Owner Responsible Line Manager (SO RLM or SRLM), I have reviewed and approve the determination of the software type, category and, as appropriate, SRL for the software as described on this form. Provide Name/Z No. (print) Taunia Van Valkenburg, 145666	Signature, Date 11/7/19
5.3 As the ☒ Facility Design Authority Representative (FDAR) for my representative facilities, as the ☐ LANL Design Authority (DA), or, as the ☐ Responsible Associate Laboratory Director (RALD), I have reviewed and approve the determination of the software type, category and, as appropriate, SRL for the software as described on this form. Check one. Provide Name/Z No. (print) Jason Apperson, 222827 **Note:** The RALD is authorized to review and approve Form 2033 (rather than the FDAR or DA) for software applications where, **as determined by the FDAR or DA**, the FDAR or DA does not have the knowledge and/or a reasonable connection to the software.	Signature, Date 11/19/19

Supporting Comments Continuation Page

As needed, use this space to provide supporting comments. Provide the Form section number that corresponds to the comments.

Attachment 1: Summary of QA Requirements and Program-Level (Local) Work Practices

Summary of QA Requirements and Program-Level (Local) Work Practices		
DOE Order 414.1D/SD 330 Requirements	**LANL Work Practice**	**Local Implementing Procedure or QAP section (if applicable)**
CRD Attach. 2, 1. Criterion 1 – Management/Program	LANL organization chart; SD100, *Integrated Safety Management System Description*; PD100, *DOE/NNSA Approved Los Alamos National Laboratory*; 10 CFR 851, *Worker Safety and Health Program*	EPC-CP organization chart; EPC-DO-QP-100; EPC-CP-IWD-2102
CRD Attach. 2, 2. Criterion 2 – Management/Personnel Training and Qualification	PD781, *Training Program Management*; P1040, *Software Quality Management*	EPC-CP-QAP-001; EPC-CP Manager Qualification Standard EPC-CP Group Qualification Standard EPC-CP-QS-2005; EPC-CP-QS-2006; EPC-CP-QS-2007
CRD Attach. 2, 3. Criterion 3 – Management/Quality Improvement	P101-18, *Procedure for Pause/Stop Work*; PD322-4, *Issues Management*; PD324, *LANL Metrics Program*; P330-6, *Nonconformance Control and Reporting*	EPC-CP-QAP-001
CRD Attach. 2, 4. Criterion 4 – Management/Document and Records	PD1020, *Document Control and Records Management*	ADESH-QAP-001; ADESH-AP-006; ESH-AP-007; EPC-CP-QP-0901
CRD Attach. 2, 5. Criterion 5 – Performance/Work Processes	SD100, *Integrated Safety Management System Description Document with embedded 10 CFR 851 Worker Safety and Health Program*; PD100, *DOE/NNSA Approved Los Alamos National Laboratory*; *10 CFR 851 Worker Safety and Health Program Description*; P151-1, *LANL Packaging and Transportation Program Procedure;* PD311, *Requirements System and Hierarchy*;	EPC-CP-PIP-2101, *NPDES Multi-Sector General Permit Program Implementation Plan*; EPC-CP-TP-2102, *Installing, Setting Up, and Operating ISCO Samplers*; EPC-CP-TP-2103, *Inspecting ISCO Stormwater Runoff Samplers and Retrieving Samples*; EPC-CP-QP-2104, *Installing, Inspecting, and Maintaining MSGP Single Stage Samplers*

Summary of QA Requirements and Program-Level (Local) Work Practices		
DOE Order 414.1D / SD 330 Requirements	**LANL Work Practice**	**Local Implementing Procedure or QAP section (if applicable)**
	SD330, *Los Alamos National Laboratory Quality Assurance Program*; PD340, *Conduct of Engineering for Facility Work*; P315, *Conduct of Operations Manual*; P330-2, *Control and Calibration of Measuring and Test Equipment (M&TE)*; SD601, *Conduct of Research and Development*; PD781, *Training Program Management* P1040, *Software Quality Management*	EPC-CP-QP-2105, *MSGP Stormwater Visual Assessments*; EPC-CP-QP-2106, *Processing MSGP Stormwater Samples*; EPC-CP-QP-2107, *Preparing Discharge Monitoring Reports for the NPDES Multi-Sector General Permit*; EPC-CP-QP-2108, *MSGP Routine Facility Inspections*; EPC-CP-QP-022, *MSGP Corrective Actions*; EPC-CP-QP-2110, *MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance* EPC-CP-QP-2111, *Per- and Polyfluoroalkyl Substances (PFAS) Sampling for EPC-CP Surface Water Programs*
CRD Attach. 2, 6. Criterion 6 – Performance/Design	<u>For Facility Work:</u> PD340, *Conduct of Engineering and Configuration Management for Facility Work;* P341, *Facility Engineering Processes Manual;* P342, *Engineering Standards;* Engineering Standards Manual; Functional Series documents; Engineering Administrative Procedures <u>For R&D:</u> PD370, *Conduct of Engineering for Research and Development (R&D)*	No local implementing procedures, LANL Work Practices apply.
CRD Attach. 2, 7. Criterion 7 – Performance/Procurement	P840-1, *Quality Assurance for Procurements*[1]	No local implementing procedures, LANL Work Practices apply.
CRD Attach. 2, 8. Criterion 8 – Performance/Inspection and Acceptance Testing	P330-8, *Inspection and Test*[3]; P330-2, *Control and Calibration of Measuring and Test Equipment (M&TE)*	No local implementing procedures, LANL Work Practices apply.

Summary of QA Requirements and Program-Level (Local) Work Practices

DOE Order 414.1D / SD 330 Requirements	LANL Work Practice	Local Implementing Procedure or QAP section (if applicable)
CRD Attach. 2, 9. Criterion 9 – Assessment/Management Assessment	PD328, *LANL Assessment Program*; P328-3, *Management Assessment*; P328-4, *Management Observation and Verification*	ADESH-QAP-001 EPC-CP-QAP-001
CRD Attach. 2, 10. Criterion 10 – Assessment/Independent Assessment	PD328, *LANL Assessment Program*; P328-2, *Independent Assessment*; P328-4, *Management Observation and Verification*	No local implementing procedures, LANL Work Practices apply.
CRD Attach. 3, Suspect/Counterfeit Items Prevention	P330-9, *Suspect/Counterfeit Items (S/CI)*[1]	No local implementing procedures, LANL Work Practices apply.
CRD Attach. 4, Safety Software Quality Assurance Requirements for Nuclear Facilities[2]	P1040, *Software Quality Management*[2]; Form 2033, *Safety Non-Safety Software Determination, Categorization, and Software Risk Level*	No local implementing procedures, LANL Work Practices apply.

[1] S/CI prevention is also integrated into other listed work processes. Application of the S/CI oversight and prevention process is commensurate with the facility/activity hazards and mission impact. The extent of applicability of S/CI prevention for ML-4 items is as described in P840-1, *Quality Assurance for Procurements*, and P330-9, *Suspect/Counterfeit Items (S/CI).*

[2] DOE Order 414.1D, Chg 1, *Quality Assurance*, Attachment 1 requires that all software meet the applicable quality assurance requirements in Attachment 2 of DOE Order 414.1D, Chg 1, using a graded approach. LANL uses risk levels to grade safety software and risk significant non-safety software. See P1040, Software Quality Management, for additional detail.

[3] For ML-4 items and activities, inspections and tests are performed to extent required by the applicable codes and/or standards.

[4] Core work practices applicable to R&D are described in SD601, *Conduct of Research and Development*.

Attachment 2: MSGP Facilities Associated with Industrial Activities

(Page 1 of 1)

MSGP Facilities Associated with Industrial Activities						
Location	**Permitted Facility**	**Operation**	**Activity**	**Sector**	**Assessment Unit**	**Canyon**
TA-3-22	TA-3-22 Power and Steam Plant	Power Plant	Steam Electric Power	O	NM-9000.A_047	Sandia
TA-3-38	TA-3-38 Carpenter Shop	Timber Products	Fabricated wood products	A	NM-9000.A_047	Sandia
TA-3-38	TA-3-38 Metals Fab Shop	Metal Shop	Fabricated metal products	AA	NM-9000.A_047	Sandia
TA-16	Stockpile Area	Materials Storage	Materials Storage	P	NM-128.A_01	Canyon de Valle
TA-60	TA-60 Asphalt Batch Plant	Asphalt Batch Plant	Asphalt paving	D	NM-9000.A_042	Mortandad
TA-60	TA-60 MRF	Materials Recycling Facility	Scrap recycling	N	NM-9000.A_047	Sandia
TA-60	TA-60 Roads and Grounds	Roads and Grounds Facility	Vehicle maintenance and storage	P	NM-9000.A_042 NM-9000.A_047	Mortandad Sandia
TA-60-1	TA-60-1 Heavy Equipment Yard	Motor Pool	Vehicle maintenance	P	NM-9000.A_047	Sandia
TA-60-2	TA-60-2 Warehouse	Warehousing	Vehicle fueling	P	NM-9000.A_047	Sandia

ATTACHMENT 16: EPC-CP-QP-2108, MSGP ROUTINE FACILITY INSPECTIONS

EPC-CP-QP-2108	Revision: **0**	
Effective Date: 07/09/2020	Next Review Date: 07/09/2023	

Environment, Safety, Health, Quality, Safeguards, and Security Directorate

Environment Protection and Compliance – Compliance Programs Group

Quality Procedure

MSGP Routine Facility Inspections

Hazard Grading: ☒ Low ☐ Moderate ☐ High/Complex

Usage Level: ☒ Reference ☐ UET ☐ Mixed: UET Sections: _____

Status: ☐ New ☐ Major Revision ☐ Minor Revision

☐ Review w/No Changes ☒ Other: New EPC-CP format & numbering system

Safety Basis: ☒ N/A ☐ USQ ☐ USI Number: _____

Document Author/Subject Matter Expert:

Name:	Organization:	Signature:	Date:
Holly L. Wheeler	EPC-CP	Signature on File	07-08-20

Derivative Classifier: ☒ Unclassified or ☐ _____

Name:	Organization:	Signature:	Date:
Steven E. Wolfel	EPC-CP	Signature on File	07-08-20

Approval Signatures:

EPC-CP Reviewer: Alethea Banar	Organization: EPC-CP	Signature: Signature on File	Date: 07-08-20
EPC-CP RLM: Terrill W. Lemke, Team Leader	Organization: EPC-CP	Signature: Signature on File	Date: 07-08-20
EPC-CP RLM: Taunia Van Valkenburg, Group Leader	Organization: EPC-CP	Signature: Signature on File	Date: 07-09-20

REVISION HISTORY

Document Number and Revision *[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]*
EPC-CP-QP-023 R0	05/17/2018	New Document. Process formerly part of procedure ENV-RCRA-QP-022 R2, *MSGP Corrective Actions*.
EPC-CP-QP-023 R1	03/07/2019	Added question to inspection form, associated text to document, and renumbered steps. Removed reference to Los Alamos National Security, LLC. Added reference to LANL BMP Manual. Minor edits made.
EPC-CP-QP-2108, R0	07/09/2020	Supersedes EPC-CP-QP-023 R1. Reformat to new EPC-CP template, re-number procedure and forms to new EPC-CP procedure numbering system, and other edits.

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1.0 INTRODUCTION

The National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP), also referred to as the permit, contains specific environmental requirements for inspecting areas of Los Alamos National Laboratory (LANL) covered by the permit. This includes areas where industrial materials or activities are exposed to stormwater, areas identified as potential pollutant sources, areas where leaks and spills have occurred in the past three years, discharge points, and control measures used to comply with the effluent limits of the MSGP.

LANL inspectors and facility personnel are required to perform routine facility inspections for industrial stormwater discharge on LANL areas covered by the MSGP at least quarterly and document observations. Conditions (as described by the MSGP) found during an inspection, requiring a corrective action(s), are managed through EPC-CP-QP-022, *MSGP Corrective Actions.*

1.1 Purpose

Part 3.1 of the MSGP contains specific requirements for conducting and documenting periodic industrial routine facility inspections. This procedure governs the activities of personnel involved in conducting industrial routine facility inspections. It also contains information and specific steps to be used for identifying and documenting conditions in order to meet the permit requirements.

1.2 Scope

Requirements set forth in this document apply to personnel responsible for meeting the permit conditions on behalf of LANL industrial facilities covered by the MSGP. The MSGP requires periodic inspection of facilities and identification, documentation, and reporting of conditions, including those requiring corrective actions.

Inspections conducted under this procedure are documented using the Maintenance Connection Express™ (MC Express) web application on a tablet or notebook style computer. (In the event of electronic hardware or web application failure, personnel may use a printed hard copy to conduct the inspection.)

1.3 Applicability

This procedure applies to Environmental Protection and Compliance–Compliance Programs (EPC-CP) technical staff, Deployed Environmental Professionals (DEPs), and other LANL staff who conduct inspections and monitoring activities at MSGP regulated LANL facilities.

2.0 ROLES AND RESPONSIBILITIES

Specific roles and responsibilities for implementation of requirements contained in this procedure are provided below.

2.1 EPC-CP MSGP Stormwater Permitting and Compliance Team

EPC-CP MSGP Stormwater Permitting and Compliance personnel are fully knowledgeable of the specific regulatory requirements identified in the MSGP and are responsible for the following:

- Implementing this procedure;
- Performing routine facility inspections the last month or quarter of the year at regulated sites [depending on inspection frequency identified in site-specific Stormwater Pollution Prevention Plans (SWPPPs)];
- Performing "no exposure" site inspections once a year to ensure conditions of the "no exposure" exclusion are met;
- Performing routine facility inspections at inactive sites once a year;
- Identifying issues requiring a corrective action during any of the above inspections or assessments;
- Determining a condition of non-compliance;
- Notifying managers or legal counsel of non-compliances;
- Modifying the site-specific MSGP Routine Facility Inspection Forms (e.g., add or remove Best Management Practices (BMPs));
- Training personnel to use MC Express;
- Performing a quality review of routine facility inspections and "no exposure" site inspections; and
- Assisting customers with issues associated with MC Express.

2.2 Deployed Environmental Professionals

DEPs are responsible for the following:

- Implementing this procedure;
- Knowledgeable of the requirements contained in site-specific SWPPPs within their assigned Facility Operations Directorate (FOD);
- Meeting qualification requirements identified in the Quality Assurance Project Plan EPC-CP-PIP-2101, NPDES *Multi-Sector General Permit Program Implementation Plan*;
- Being trained on EPC-CP-QP-022, *MSGP Corrective Actions;*
- Being trained to *MSGP Routine Inspections OJT*;
- Being familiar with industrial site and facility operations assigned to them so that they minimize sources of pollutants and pro-actively maintain controls to prevent issues that require corrective action;

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Precautions

The hazard rating for the activities described in this procedure is **LOW** and therefore, does not require an Integrated Work Document (IWD).

Personnel must wear appropriate clothing (e.g., boots, long pants, etc.) to perform work in the field.

Work 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, or LANL operations such as firing shots or burns).

If conditions prevent fieldwork, document the conditions on the work order. Multiple attempts can be documented on the original form. If the target date cannot be met, the field personnel must contact the Program Lead no less than 24 hours before the target date for guidance.

3.2 Limitations

In MC Express, document responses to each question on a work order by clicking the expand arrow located on the right side of the task line and changing the "Complete" or "Failed" line to "Yes." When using a hard copy form, mark the appropriate "Yes" or "No" check box.

Throughout this process, the field personnel will document comments and notations in the "Comments" field of the associated task line. If field personnel need more space, additional comments can be entered in the "Labor Report Update" field (see Section 5.2) when the work order is updated to "Complete" status. When using a hard copy form, document comments on the corresponding task line. If additional space is needed, comments can be entered in the "Labor Report" section at the bottom of the form.

Some terminology varies between the MC Express software and the Maintenance Connection (MC) desktop software.

- The "Reading" field in MC Express is the same field as "Reading Final" in MC desktop and "Meas." on a hard copy (printed) work order.
- The "Complete" option in MC Express is the same as a "Yes" answer; the "Failed" option in MC Express is the same as a "No" answer. MC desktop and hard copy (printed) work orders use "Yes" and "No" terminology.

Click the "Save" bar after all entries for a task line question have been completed and before proceeding to the next task line question. Failure to "Save" results in lost data entries.

4.0 PREREQUISITE ACTIONS

4.1 Planning and Coordination

1. Schedule work to be completed by the target date appearing on the inspection form or as requested by the MSGP Program Lead if an inspection form is not issued.
2. Inform (e.g., by e-mail) facility contacts (as needed) of the schedule for facility 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 (as necessary).
3. Gather the necessary equipment (see Section 4.2) for the work to be done.
4. Using the Safari or Chrome web browser on a tablet or notebook style computer, log into the MC Express application (http://express.maintenanceconnection.com) and confirm that the work order list displayed matches your sites. If the work order lists do not match, contact EPC-CP Data Management personnel for clarification.
5. In MC Express, click on the appropriate work order number to open the work order. The work order will open in the display to the Work Order Summary page.
6. Click on the "Tasks" bar to navigate to the work order Tasks page. See MC Express screen shot examples in Attachment 1.
7. Always log out of MC Express when you have finished work OR if work is interrupted.

4.2 Special Tools, Equipment, Parts, and Supplies

Ensure the following equipment is available.

- Sturdy hiking boots or steel-toed shoes with soles that grip.
- Facility-specific PPE as required by IWD Part II.
- Cell phone (Only government cell phones are allowed in secure areas. See https://int.lanl.gov/policy/documents/P217.pdf for requirements for using portable electronic devices on Laboratory property.)
- Copy of this procedure.
- Copy of facility specific SWPPP and map(s) (as needed).
- Current electronic or paper inspection form EPC-CP-QP-2108 R0 Form 1, *MSGP Routine Facility Inspection.*
- LANL issued tablet or notebook style computer with Safari web browser and Blackberry UEM™ app (see https://int.lanl.gov/policy/documents/P217.pdf for requirements for using portable electronic devices on Laboratory property).
- Necessary access keys.

5.0 MSGP ROUTINE FACILITY INSPECTIONS

MSGP routine facility inspections are conducted by the DEP or other qualified facility personnel (as defined in the MSGP or as determined by MSGP Program Lead) during periods when the facility is in operation and during standard operating hours. Results of visual and analytical monitoring for the past year must be considered when planning and conducting an inspection. The inspections are performed on the following facility areas:

- Areas where industrial materials or activities are exposed to stormwater;
- Areas identified in the SWPPP and those that are potential pollutant sources;
- Areas where spills and leaks have occurred in the past;
- Discharge points; and
- Control measures used to comply with the effluent limits contained in the MSGP.

Routine facility inspections are conducted at least quarterly; however, some facilities may conduct monthly inspections (as specified in the facility specific SWPPP). At least once each calendar year, the routine facility inspections must be conducted during a period when stormwater discharge (either rain or snow) is occurring. During the inspection, you must look 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; and
- Control measures that need replacement, maintenance or repair.

Conditions requiring corrective action identified during an inspection, monitoring, or other means must be entered into the MSGP Corrective Action Report database by the DEP(s), EPC-CP stormwater personnel and/or other qualified facility personnel (as defined in the MSGP or as determined by MSGP Program Lead). Follow the process in EPC-CP-QP-022, *MSGP Corrective Actions* to address issues found during an inspection.

If the industrial facility is inactive and unstaffed and there are no industrial materials or activities exposed to stormwater, routine inspections may not be required. A determination of whether a facility is inactive or unstaffed is made in coordination with stormwater personnel from EPC-CP, as there are specific documentation and certification requirements that have to be met prior to discontinuing routine inspections. Such a facility is only required to conduct an annual site inspection.

If the industrial facility is eligible for a “no exposure” exclusion, routine inspections are no longer required. A condition of “no exposure” exists when all industrial materials and activities are

protected by a storm resistant shelter (e.g., moved to an indoor location) to prevent exposure to rain, snow, snowmelt, and/or runoff. A determination of whether a facility is eligible for "no exposure" status is made in coordination with stormwater personnel from EPC-CP, as there are specific documentation and certification requirements that have to be met prior to discontinuing routine inspections. Such a facility is only required to conduct an annual site evaluation and recertification every five years.

5.1 Conducting the Inspection

See Attachment 1 for screen shot examples of EPC-CP-QP-2108 R0 Form 1, *MSGP Routine Facility Inspection* in MC Express. See Attachment 2 for an example of the inspection form in hard copy format. **Questions will be answered "Yes/Complete" or "No/Failed" unless the instructions specify "N/A" may also be used.**

NOTE: Each item number listed in red font below corresponds to a red numbered box on both screenshots and hard copy format.

[1] **ITEM 1**: Observe the weather at time of inspection. Document the weather and temperature in the "Comments" field of the task line (e.g., Temp. 78°F, sunny, wind less than 5mph).

[2] **ITEM 2**: Observe and document the facility is free of **previously** unidentified discharges from and/or pollutants that have occurred **since the last inspection**. Describe any new discharges and the specific location in the "Comments" field of the task line.

[3] **ITEM 3**:

IF the response to ITEM 2 is "Yes",
THEN answer this task line as "N/A".

OR

IF the response to ITEM 2 is "No",
THEN answer this task line as "Yes" and document the corrective action previously initiated for the discharge.

[4] **ITEM 4**: Check the facility is free of discharges of pollutants at the time of inspection. Describe any pollutant discharge and the specific location in the "Comments" field of the task line.

[5] **ITEM 5**: Check the facility is free of evidence of pollutants entering the drainage system OR the potential for pollutants entering the drainage system. Describe any discharge or potential discharge and the specific location in the "Comments" field of the task line.

[6] **ITEM 6**: Check the outfall does not have any **new** evidence of erosion **since the last inspection**. Describe any erosion observed in the "Comments" field of the task line.

[7] **ITEM 7**: Check all flow dissipation devices are operating effectively and are not in need of repair. Describe any non-functional status of devices in the "Comments" field of the task line (e.g., repair berm, replace rip rap, etc.).

[8] **ITEM 8**: Check the outfall is free of evidence of pollutants in the discharge and/or the receiving water. Describe any pollutants observed in the "Comments" field of the task line (e.g., sediment from nearby erosion, etc.).

[9] **ITEM 9**: Check the outfall is free of unauthorized non-stormwater discharges. Describe any unauthorized discharges observed in the "Comments" field of the task line (e.g., street sweeper emptied contents at Outfall 001, etc.).

[10] Repeat Steps 6 through 9 for each outfall shown on the work order, if the location has more than one outfall.

[11] **ITEM 10**: Check each control measure is operating effectively. Describe any non-operational condition of the control measure (e.g., erosion, damage, etc.,) and if the control measure needs maintenance, repair, or replacement in the "Comments" field of the task line.

- [a] Determine if additional controls are necessary, or that existing controls are insufficient and require replacement with a different type of control.
- [b] The DEPs are responsible for the selection and oversight of proper installation of appropriate control measures per guidance provided in the LANL Stormwater BMP Manual.

[12] Repeat Step 11 for each control measure shown on the work order, if the location has more than one control measure.

[13] **ITEM 11**: Check each sector of NPDES specified industrial area/activity is inspected for exposure to stormwater (e.g., metal fabrication; foundry operations; power generation; asphalt production; fabricating timber products; material recycling; warehouse and transportation activity; treatment and storage of hazardous waste).

- [a] Determine if the control measures associated with each industrial area/activity are appropriate for the activity, effectively controlling stormwater exposure, and operating.
- [b] Describe any non-operational condition of the control(s) and needed maintenance or a description of corrective actions in the "Comments" field of the task line.
- [c] For industrial activities that do not occur at the facility, select "N/A" on that task line.

[14] Repeat Step 13 for each industrial area/activity shown on the work order, if the facility has more than one sector of NPDES specified industrial area/activity.

[15] **ITEM 12**: Check the facility is free of any incidence of non-compliance not documented elsewhere on the inspection form. Describe any additional incidences of non-compliance in the "Comments" field of the task line.

[16] **ITEM 13**: Check the facility meets the MSGP requirements with existing control measures. Describe any additional control measures needed to comply with the Permit.

[17] After all task lines have been completed, make sure you have clicked the "Save" bar at the bottom of the page.

5.2 Completing the Inspection Form

See Attachment 1 for completing EPC-CP-QP-2108 R0 Form 1 in MC Express and Attachment 2 for a hard copy example.

[1] Ensure the inspection form has been filled out completely.

[2] Click the "Back" arrow button  in the upper left hand corner to exit the work order Tasks page and return to the Work Order Summary page.

[3] Click the checkered flag  in the upper right corner of the work order Summary page to open the Work Order Status Update page. MC Express auto-populates the date and time fields.

CAUTION
MC Express automatically changes the work order status to "Closed."

[4] **ITEM 14**: Click on the expand arrow located on the right side of the "New Status" field and select "Completed" from the available dropdown menu.

[a] Ensure the date and time that is auto-populated are the date and time that the **work was completed** and ***not* the date/time the form was filled out.**

[b] IF work needs to be performed over multiple days,
THEN note the date and time the work began in the Labor Report field.

[c] To update the date or time, click the "Date" field and make necessary adjustments using the available timestamp application. Click "Set" to apply changes.

[d] IF using a hard copy form,
THEN write the date and time the work was completed.

[5] **ITEM 15**: The field personnel must type or write his/her name in the "Labor Report Update" field.

[6] Additional notes, observations, or site conditions not documented in a task line "Comments" field can be documented in the "Labor Report Update" field.

[7] Scroll down the page to the "Signature" bar and click the expand arrow on the left side of the bar to open the "Signature" field.

[a] **ITEM 16**: Capture an electronic signature by drawing with a finger on the tablet screen.

***NOTE*:** The mouse must be used to sign electronically when using MC Express on a desktop screen (not a tablet).

[b] If using a hard copy form, the field personnel will sign his/her name and write in the date of when the form was signed.

[c] By electronically signing the work order, field personnel certifies that the information submitted is "true, accurate, and complete."

[8] Click on the "Save" bar at the bottom of the page to close the "Signature" field.

5.3 Completing the Certification Statement

Follow Steps 1 through 5 in this section if the inspection form was completed electronically (see Attachment 1). If the inspection form was completed on a hard copy form, skip to Step 6.

[1] Using the Chrome web browser on a desktop computer, navigate to http://www.maintenanceconnection.com. Log into the MC desktop application using your login credentials.

[2] Click "Open" in the tool bar at the top of the page to open the MC module selections. Click on the "Work Orders" module.

[3] Click on the "Search" tab at the top left of the page.

[a] Enter the work order number in the "Search Value" field.

[b] Click the arrow to the right of the "Search Value" field to open the work order in the right split screen.

[4] Click on the "Report" tab at the top of the page and click the "Work Order Statement" sub-tab.

[5] Click the Tools drop down menu  in the top right corner of the page.

[a] Select "Print" from the options.

[b] When the print dialog box opens, select the print options as appropriate for your local printer.

[6] **ITEM 17**: Obtain a printed name and title, signature, and date on the certification statement.

The certification statement will be signed no more than 14 days after completion of the inspection and a copy sent to the EPC-CP Program Lead or designee.

[a] The routine facility inspection form must be certified with a signature from a manager that meets the definition of a signatory in MSGP Permit Section B.11.A (e.g., FOD, Operations Manager, DSESH Group Leader, EPC-CP Group Leader, EPC-CP Team Lead).

[b] The manager is certifying the information submitted is "true, accurate, and complete" by signing the inspection form.

[7] Attach the completed, signed, and certified inspection form to the facility SWPPP.

[8] Submit a copy of the completed form to the MSGP Program Lead.

6.0 TRAINING

The following personnel require training before implementing this procedure.

- DESH Group and Team Leaders
- EPC-CP MSGP stormwater compliance personnel
- DEPs
- Other personnel identified as being required to conduct stormwater assessments as part of their job duties

All EPC-CP personnel that execute the activities specified in this procedure must meet the minimum qualification and training requirements for their position as identified EPC-CP-PIP-2101, NPDES *Multi-Sector General Permit Program Implementation Plan*. This will include "self-study" (required reading) for this procedure as assigned and documented in accordance with ADSH-TPP-301, *ADESH Training Program Plan*.

Contract personnel that execute the activities specified in this procedure will be qualified and trained as required by the Exhibit D and Exhibit F. In addition, contract personnel will be required to complete "self-study" (required reading) of this procedure.

7.0 RECORDS

MSGP Routine Facility Inspection forms are signed and certified by individual LANL facilities. These completed forms are maintained in the facility's SWPPP and managed by the facility's document management system. The MSGP team may retain a copy for reference purposes.

Below are records generated as a result of implementing this procedure. Records generated are identified by title and type.

Record Title	QA Record	Non-QA Record
EPC-CP-QP-2108 R0 Form 1, *MSGP Routine Facility Inspection*	☒	☐

8.0 DEFINITIONS AND ACRONYMS

8.1 Definitions

See LANL *Definition of Terms*.

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.

8.2 Acronyms

See LANL Acronym Master List.

BMP	Best Management Practice
EPC-CP	Environmental Protection and Compliance – Compliance Programs
DEP	Deployed Environmental Professional
DESH	Deployed Environment, Safety, and Health
FOD	Facility Operations Director
LANL	Los Alamos National Laboratory
MC	Maintenance Connection
MC Express	Maintenance Connection Express
MSGP	Multi-Sector General Permit
NPDES	National Pollutant Discharge Elimination System
SWPPP	Stormwater Pollution Prevention Plan

9.0 REFERENCES

Federal Register, Final National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Industrial Activities. Federal Register: June 16, 2015, Volume 80, Number 115.

Los Alamos National Laboratory Storm Water BMP Manual

10.0 ATTACHMENTS

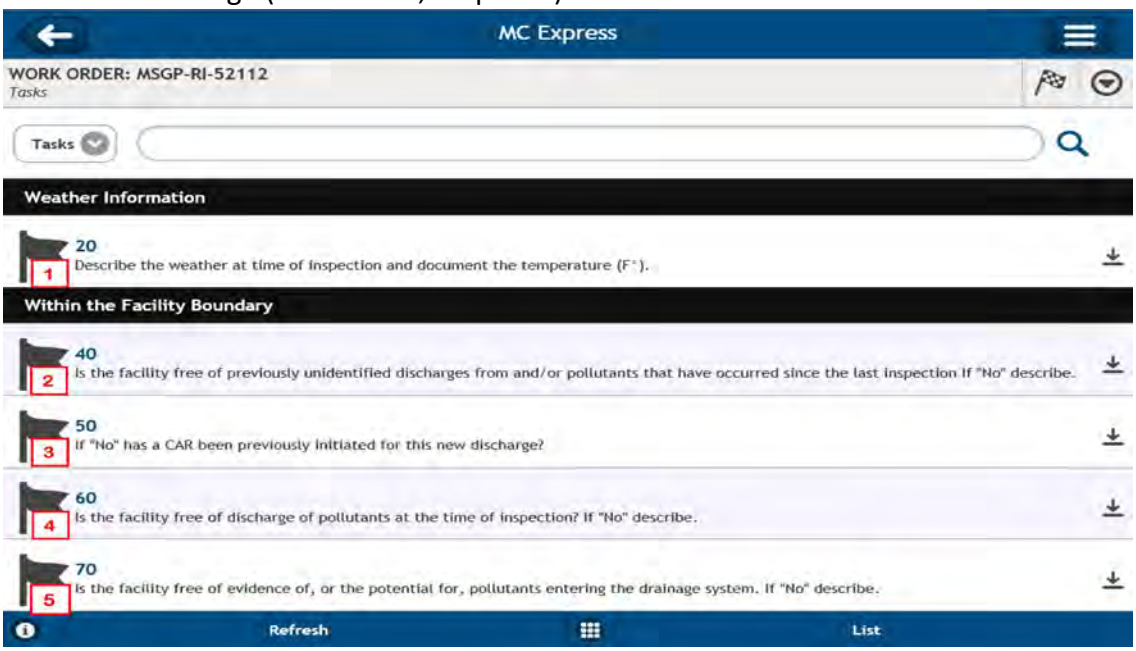
Attachment 1: Screenshot Examples of EPC-CP-QP-2108 R0 Form 1, *MSGP Routine Facility Inspection* in MC Express

Attachment 2: EPC-CP-QP-2108 R0 Form 1, *MSGP Routine Facility Inspection* Hard Copy Example

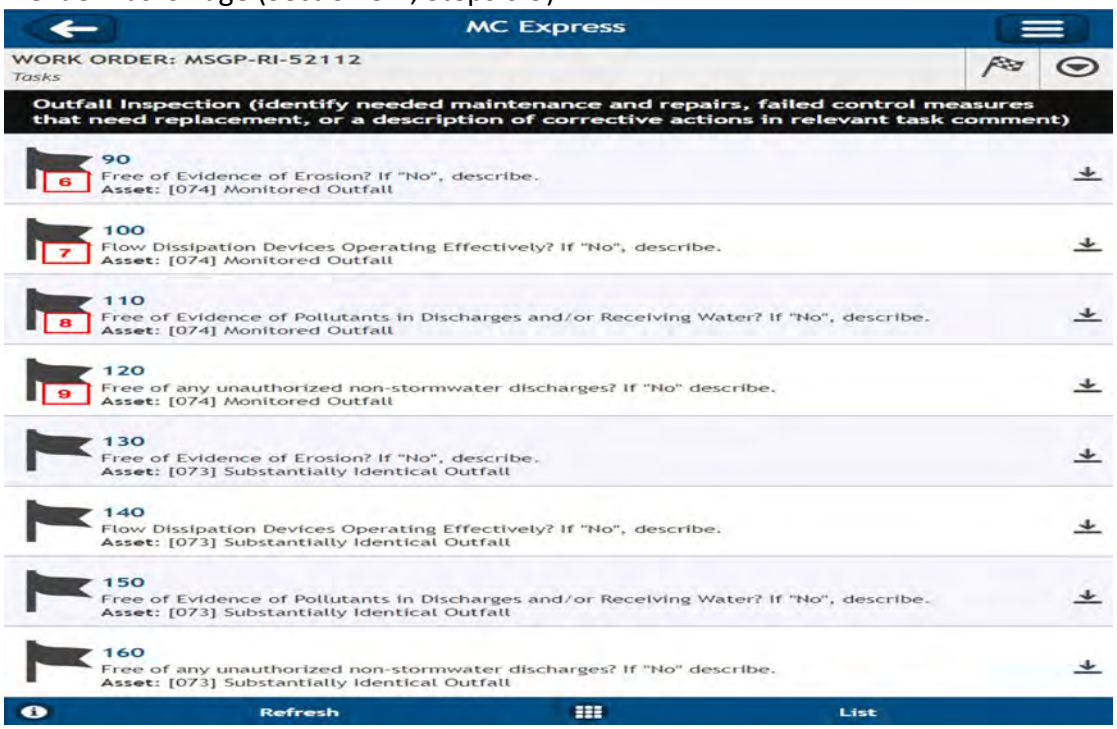
Attachment 1: Screenshot Examples of EPC-CP-QP-2108 R0 Form 1, *MSGP Routine Facility Inspection* in MC Express

(Page 1 of 3)

Work Order Tasks Page (Section 5.1, Steps 1-5)



Work Order Tasks Page (Section 5.1, Steps 6-9)



Attachment 1: Screenshot Examples of EPC-CP-QP-2108 R0 Form 1, *MSGP Routine Facility Inspection* in MC Express (cont.)

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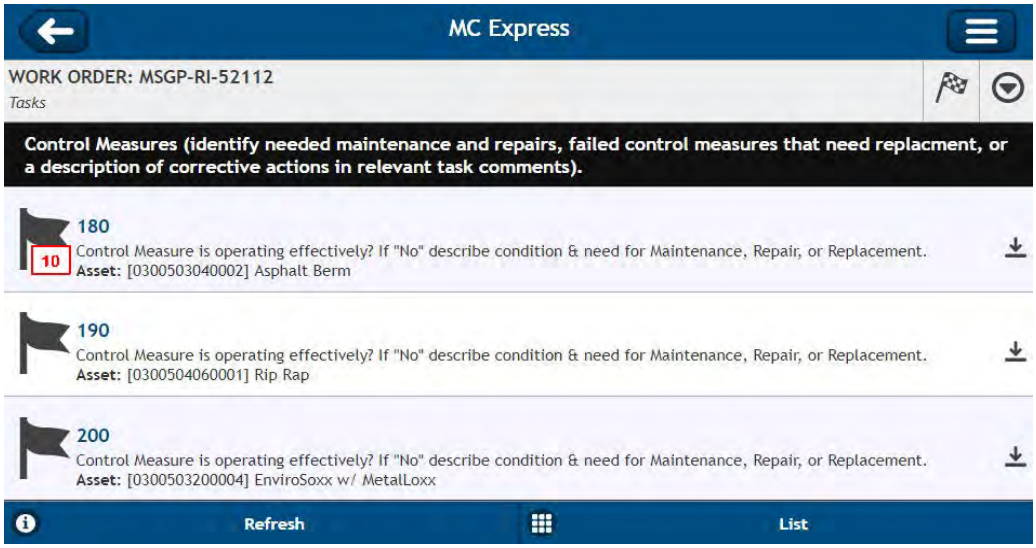
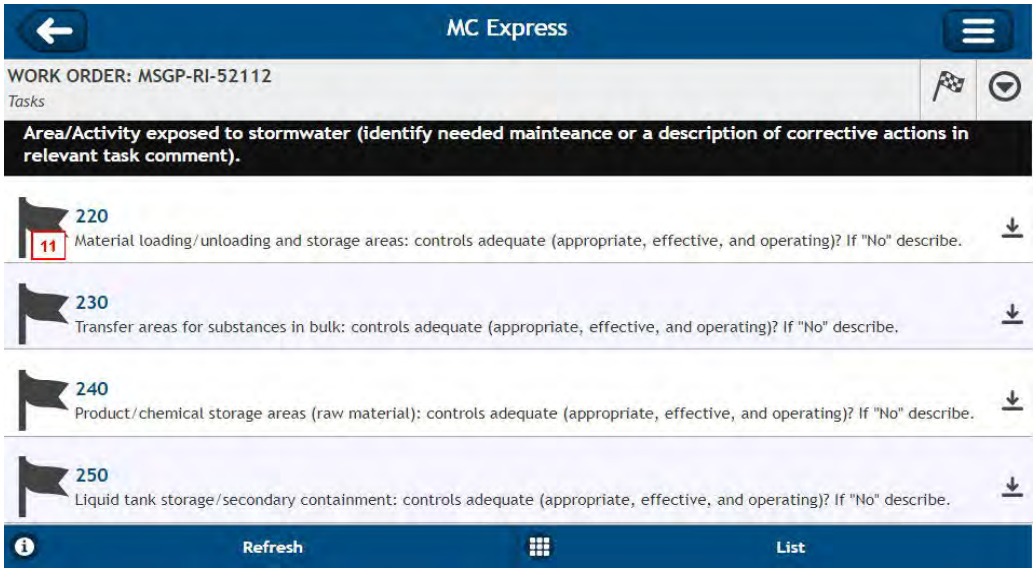
Work Order Tasks Page (Section 5.1, Step 11)



Work Order Tasks Page (Section 5.1, Step 13)



Attachment 1: Screenshot Examples of EPC-CP-QP-2108 R0 Form 1, *MSGP Routine Facility Inspection* in MC Express (cont.)

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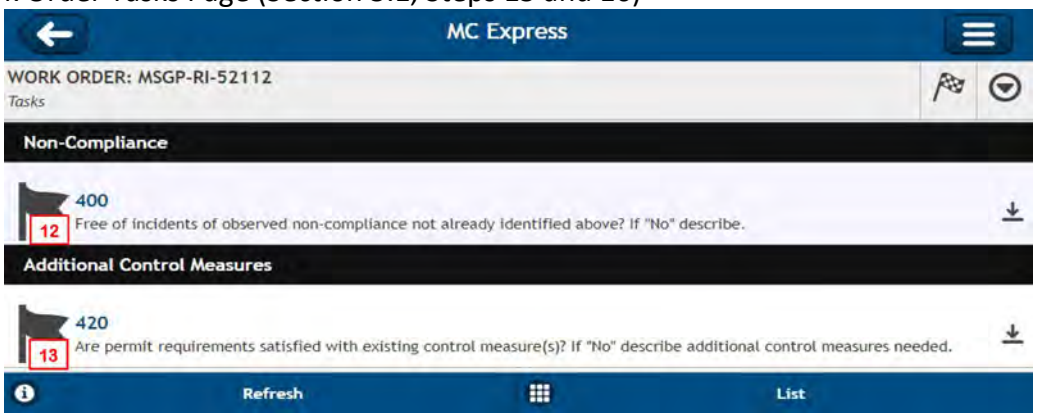
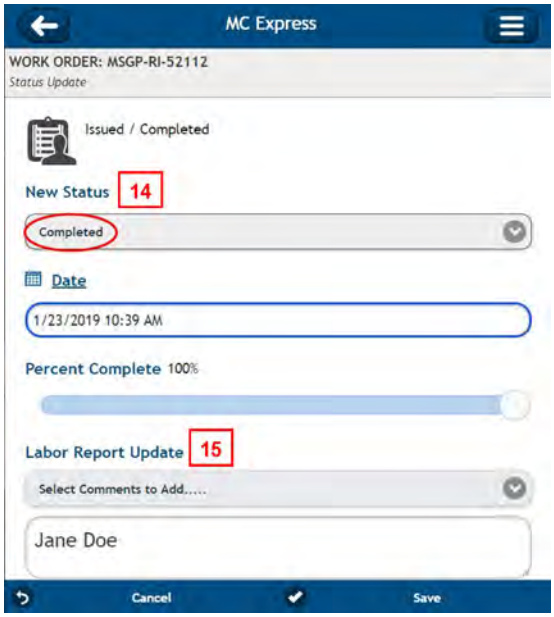
Work Order Tasks Page (Section 5.1, Steps 15 and 16)



Work Order Status Update Page (Section 5.2, Steps 4-6)



Work Order Status Update Page (Section 5.2, Step 7)

Attachment 2: *MSGP Routine Facility Inspection* Hard Copy Example, EPC-CP-QP-2108 R0 Form 1

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Los Alamos National Laboratory

Work Order MSGP-RI-52112
MSGP Routine Inspection
Printed 1/23/2019 - 12:45 PM (Duplicate Copy)

Maintenance Details

Requested By: Admin, Jane on 1/23/2019 12:30:00 PM
Taken By: Banar, Alethea
Procedure: MSGP Routine Facility Inspection (EPC-CP-QP-2108 R0 Form 1)
Last PM: N/A
Target: 12/31/2020
Priority/Type: / Inspection
Department: Utilities and Infrastructure
MSGP Program
RG121.9
TA-3-38 Carpenter Shop
Contact: Admin, Jane
Phone: 123-4567
Reason: Example MSGP Routine Facility Inspection

Tasks

	#	Description	Meas.	No	N/A	Yes
		Weather Information				
1	20	Describe the weather at time of inspection and document the temperature (F°)		☐	☐	☐
		Within the Facility Boundary				
2	40	Is the facility free of previously unidentified discharges from and/or pollutants that have occurred since the last inspection? If "No" describe.		☐	☐	☐
3	50	If "No" has a CAR been previously initiated for this new discharge?		☐	☐	☐
4	60	Is the facility free of discharge of pollutants at the time of inspection? If "No" describe.		☐	☐	☐
5	70	Is the facility free of evidence of, or the potential for, pollutants entering the drainage system. If "No" describe.		☐	☐	☐
		Outfall Inspection (identify needed maintenance and repairs, failed control measures that need replacement, or a description of corrective actions in relevant task comment)				
6	90	**Monitored Outfall [074]** Free of Evidence of Erosion? If "No", describe.		☐	☐	☐
7	100	**Monitored Outfall [074]** Flow Dissipation Devices Operating Effectively? If "No", describe.		☐	☐	☐
8	110	**Monitored Outfall [074]** Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		☐	☐	☐
9	120	**Monitored Outfall [074]** Free of any unauthorized non-stormwater discharges? If "No" describe.		☐	☐	☐
	130	**Substantially Identical Outfall [073]** Free of Evidence of Erosion? If "No", describe.		☐	☐	☐
	140	**Substantially Identical Outfall [073]** Flow Dissipation Devices Operating Effectively? If "No", describe.		☐	☐	☐
	150	**Substantially Identical Outfall [073]** Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		☐	☐	☐
	160	**Substantially Identical Outfall [073]** Free of any unauthorized non-stormwater discharges? If "No" describe.		☐	☐	☐
10		**Control Measures (identify needed maintenance and repairs, failed control measures that need replacment, or a description of corrective actions in relevant task comments).**				
	180	**Asphalt Berm [0300503040002]** Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.		☐	☐	☐
	190	**Rip Rap [0300504060001]** Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.		☐	☐	☐
	200	**EnviroSoxx w/ MetalLoxx [0300503200004]** Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.		☐	☐	☐
11		**Area/Activity exposed to stormwater (identify needed mainteance or a description of corrective actions in relevant task comment).**				
	220	Material loading/unloading and storage areas: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
	230	Transfer areas for substances in bulk: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐

EPC-CP-QP-2108 R0 Form 1

Attachment 2: *MSGP Routine Facility Inspection* Hard Copy Example, EPC-CP-QP-2108 R0 Form 1 (cont.)

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240	Product/chemical storage areas (raw material): controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
250	Liquid tank storage/secondary containment: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
260	Industrial processing and finished product storage areas: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
270	Equipment operation and maintenance areas: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
280	Fueling areas: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
290	Outdoor vehicle and equipment washing areas: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
300	Machinery: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
310	Waste handling and disposal areas: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
320	Erodible areas/construction: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
330	Locations and sources of run-on to the site: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
340	Salt storage piles or pile containing salt: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
350	Dust generation and vehicle tracking: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
360	Housekeeping (Industrial materials/residues/trash in contact with stormwater): controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
370	Leaks and spills: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
380	**Sector A [03005-]** Wood processing, transport or treated wood storage areas: controls adequate (appropriate, effective, and operating)? If "No" describe.		☐	☐	☐
	Non-Compliance				
12 400	Free of incidents of observed non-compliance not already identified above? If "No" describe.		☐	☐	☐
	Additional Control Measures				
13 420	Are permit requirements satisfied with existing control measure(s)? If "No" describe additional control measures needed.		☐	☐	☐

Labor Report

14 **Completed:** 1/23/2019 10:39:00 AM

15 **Report:** [Additional notes, observations, or site conditions not documented in Task Line Comments field]

Jane Doe

16 Jane Doe — 1/23/2019 — Signature / Name — Date — Signature / Name — Date

I confirm the information as recorded is true, accurate and complete.

EPC-CP-QP-2108 R0 Form 1

Attachment 2: *MSGP Routine Facility Inspection* Hard Copy Example, EPC-CP-QP-2108 R0 Form 1 (cont.)

(Page 3 of 3)

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 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".

(Signatory must meet definition in Section B.11.A, eg., FOD, Ops Mgr, DESH Group Leader, EPC Group Leader)

17 Print name and title:_____

Signature:_____ Date:_____

EPC-CP-QP-2108 R0 Form 1

ATTACHMENT 17: EPC-CP-QP-022, MSGP CORRECTIVE ACTIONS

EPC-CP-QP-022	Revision: **3**	
Effective Date: 12/20/2018	Next Review Date: 12/20/21	

Environment, Safety, Health, and Quality, Safeguards and Security Directorate

Environmental Protection and Compliance Division – Compliance Programs

Quality Procedure

MSGP Corrective Actions

Document Owner/Subject Matter Expert:

Name:	Organization:	Signature:	Date:
Holly Wheeler	EPC-CP	Signature on File	12-19-18

Derivative Classifier: ☒ **Unclassified**

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:
Terrill Lemke	EPC-CP Team Leader	Signature on File	12-20-18
Responsible Line Manager	Organization	Signature:	Date:
Taunia Van Valkenburg	EPC-CP Group Leader	Signature on File	12-20-18

Revision History

Document Number and Revision *[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 EPC-CP-QP-062 *MSGP Routine Inspections* into this document.
2	01/13	Biennial revision, new template implemented.
EPC-CP-QP-022 R3	12/202018	Revision to reflect new 2015 MSGP requirements. New procedure format was used and organizational changes made. This document replaces ENV-RCRA-QP-022, R2, which was split into EPC-CP-QP-023, R0, MSGP Industrial Stormwater Routine Facility Inspections, and EPC-CP-QP-022, R3, MSGP Corrective Actions.

Table of Contents

1.0 INTRODUCTION

The National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP) contains specific environmental requirements for identifying, implementing, documenting and reporting conditions requiring corrective actions. Laboratory personnel (the Deployed Environmental Professionals (DEPs) and Environmental Protection and Compliance Division – Compliance Programs (EPC-CP) Storm Water Team (also referred to as EPC-CP MSGP stormwater personnel) are required to perform routine facility inspections and document all conditions requiring corrective actions found on an inspection form (see EPC-CP-QP-023). Conditions requiring corrective actions can be identified during facility walk-downs, normal daily operations, and/or analytical data evaluations, and can be identified by facility personnel, the DEP or EPC-CP MSGP stormwater personnel.

1.1 Purpose

This procedure governs the activities of Laboratory personnel working at Los Alamos National Laboratory (LANL) involved in identifying, implementing, documenting and entering a condition requiring corrective action, including a permit limit exceedance, into the MSGP Corrective Action Report (CAR) Findings database or CAR database. Part 4.4 of the MSGP contains specific documentation requirements relative to corrective actions. This procedure satisfies these requirements.

1.2 Scope

Requirements set forth in this document apply to personnel responsible for meeting the permit conditions on behalf of LANL industrial sites covered by the MSGP. This permit requires periodic inspection of sites and identification, implementation, documentation, tracking and reporting of conditions requiring corrective actions.

1.3 Applicability

This procedure applies to the EPC-CP MSGP stormwater personnel and DEPs who conduct stormwater inspections and monitoring activities at permitted MSGP sites within LANL.

2.0 PRECAUTIONS AND LIMITATIONS

2.1 The hazard level for field activities and office work described in this procedure is a **LOW hazard** rating and does not require an Integrated Work Document (IWD).

2.2 Inspections or walk-downs 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, or LANL operations such as firing shots or open burning).

3.0 PREREQUISITE ACTIONS

3.1 Planning and Coordination

DEPs and EPC-CP MSGP stormwater personnel require a CAR database user account (https://msgp-car.lanl.gov/forms/frmservlet?config=msgp_car). Facility Operations Directors (FODs), Deployed Environment, Safety, and Health (DESH) Managers and Operations (Ops) Managers can request a read-access account by contacting the EPC-CP MSGP data administrator for access.

3.2 Tools and Equipment

Tools and equipment for documenting inspections and updating the CAR database include the following:

- LANS issued tablet or notebook style computer with Safari web browser and Blackberry UEM™app. (see https://int.lanl.gov/policy/documents/P217.pdf for requirements on using portable electronic devices on Laboratory property), and
- Access to the CAR database.

Tools and equipment for field work associated with performing inspections and site walk-downs are listed below.

- Sturdy hiking boots or steel or composite toed shoes with soles that grip (some sites require steel or composite toed shoes).
- Safety glasses if required by site.
- Cell phone (only government cell phones with batteries removed are allowed in secure areas.) See https://int.lanl.gov/policy/documents/P217.pdf for requirements on using portable electronic devices on Laboratory Property.)
- Copy of this procedure.
- Copy of facility specific Stormwater Pollution Prevention Plan (SWPPP) and map(s) (as needed).
- Necessary access.
- Stockpile of temporary stormwater controls (Best Management Practices [BMPs], e.g., inlet protection, absorbent pads for spills, gravel bags, S-Fence, wattles, etc.)

4.0 ROLES AND RESPONSIBILITIES

Specific roles and responsibilities for implementation of requirements contained in the MSGP are provided below.

4.1 EPC-CP MSGP Stormwater Personnel

EPC-CP MSGP stormwater personnel will be fully knowledgeable of the specific regulatory requirements identified in the MSGP. Additional responsibilities are listed below.

- Implement this procedure;
- Oversee the corrective action process;
- Identify conditions requiring corrective action during internal routine facility inspections, "no exposure" assessments, and/or facility walk-downs performed by them, or during evaluation of monitoring data when permit limits are exceeded;
- Perform a quality review of conditions requiring corrective action submitted in the CAR database;
- Notify managers and/or legal counsel of non-compliances;
- Assist DEPs and other customers with issues associated with the CAR database;
- Prepare and submit 45-day exceedance notification to Region 6, Environmental Protection Agency (EPA) containing information provided by the DEP;
- Prepare and submit the Annual Report summarizing all conditions requiring corrective action for the year in EPA's electronic NPDES eReporting tool (NeT);
- Prepare management requested metrics relative to conditions requiring corrective action;
- Provide information to the Issues Management Coordinator (IMC) for entering water quality exceedances and other permit violations into the Issues Management (IM) tool; and
- Train personnel to use the CAR database.

4.2 Deployed Environmental Professionals

DEPs will be fully knowledgeable of the site-specific SWPPP for their assigned sites and corrective action requirements identified in the MSGP. In addition, they shall be appropriately trained to meet the job qualifications identified in the *Quality Assurance for Stormwater Multi-Sector General Permit for Industrial Activities Program* (ENV-CP-QAPP-MSGP) and shall be familiar with the regulatory requirements identified in the MSGP, demonstrated by achieving a satisfactory score on the *MSGP Routine Facility Inspections* on-the-job training course #53040. Further, they shall be familiar with facility operations and controls to minimize potential pollutant sources and proactively maintain controls in an attempt to prevent conditions that require corrective action.

The DEPs are responsible for implementing this procedure. They will identify conditions requiring corrective actions observed at their industrial sites and enter them into the CAR database. DEPs act as liaison between the FOD, DESH Manager and facility/operations personnel to ensure all corrective actions are addressed appropriately by overseeing maintenance and/or installation of additional controls, as needed. DEPs are responsible for ensuring corrective action(s) is completed per MSGP requirements and the corrective action timeline (see Sections 5.2.1 and 5.2.2 of this procedure). They will also provide timely updates to the CAR database for closure or update of corrective actions as they are implemented.

When permit limits are exceeded, DEPs are responsible for identifying the source and maintaining existing controls or implementing additional controls, as necessary, to prevent further exceedances.

If the DEP or EPC-CP MSGP stormwater personnel determine that additional controls are necessary, or that existing controls are insufficient and require replacement with a different type of control, the DEPs are responsible for the selection and oversight of proper installation of appropriate control measures per guidance provided in the LANL Stormwater BMP Manual.

DEPs will notify the EPC-CP MSGP data administrator or MSGP Program Lead of key personnel changes (FOD, DESH Manager, Ops Manager, DEP) to ensure automated CAR status notifications are distributed to the appropriate personnel.

CAUTION

Failure to appropriately control pollutant discharges can result in fines and penalties.

Implementing the same control measure numerous times without an improvement in minimization of off-site pollutants is an indication that the control measure is not stringent enough to meet Technology-Based or Water Quality-Based effluent limits identified in the MSGP. Per the MSGP, documentation is required in the SWPPP that justified the selection, design, installation and implementation of a control measure to ensure effluent limits are met.

4.3 EPC-CP Storm Water Team Leader

The EPC-CP Storm Water Team Leader (or team leader) is responsible for compliance oversight relative to the MSGP. The team leader will ensure resources needed to implement the regulatory requirements identified in the MSGP are identified and environmental risks are assessed. Upper management will be notified of these resources 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.

4.4 EPC-CP Group Leader

The EPC-CP Group Leader or designee is responsible for ensuring there are adequate resources to implement the regulatory requirements identified in the MSGP. The group leader also acts as the duly authorized signatory that certifies the Annual Report or Routine Facility Inspections conducted by EPC-CP personnel. The group leader will notify upper management of instances of non-compliance with the permit or other identified environmental risk.

4.5 DESH Manager

The DESH Manager shall work with programmatic entities and the FOD to identify resources for their industrial sites to ensure permit requirements can be implemented. The DESH Manager is responsible for the performance of DEPs under their management. They also provide oversight for ensuring that industrial sites are complying with the MSGP and are responsible for notifying upper management of instances of non-compliance with the permit or other identified environmental risk they become aware of.

4.6 Facilities Operations Director

The FOD provides organizational leadership to ensure that all facility and programmatic activities under their authority are performed in compliance with the MSGP. The FOD is also responsible for establishing an environmental compliance envelope. It is the FOD's responsibility to maintain trained and qualified DEPs and Waste Management Coordinators (WMCs) on staff.

5.0 PROCESS DESCRIPTION

Requirements regarding corrective actions are described in Part 4 of the MSGP. These requirements and conditions are summarized in this section and directly correspond to data fields and lists of values available in the CAR database.

5.1 Identifying Conditions Requiring Corrective Actions

Deployed Environmental Professional (DEP)

[1] **IF** any of the following conditions are identified,
THEN review and revise, as appropriate, the selection, design, installation, and implementation of control measures in the SWPPP to eliminate the condition and prevent recurrence in the future:

- An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by the MSGP [see Section 5.6 of this procedure for a description of allowable discharges]);
- 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 MSGP;
- It is observed during the routine facility inspection, facility walk-down, and/or the quarterly visual assessment 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 stormwater from the facility, or significantly increases the quantity of pollutants discharged;
- 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 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;
- If effluent limitation guidelines are exceeded at the Asphalt Batch Plant (Sector D); or
- If impaired water quality standards are exceeded.

DEP and/or EPC-CP MSGP stormwater personnel

[2] Enter all conditions requiring a corrective action into the EPC-CP MSGP CAR database.

DEP and/or Facility Personnel

[3] Take immediate action to mitigate the condition requiring a corrective action.

[4] If needed, follow the permit timeline and process for individual corrective actions that require extensive maintenance.

[5] Any person authorized to conduct work at LANL can identify a potential stormwater issue. If this occurs, they will:

[a] Contact the DEP or EPC-CP MSGP stormwater personnel.

[b] The DEP or EPC-CP MSGP stormwater personnel will determine if a condition exists that requires a corrective action.

5.2 Corrective Action Deadlines and Documentation

Specific deadlines for taking corrective action and required documentation are provided in the subsections below.

5.2.1 Immediate Action

DEP and/or Facility Personnel

[1] **IF** a condition exists that requires corrective action, as described in Section 5.1 [1], **THEN** take the following action immediately (on the same day the condition is found):

[a] All reasonable steps necessary to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational.

[b] Clean up any contaminated surfaces so that material will not discharge during subsequent storm events.

[c] Minimize or prevent the discharge of pollutants until a permanent solution (if necessary) is installed and made operational.

[d] Any corrective action resulting in a change to a stormwater control or procedure (documented in the SWPPP) requires modification of the SWPPP within 14 calendar days of completing corrective action work.

NOTE

For minor conditions, immediate action is often sufficient and no additional action is necessary.

[2] **IF** a condition is identified at a time in the work day when it is too late to initiate corrective action (i.e., 3:00 pm or later),
THEN:

[a] Corrective action must begin no later than the following work day.

[b] Implement the requirements identified in Section 5.2.1 [1] above.

CAUTION

Solely calling or e-mailing personnel requesting action to be taken is not considered taking immediate action. Entering a Facility Service Request (FSR) is appropriate if it formally starts the work process to address the condition. Temporary BMPs still need to be put in place to minimize or prevent off-site migration of pollutants, especially if a storm event is likely.

5.2.2 Subsequent Action

DEP and/or Facility Personnel

[1] **IF** additional action is required,
THEN:

[a] Complete the corrective action (e.g., install a new or modified control and make it operational or complete the repair) before the next storm event or within 14 calendar days from the time of discovery.

[b] Any corrective action resulting in a change to a stormwater control or procedure documented in the SWPPP requires modification of the SWPPP within 14 calendar days of completing corrective action work.

[2] **IF** completion of the corrective action is infeasible within the 14-day timeframe,
THEN:

[a] Document the reasoning in the database.

[b] Provide a schedule for completion of the corrective action in the database.

NOTE

Completion of the corrective action cannot exceed 45 days from the time of discovery without having to notify EPA. These time intervals are not grace periods, but are schedules considered reasonable for documenting finding(s) and for making repairs and improvements. They are included in the MSGP to ensure that the conditions prompting the need for these repairs and improvements are not allowed to persist indefinitely. In no instance will the corrective action remain open indefinitely (Part 4.3.2 of the MSGP).

5.2.3 Corrective Action Documentation

DEP and/or EPC-CP

[1] Document existence of any of the conditions listed in Section 5.1 [1] of this procedure in the CAR database within 24 hours of becoming aware of such condition (or if identified late in the work day, by the following work day).

[2] Include the following information in the 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;
  - 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; and
- Description of immediate actions taken (Part 4.3.1 of the MSGP) to minimize or prevent the discharge of pollutants. For any spills or leaks, include response actions, the date/time clean-up was completed, notifications made (if any), and staff involved. Also include any measures taken to prevent the reoccurrence of such releases (Part 2.1.2.4 of the MSGP).

[3] Provide the dates when each corrective action was initiated and completed (or is expected to be completed).

[a] If applicable, document why it is infeasible to complete the necessary installations or repairs within the 14-day timeframe, and

[b] Document your schedule for installing the controls and making them operational as soon as practicable after the 14-day timeframe.

[c] **IF** EPA must be notified regarding an extension of the 45-day timeframe, **THEN** the DEP must document the rationale for an extension.

EPC-CP MSGP stormwater personnel

[4] Prepare and submit 45-day exceedance notifications based on information entered into the CAR database by the DEPs.

DEP

[5] Ensure that the information in the CAR database is kept up-to-date, to include the following:

[a] a thorough description of the nature of the condition requiring corrective action,

[b] corrective action(s) taken and/or outstanding,

[c] the steps and schedule for completing a corrective action (if not completed within 14 days), and

[d] rationale for why the corrective action cannot be completed within 45-days.

5.3 Effect of Corrective Action

When the condition requiring corrective action is a permit violation (e.g., non-compliance with an effluent limit or exceedance of a water quality standard), correcting it does not remove the original

violation. Additionally, failing to take corrective action in accordance with Part 4 of the MSGP is an additional permit violation.

NOTE

The EPA will consider the appropriateness and promptness of corrective action in determining enforcement responses to permit violations (Part 4.5 of the MSGP).

5.4 Substantially Identical Outfalls

When the condition requiring corrective action is associated with an outfall that has been identified as a "substantially identical outfall" (see Parts 3.2.3 and 6.1.1 or the MSGP), a review will assess the need for corrective action for all related substantially identical outfalls. Any necessary changes to control measures that affect these other outfalls will be made before the next storm event if possible, or as soon as practicable following that storm event. Any condition requiring corrective action(s) will be addressed within the timeframes set forth in Part 4.3 of the MSGP (also see Section 5.2 of this procedure).

5.5 Spills

DEP and/or Facility Personnel

[1] Clean up all leaks or spills immediately and enter into the CAR database.

[a] If the spill is immediately cleaned up, and controls are implemented to prevent further leakage, the condition requiring corrective action can be closed.

5.6 Allowable Non-Stormwater Discharges

The following are allowable non-stormwater discharges authorized by the MSGP:

- Discharges from emergency/unplanned fire-fighting activities;
- Fire hydrant flushing;
- Potable water, including water line flushing;
- 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 fertilizer 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 wash waters do not come into contact with oil and grease deposits, sources of pollutants associated with industrial activities (see Part 5.2.3 of the MSGP), or any other toxic or hazardous materials, unless residues are first cleaned up using dry clean-up methods (e.g., applying absorbent

material 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 of 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 or drains).

5.7 Entering a Condition Requiring Corrective Action

To enter a condition requiring corrective action into the CAR database, perform the steps in this section.

Enter clear, complete, and concise language. Correct grammar, punctuation, and spelling errors.

Select the appropriate value from each pull-down menu that applies to the condition requiring corrective action. This information will be used to populate a report that will be submitted to the EPA and is extracted from the database to populate automatic e-mail notifications to managers. Therefore, it is critical that all information entered into the CAR database is correct.

DEP or EPC-CP MSGP stormwater personnel

[1] Using internet explorer, access the CAR database at https://msgp-car.lanl.gov/forms/frmservlet?config=msgp_car.

[2] From the main screen, click on "Enter New Corrective Action."

[a] Select the "Corrective Action Header" tab.

[b] Enter the following (refer to Attachment 1 for data entry screenshot cross reference to Item numbers in red listed below):

- Item 1: Name of facility by clicking on the "List" tab and selecting a facility (refer to Attachment 2 for a list of available facilities).
- Item 2: Date/Time problem was identified (mm/dd/yyyy hh:mm) (*the inspection date or the date you first become aware of the issue*).

  There must be a space between the date (mm/dd/yyyy) and the time (hh:mm).

  All dates and times will be entered as mm/dd/yyyy hh:mm in 24-hr (military time) format. Time is tracked to document whether immediate action was taken, whether the issue was documented within 24 hours, and the specific time interval before a corrective action is completed and closed (see Section 5.2 of

this procedure for corrective action deadlines). Do not leave time as 00:00 (the system default) unless the action occurred at midnight.

- Item 3: Date/Time of Notification to EPC-CP (mm/dd/yyyy hh:mm) (*the date the condition is entered into the CAR database or verbal or written notification is provided to the EPC-CP MSGP Program Lead. Conditions reported by verbal or written notification must still be entered into the CAR database*.)

  The existence of any of the conditions listed in Section 5.1 of this procedure must be documented in the CAR database within 24 hours of becoming aware of such condition (or if identified late in the work day, by the following work day).

- Item 4: FOD Responsible for CA (Name & Org) by clicking in the box. FOD designations (for example "STO") and the associated name list will pop up. Select the appropriate FOD.

  Contact the EPC-CP MSGP Program Lead at 667-1312 or hbenson@lanl.gov if the FOD name or organization is incorrect, so this can be corrected.

- Item 5: Describe Specific Evaluation Location (for example, "Northeast corner of Building TA-3-66.")

- Item 6: Inspector Z-Number by clicking in the box, which will populate with the Z number of the person who is logged into the database and performing entry. In most instances, the DEP will be identified as the inspector.

- Item 7: Person Identifying Condition Z-Number by clicking in the box, which will populate with the Z number of the person who is logged into the database and peforming entry. If the person identifying the condition is someone other than the inspector, enter that person's Z-number.

  Any person authorized to conduct work at LANL can identify a potential stormwater issue. If this occurs, they will contact the DEP or EPC-CP MSGP stormwater personnel who will determine if a condition exists that requires corrective action.

- Item 8: Status defaults to "A new corrective action" without making a selection. In the event a condition is entered that is determined to not require corrective action, this status can be changed to "Void" by clicking in the box and selecting from the Status list. The decision to assign a status of "Void" is at the discretion of EPC-CP MSGP stormwater personnel and reserved for EPC-CP use.

- Item 9: If the Status is changed to "Void," enter a clear rationale for voiding the record.

- Item 10: 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" meaning the form cannot be saved unless these fields are completed. For the purpose of fulfilling

corrective action documentation requirements (see Section 5.2.3 of this procedure), all applicable fields are required fields.

The system will automatically assign a Corrective Action Report identification (ID) number and move to the "Corrective Action Details" tab.

[c] Select the "Corrective Action Details" tab.

[d] Enter the following:

- Item 11: Identify the condition triggering the need for this review by clicking on the "List" button and selecting the appropriate condition or, if none of the available conditions fit the issue, selecting "Other" and entering a description of the condition (refer to Attachment 2 for a list of available conditions/finding descriptions).

  These conditions are described in Section 5.1 of this procedure. Qualified personnel (EPC-CP MSGP stormwater personnel and DEPs) must be knowledgeable of these conditions and select the correct one when entering an issue. If there is uncertainty about which condition applies, refer to the definitions in Section 8.1 of this procedure or contact the MSGP Program Lead at 667-1312 or hbenson@lanl.gov for clarification prior to selecting "Other."

- Item 12: If the condition in Item 11 is set to "Other," enter a description of the condition in this field.

- Item 13: 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 (e.g., at TA-60 Roads and Grounds).

  Spills or other emergency conditions meeting the criteria for corrective action (identified in Parts 4.1 and 4.2 of the MSGP) will require documentation in the CAR database even though the condition was not identified during an inspection.

- Item 14: Enter how the problem was identified by clicking on the "List" button and selecting the appropriate option, or if none of the available options fit, selecting "Other."

- Item 15: If "Other" is selected for Item 14, enter a description of how the problem was identified in this field.

- Item 16: Enter a description of the condition requiring corrective action, or identify action to be taken to eliminate or further investigate the problem (e.g., describe modifications or repairs to control measures, work conducted to address the condition or to be scheduled in the future, etc.,) or if no modifications are needed, the basis for that determination. Include relevant dates and facts when updating this field as the corrective action progresses.

- Item 17: Indicate whether the problem was identified at a Substantially Identical Outfall (see Section 5.4 of this procedure) by typing "Y" for yes and "N" for no.

- Item 18: If the answer to Item 17 is "Y," enter the associated SIO(s) in this field. If the answer to Item 17 is "N," leave this field blank. SIOs are identified in the site-specific SWPPPs. For assistance with identifying SIOs contact the MSGP Program Lead.
- Item 19: If the answer to Item 17 is "Y," describe how the corrective action taken is appropriate for all SIOs (see Section 5.4 of this procedure), document any additional corrective action(s) needed for any of the SIOs, or document why no additional action is needed for the SIOs. If the answer to Item 17 is "N," leave this field blank.
- Item 20: Did/will the corrective action require modification to the SWPPP? Type in "Y" for yes and "N" for no (see Section 5.1 of this procedure for conditions that require SWPPP review and revision).
- Item 21: Date/Time Corrective Action was initiated (mm/dd/yyyy hh:mm).

  The duration between the Date/Time problem was identified and Date/Time corrective action was initiated is used to determine whether "immediate action" was taken (see Section 5.2.1 of this procedure). Immediate action is a requirement of the MSGP and therefore, will be documented in accordance with permit requirements.
- Item 22: Date/Time corrective action was completed **OR** expected completion Date/Time (mm/dd/yyyy hh:mm).

  If the corrective action has not been completed, enter an expected completion date and time. The system will not allow entry of a date in both locations.

  The duration between the Date/Time Problem was Identified and Date/Time corrective action was completed or the Date/Time Problem was identified and expected completion Date/Time is used to determine whether "subsequent action" timeframes and documentation requirements were/are being met, and to forecast where a 45-day exceedance notification to EPA is required (see Section 5.2.3 of this procedure). When information is incorrect or not entered, the MSGP data administrator or Program Lead will contact the originator and request correction(s).
- Item 23: If the corrective action is not or will not be completed within 14 days, provide the status of the corrective action at the end of the 14 day timeframe, the rationale for why it is infeasible to complete the corrective action within 14 days, and describe any remaining steps (including timeframe/schedule associated with each step) necessary to complete the corrective action.
- Item 24: Date EPA notified of intent to exceed 45 Days (mm/dd/yyyy hh:mm) is to be completed by EPC-CP MSGP stormwater personnel to document submittal of notification letter.
- Item 25: Once all of the above information is entered correctly, click "Save" so the corrective action information is retained.

[3] **IF** there are additional conditions to enter requiring corrective action, as described in Section 5.1 [1],
THEN perform these steps:

[a] Return to the "Corrective Action Header" tab.

[b] Click the "Enter New Corrective Action" button in the lower left hand corner of the screen.

[c] Click "Back to Record Selection" to return to the list of saved conditions requiring corrective action on the initial screen (if desired).

5.8 Updating Corrective Actions

DEP or EPC-CP MSGP stormwater personnel

[1] Access the CAR database at https://msgp-car.lanl.gov/forms/frmservlet?config=msgp_car.

[a] On the main screen, scroll down to the corrective action number to be edited.

[b] Click "Edit."

[2] Navigate to the desired field, and input the updated information. Most changes will occur relative to updating the status, schedule, and dates of corrective actions.

[3] Click "Save" to save all changes to the information.

5.9 Validation of Corrective Actions

EPC-CP MSGP stormwater personnel

[1] Access the CAR database at https://msgp-car.lanl.gov/forms/frmservlet?config=msgp_car.

[2] Ensure information entered into the CAR database is correct.

[a] Check all entered fields for a condition requiring corrective action to ensure that information is clear, correct, and concise.

[b] **IF** not,
THEN notify the DEP of the information that needs to be changed.

[c] The DEP is responsible for ensuring all information is validated before generating the annual report.

[3] **IF** the identified condition requiring corrective action is a repeat of a previous condition or if it is determined not to be a condition requiring corrective action,
THEN

[a] Under "Status," select "Void."

[b] The "Void" designation allows MSGP stormwater personnel to manually exclude this information in the annual report.

5.10 Issues Management

EPC-CP MSGP stormwater personnel or DEPs use the IM tool as the institutional performance issues and tracking system for identified quality assurance (QA) affecting issues. A QA affecting issue includes, but is not limited to, the following conditions.

- Exceedance of a water quality standard.
- Exceedance of an effluent limitation (i.e., at the Asphalt Batch Plant).
- Repeat conditions requiring corrective actions or trends identified by EPC-CP MSGP stormwater personnel.
- Conditions requiring immediate action, where failure to take action would result in pollutants being released to waters of the state.
- Immediate non-compliance with the MSGP.
- Violations identified by the regulatory authority.

The MSGP Program Lead periodically evaluates a summary of open conditions requiring corrective actions in the CAR database. Using the above conditions, the MSGP Program Lead or DEP determines which corrective actions, if any, will be transferred into the IM tool.

DEP or EPC-CP MSGP stormwater personnel

[1] **IF** an issue needs to be entered into the IM tool,
THEN send the following information to the EPC Division IMC for entry into the IM tool:

- Organization responsible for the issue/problem;
- A description of the nature of the condition identified and what needs to be done to address it;
- Regulatory citation for the non-compliance;
- Issues Responsible Manager (IRM);
- Action, actionee, and due date for each issue; and
- Whether the issue was identified internal or external to LANL.

5.11 Notifications for New and Overdue Corrective Actions

[1] When a new condition requiring corrective action is entered into the CAR database, the FOD, Ops Manager, DESH Manager, inspector (usually the DEP) and EPC-CP MSGP stormwater personnel and managers are notified automatically by e-mail on the evening of the day the corrective action was entered.

[2] Automated e-mail notifications will be sent during the corrective action process depending on the length of time it will take to close.

[3] A notification will be sent out:

- When a new corrective action is entered into the database (see Attachment 3); and
- Weekly notifications of outstanding (open) corrective actions (see Attachment 4).

Each notification contains a hyperlink to a web-based report containing a list of all open issues and timeline status where final corrective actions have not been completed (see Attachment 5) by the FOD. The report contains the FOD, Facility, unique Corrective Action identification number assigned by the CAR database, the person identifying the condition, the date the issue was identified, the date corrective action was initiated, the projected completion date, and a color-coded count (corresponding to the Corrective Action deadlines in Section 5.2 of this procedure) of the number of days to take action and the number of days the issue has been open, and the issue/problem description.

These notifications serve to apprise recipients of the status of open conditions requiring corrective actions and to provide sufficient time for MSGP stormwater personnel to provide documentation to EPA at the 45-day deadline. This will assist the FOD, DESH Managers, Ops Managers, and the DEPs with keeping track of conditions requiring corrective actions.

6.0 TRAINING

The following personnel require training before implementing this procedure:

- EPC-CP Group Leader and Team Leader;
- EPC-CP MSGP stormwater personnel;
- DEPs; and
- Other LANL or subcontract personnel identified as being required to conduct stormwater inspections, or other assessments and enter conditions requiring corrective actions into the CAR database as part of their job duties.

For EPC-CP MSGP stormwater personnel, the training method for this procedure is "self-study" (reading). DEPs shall achieve a satisfactory score on Training Course 53040, *MSGP Routine Facility Inspections OJT*. Other participating groups may require training documentation pursuant to local procedures.

Personnel performing this procedure will be familiar with the most current version of the following procedure:

- ENV-CP-QAPP-MSGP, *Multi-Sector General Permit for Industrial Activities Program*

7.0 RECORDS

Conditions requiring corrective actions are contained within the CAR database. DEPs will retain documentation substantiating these conditions, corrective actions, and timelines reported in the CAR database (e.g., e-mails, FSRs, Work Orders, etc., as appropriate). These documents shall be made available to EPC-CP upon request.

8.0 DEFINITIONS AND ACRONYMS

See LANL Definition of Terms.

8.1 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.

Numeric effluent limitation—The degree of effluent reduction attainable by the application of the best practicable control technology currently available (see 40 CFR Part 443.12). For LANL, numeric effluent limitations apply only to the Asphalt Batch Plant (Sector D) (see Table 1-1 of the MSGP). Constituents with limitations for Sector D include Total Suspended Solids, pH, and oil and grease (see Table 8.D-2 of the MSGP).

Note: Exceedance of a numeric effluent limitation is a violation of the MSGP (see Part 4.1 of the MSGP).

Non-numeric effluent limitations—Per Part 2.1.2 of the MSGP, these include minimizing exposure, good housekeeping, maintenance, spill prevention and response, erosion and sediment controls, management of runoff, salt storage controls, employee training, elimination of non-stormwater discharges, and minimizing dust generation and vehicle tracking of industrial materials.

Unauthorized release or discharge—The release of any liquid or solid substance (within the boundary of an MSGP site) that is not an allowable non-stormwater discharge (see Section 5.6). Examples are hydraulic oil, gasoline, diesel, powdered concrete, concrete washout, steam condensate line leaks, etc.

Impaired water quality exceedance—Exceedance of a New Mexico water quality standard. These standards are specified in the New Mexico Administrative Code, Title 20, Chapter 6, Part 4, *Standards for Interstate and Intrastate Surface Waters*.

Note: Industrial stormwater discharges must be controlled as necessary to meet applicable water quality standards within the State of New Mexico (see Part 2.2.1 of the MSGP).

8.2 Acronyms

See LANL *Acronym Master List*.

BMP	Best Management Practice
CA	Corrective Action
CAR	Corrective Action Report
EPA	Environmental Protection Agency

EPC-CP	Environmental Protection and Compliance-Compliance Programs
DEP	Deployed Environmental Professional
DESH	Deployed Environmental, Safety and Health
ID	Identification
IM	Issues Management
IMC	Issues Management Coordinator
IRM	Issues Responsible Manager
IWD	Integrated Work Document
FOD	Facility Operations Director
FSR	Facility Service Request
HEY	Heavy Equipment Yard
LANL	Los Alamos National Laboratory
MSGP	Multi-Sector General Permit
N	No
NPDES	National Pollutant Discharge Elimination System
Ops	Operations
P	Procedure
PD	Program Description
QA	Quality Assurance
QP	Quality Procedure
SD	System Description
STO	Science and Technology Operations
SWPPP	Stormwater Pollution Prevention Plan
40 CFR	Title 40 of the Code of Federal Regulations
WMC	Waste Management Coordinator
Y	Yes

9.0 REFERENCES

- *Final National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Industrial Activities.* Federal Register: June 16, 2015, Volume 80, Number 115.
- *Unites States Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit For Stormwater Discharges Associated With Industrial Activity (MSGP)*
- *Los Alamos National Laboratory Storm Water BMP Manual*

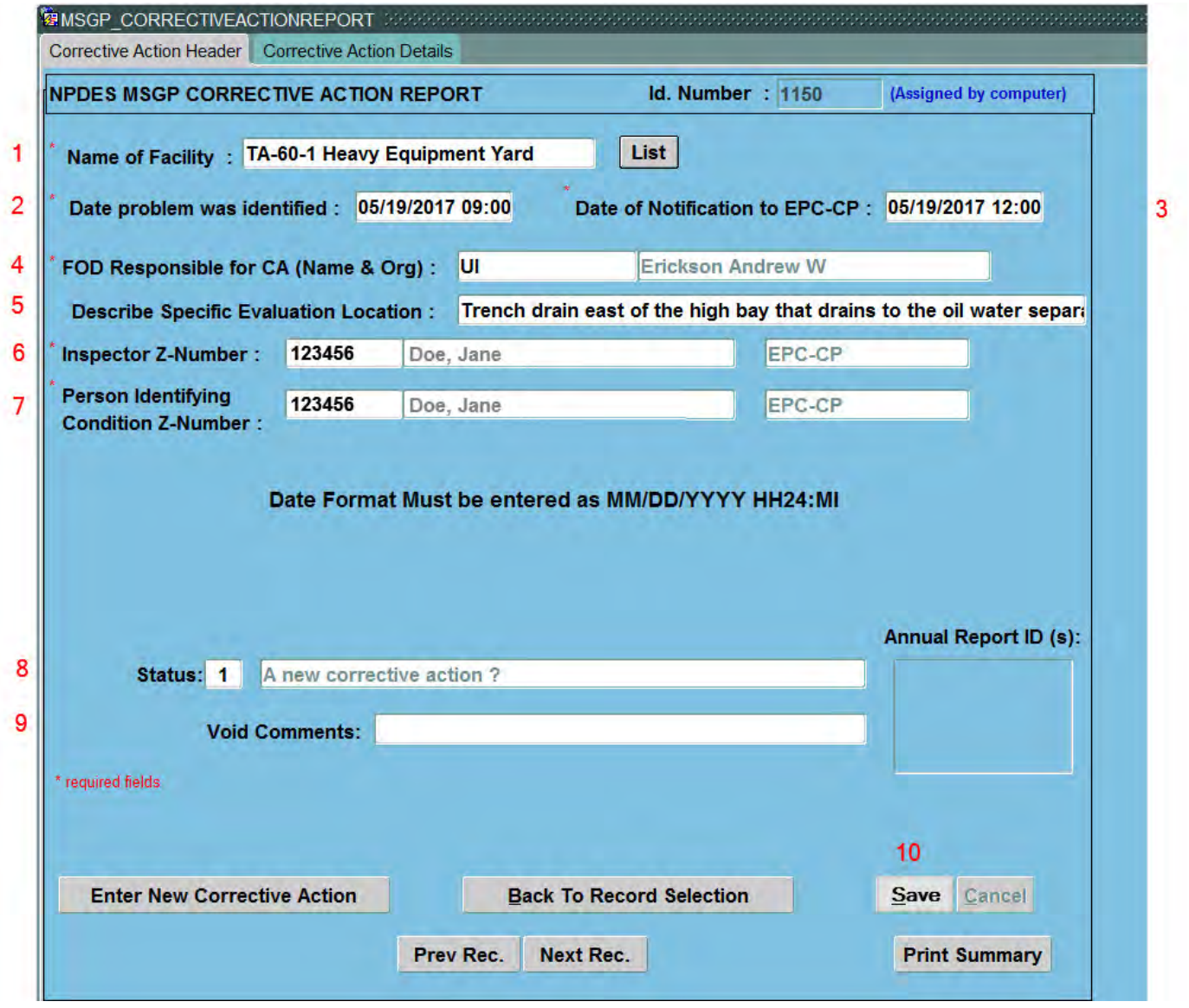
- PD100, *DOE/NNSA Approved Los Alamos National Laboratory 10 CFR 857 Worker Safety and Health program Description*
- SD100, *Integrated Safety Management System*
- P101-18, *Procedure for Pause/Stop Work*
- EPC-CP-QP-023, *MSGP Routine Facility Inspections*

10.0 ATTACHMENTS

Attachment 1: Screenshot Example of CAR Database
Attachment 2: Lists of Limited Values in the CAR Database
Attachment 3: Example New Corrective Action Finding Notification
Attachment 4: Example Weekly Notification of Outstanding Corrective Action Findings
Attachment 5: Example Outstanding Corrective Action Report

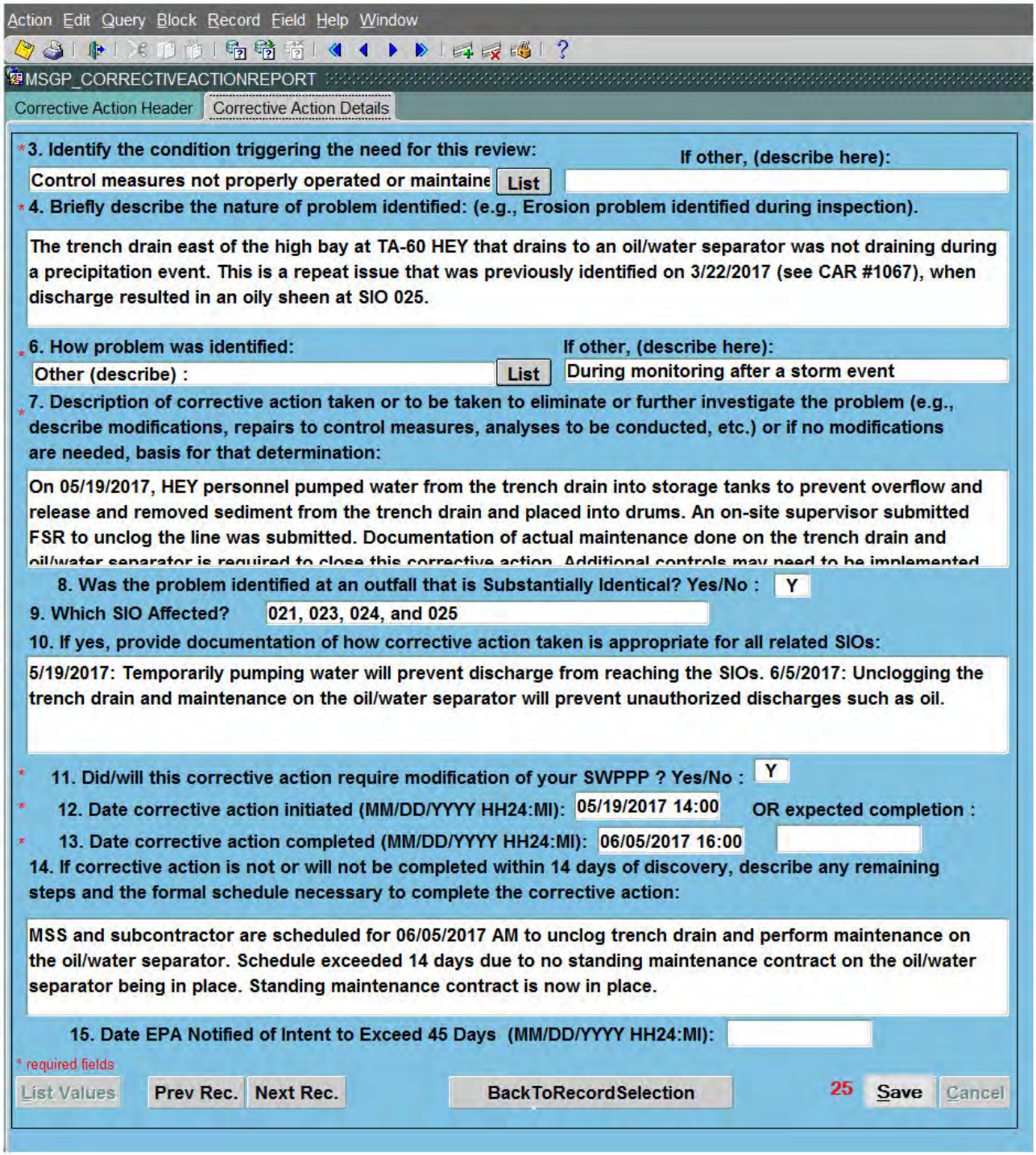
Attachment 1 – Screenshot Example of CAR Database

Corrective Action Header tab



Attachment 1 – Screenshot Example of CAR Database (cont.)

Corrective Action Details tab



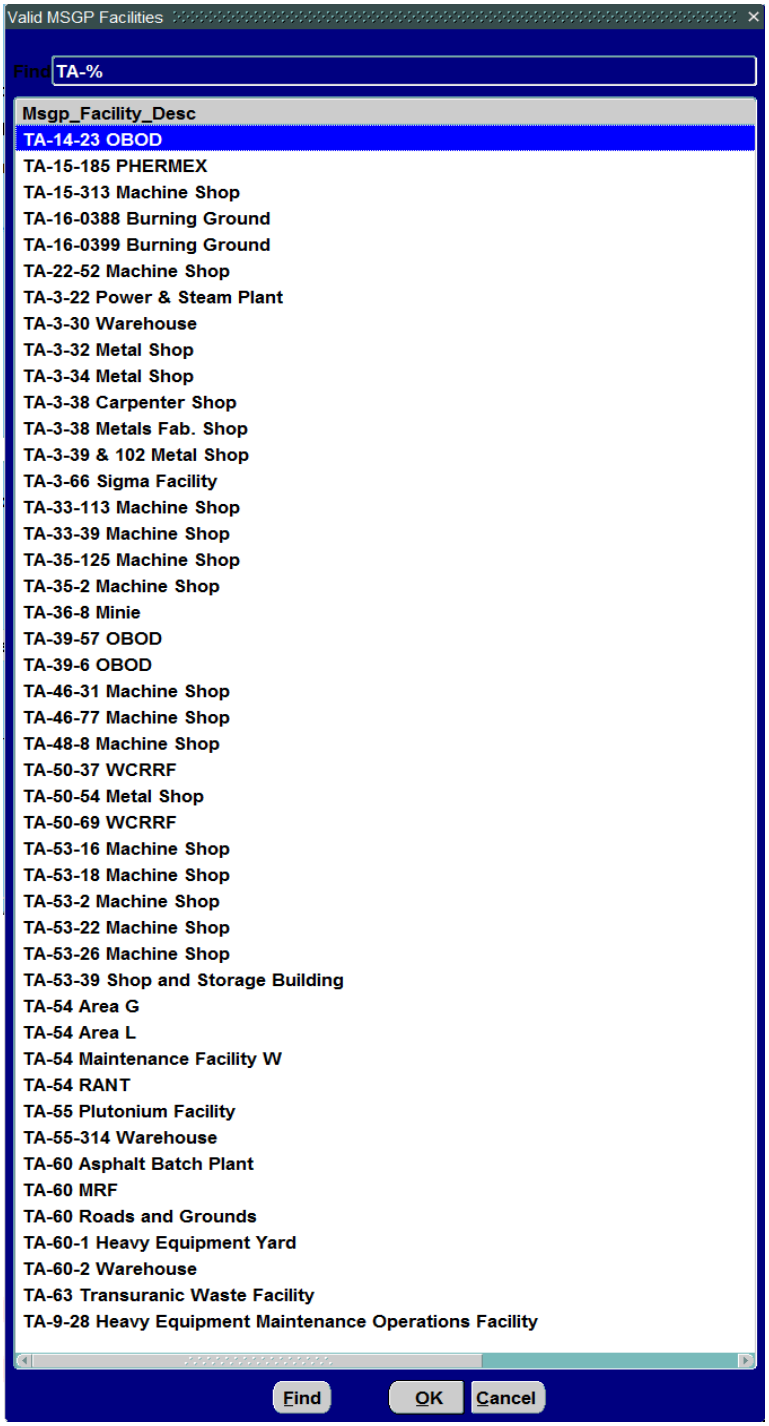
Attachment 1 – Screenshot Example of CAR Database (cont.)

Full Text for Item 16: Description of Corrective Action Taken or to be Taken

On 05/19/2017, HEY personnel pumped water from the trench drain into storage tanks to prevent overflow and release. Sediment was also removed from the trench drain and placed into drums. An on-site supervisor submitted an FSR to unclog the line. Documentation of actual maintenance done on the trench drain and oil/water separator is required to close this corrective action. Additional controls may need to be implemented until maintenance is complete to ensure that oil is not discharged into the drainage channel north of the site. In addition, the SWPPP must be modified to identify the preventative maintenance schedule and include the procedure for conducting it. On 05/30/2017, the SWPPP was modified to include a quarterly maintenance schedule and a procedure for routine maintenance on the oil/water separator. On 06/05/2017, MSS jet-routed the drain to remove the clog and a subcontractor performed maintenance on the oil/water separator.

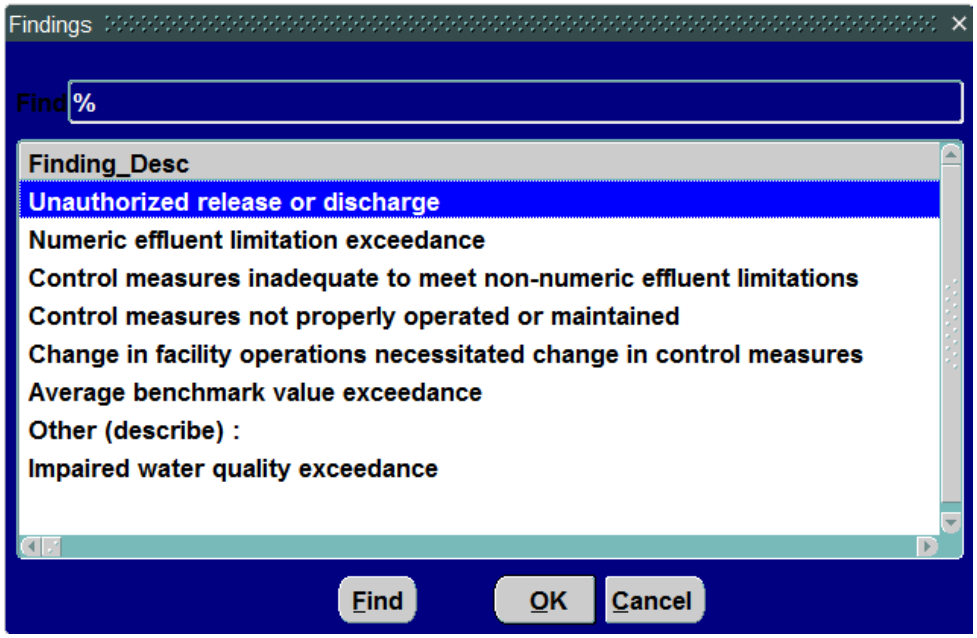
Attachment 2 – Lists of Limited Values in the CAR Database

Name of Facility *(Item 1 on Attachment 1 Screenshot)*

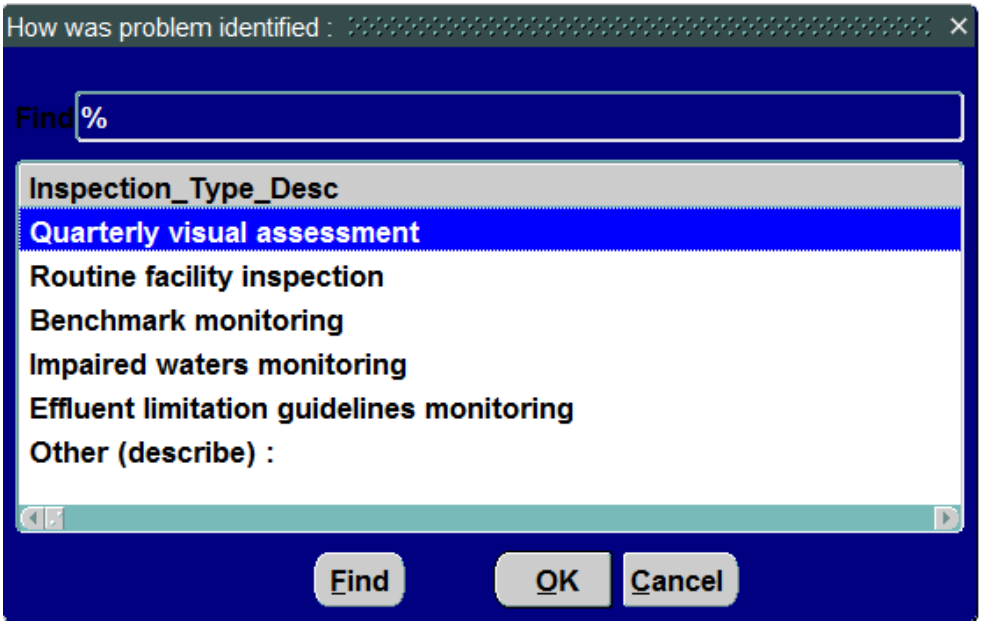


Attachment 2 – Lists of Limited Values in the CAR Database (cont.)

Finding Description/Condition Triggering Need for Review *(Item 11 on Attachment 1 Screenshot)*



Inspection Type/How Problem was Identified *(Item 14 on Attachment 1 Screenshot)*



Attachment 3 – Example New Corrective Action Finding Notification

From: MSGPCorrectiveActionDB@esp-esh-as01.lanl.gov [mailto:MSGPCorrectiveActionDB@esp-esh-as01.lanl.gov]
Sent: Friday, January 19, 2018 10:00 PM
To:
Cc:

Subject: New Corrective Action finding relative to the NPDES MSGP Program

This email is generated automatically by the National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP) Corrective Action Report (CAR) database to provide notification of discovery of a new condition requiring corrective action. As the recipient of this notification, you are responsible for immediately taking all reasonable steps necessary to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational.

"Immediately" requires initial action on the same day a condition is found. However, if a problem is identified at a time in the work day when it is too late to initiate corrective action (after 2 P.M.), the initiation must begin no later than the following work day.

Documentation of newly identified conditions requiring corrective action must occur within 24 hours of discovery, evidenced by entry into the CAR database.

At TA-50-37 WCRRF on 01/17/18, a condition requiring a corrective action was observed and a corrective action report was generated per the 2015 Multi-Sector General Permit requirements for stormwater controls at industrial sites. The condition(s) requiring a corrective action(s) is/are listed below.

CA#: 1296 located at TA-50-37 WCRRF.

Person Identifying Condition: DOE JANE

Description of finding: Unauthorized release or discharge

Condition requiring corrective action: Forklift was leaking hydraulic fluid

Description of the corrective action taken or to be taken to eliminate the condition or further investigation: On 1/17/2018 prior tot he start of work the operator noticed the forklift was leading hydraulic fluid from the line to the mast. Approximately 4 to 6 oz leaked onto the asphalt. The Operation Center was notified and the WMC and ENV. The Nuc Operators placed spill pads under the leak. FSR#182723 was entered to repair forklift and apply microblaze. At 1702 MSS personnel applied micro blaze to the spill. On 1/18/2018 the WMC collected all spill pads and managed them accordingly.

Status: The corrective action was initiated on 01/17/2018 and was completed on 01/17/2018.

Click HERE to access the list of MSGP corrective action(s) not yet completed for EWMO.

Click HERE to access the list of all MSGP corrective action(s) not yet completed.

The ESH Deployed Environmental Professional (DEP) assigned to your organization/area is (are) Jane Doe.

The color legend on the linked reports corresponds to the following schedule for corrective action completion as required by the 2015 MSGP:

You must complete the corrective action within 14 calendar days of discovery.

If completion of final corrective actions within 14 days is not feasible, the reason(s) must be documented and a description of steps required and formal schedule for completion, which must be done as soon as practicable after the 14-day timeframe, but not longer than 45 days after discovery. The reasons, steps and schedule for completion must be entered into the CAR database.

If the completion of corrective action will exceed the 45-day timeframe, you make take the minimum additional time necessary, provided that you notify Region 6 of the Environmental Protection Agency:

- of your intent to exceed 45 days,
- your rationale for an extension, and
- a completion date.

To assist the preparation of this notification, as a responsible individual, you must contact the EPC-CP Project Lead at 667-1312 for any corrective action that remains open 35 days or more, and provide a formal status of the progress for each corrective action. By day 40, the DEP must provide the EPC-CP Project Lead the rationale for potentially exceeding the required 45-day timeframe and a proposed completion date for each associated corrective action. The DEP must also amend the rationale and completion date in the CAR database.

An extension request must be submitted to Region 6 of the U.S. Environmental Protection Agency by EPC-CP personnel prior to day 45 for final corrective actions not completed or estimated to be completed within 45 days of discovery.

The responsible individual must ensure compliance with the proposed completion schedule.

These intervals are not considered grace periods, but are defined schedules to ensure the conditions requiring corrective action do not persist indefinitely.

Where corrective actions result in changes to controls or any procedures documented in the facility's Storm Water Pollution Prevention Plan (SWPPP), the DEP must modify the SWPPP accordingly within 14 calendar days of completing corrective action work.

Attachment 4 – Example Weekly Notification of Outstanding Corrective Action Findings

From: MSGPCorrectiveActionDB@esp-esh-as01.lanl.gov [mailto:MSGPCorrectiveActionDB@esp-esh-as01.lanl.gov]
Sent: Monday, January 01, 2018 10:00 PM
To:
Cc:
Subject: Weekly Notification of Outstanding NPDES MSGP Corrective Action finding(s)

This email is generated automatically by the National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP) Corrective Action Report (CAR) database to provide notification of discovery of a new condition requiring corrective action. As the recipient of this notification, you are responsible for immediately taking all reasonable steps necessary to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational.

"Immediately" requires initial action on the same day a condition is found. However, if a problem is identified at a time in the work day when it is too late to initiate corrective action (after 2 P.M.), the initiation must begin no later than the following work day.

Documentation of newly identified conditions requiring corrective action must occur within 24 hours of discovery, evidenced by entry into the CAR database.

At TA-3-38 Carpenter Shop , 1 total MSGP stormwater corrective action(s) has (have) not been completed.

At TA-3-38 Metals Fab. Shop , 1 total MSGP stormwater corrective action(s) has (have) not been completed.

At TA-60-1 Heavy Equipment Yard , 7 total MSGP stormwater corrective action(s) has (have) not been completed.

At TA-60-2 Warehouse , 4 total MSGP stormwater corrective action(s) has (have) not been completed.

Click HERE to access the list of MSGP corrective action(s) not yet completed for UI.

Click HERE to access the list of all MSGP corrective action(s) not yet completed.

The ESH Deployed Environmental Professional (DEP) assigned to your organization/area is (are) Jane Doe :John Doe.

The color legend on the linked reports corresponds to the following schedule for corrective action completion as required by the 2015 MSGP:

You must complete the corrective action within 14 calendar days of discovery.

If completion of final corrective actions within 14 days is not feasible, the reason(s) must be documented and a description of steps required and formal schedule for completion, which must be done as soon as practicable after the 14-day timeframe, but not longer than 45 days after discovery. The reasons, steps and schedule for completion must be entered into the CAR database.

If the completion of corrective action will exceed the 45-day timeframe, you make take the minimum additional time necessary, provided that you notify Region 6 of the Environmental Protection Agency:

- of your intent to exceed 45 days,
- your rationale for an extension, and
- a completion date.

To assist the preparation of this notification, as a responsible individual, you must contact the EPC-CP Project Lead at 667-1312 for any corrective action that remains open 35 days or more, and provide a formal status of the progress for each corrective action. By day 40, the DEP must provide the EPC-CP Project Lead the rationale for potentially exceeding the required 45-day timeframe and a proposed completion date for each associated corrective action. The DEP must also amend the rationale and completion date in the CAR database.

An extension request must be submitted to Region 6 of the U.S. Environmental Protection Agency by EPC-CP personnel prior to day 45 for final corrective actions not completed or estimated to be completed within 45 days of discovery.

The responsible individual must ensure compliance with the proposed completion schedule.

These intervals are not considered grace periods, but are defined schedules to ensure the conditions requiring corrective action do not persist indefinitely.

Where corrective actions result in changes to controls or any procedures documented in the facility's Storm Water Pollution Prevention Plan (SWPPP), the DEP must modify the SWPPP accordingly within 14 calendar days of completing corrective action work.

Attachment 5 – Example Outstanding Corrective Action Report

LANL inside

EPC-CP MultiSector General Permit (MSGP)
Corrective Action Report Findings
Final Corrective Actions Not Yet Complete (as of 02/01/2018)

FOD	RAD	MSGP Facility	CA#	Person Identifying Condition	Date Problem Identified	Corrective Action Initiated Date	Days to Take Action	Projected Completion Date	Projected Days until Completion	Days Open (since Discovery)	EPA Notified of Intent to Exceed 45 Days	Problem Description
UI	DOE JOHN	TA-3-38 Carpenter Shop	1298	DOE JANE	01/31/18		!	02/02/18	1	1		Tarp was totally torn off of the stack of metal posts at the southwest corner of the storage yard.
	DOE JOHN	TA-3-38 Metals Fab. Shop	1299	DOE JANE	01/31/18		!	02/02/18	1	1		A pile of gravel (from a torn gravel bag) is directly east of the trench drain.
Total Findings:												2

Legend

!	Action must be taken and documented in CAR.	3	Indicates immediate action was not taken (i.e., <=2 days of discovery)
	Within 14 days of discovery		Between 35 and 44 days of discovery
	Between 15 and 34 days of discovery		45 days of discovery or greater

ATTACHMENT 18: EPC-CP-QP-064, *MSGP STORMWATER VISUAL ASSESSMENTS*

EPC-CP-QP-2105	Revision: 0	Los Alamos NATIONAL LABORATORY
Effective Date: 05/12/2020	Next Review Date: 05/12/2023	

Environment, Safety, Health, Quality, Safeguards, and Security Directorate

Environment Protection and Compliance – Compliance Programs Group

Quality Procedure

MSGP Stormwater Visual Assessments

Hazard Grading:	☒ Low	☐ Moderate	☐ High/Complex
Usage Level:	☒ Reference	☐ UET	☐ Mixed: UET Sections: _____
Status:	☐ New	☐ Major Revision	☐ Minor Revision
	☐ Review w/No Changes		☒ Other: New EPC-CP format and numbering system
Safety Basis:	☒ N/A	☐ USQ	☐ USI Number: _____

Document Author/Subject Matter Expert:

Name:	Organization:	Signature:	Date:
Holly L. Wheeler	EPC-CP	Signature on File	04-23-20

Derivative Classifier: ☒ **Unclassified or** ☐ _____

Name:	Organization:	Signature:	Date:
Steven E. Wolfel	EPC-CP	Signature on File	04-23-20

Approval Signatures:

EPC-CP Reviewer:	Organization:	Signature:	Date:
Alethea Banar	EPC-CP	Signature on File	04-23-20
EPC-CP RLM:	Organization:	Signature:	Date:
Terrill W. Lemke, Team Leader	EPC-CP	Signature on File	05-11-20
EPC-CP RLM:	Organization:	Signature:	Date:
Taunia Van Valkenburg, Group Leader	EPC-CP	Signature on File	05-12-20

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	Revision: 0	Effective Date: 05/12/2020

REVISION HISTORY

Document Number and Revision *[Include revision number, beginning with Revision 0]*	**Effective Date** *[Document Control Coordinator inserts effective date]*	**Effective Date** *[Document Control Coordinator inserts effective date]*
ENV-RCRA-QP-064, R0	7/09	New document *MSGP Storm Water Visual Inspections*.
ENV-RCRA -QP-064, R1	3/10	Clarifications and added attachments.
ENV-RCRA -QP-064, R2	2/12	Biennial review/revision
EPC-CP-QP-064, R0	10/04/2017	This document replaces ENV-RCRA-QP-064 R2. Converted into new format, and new organization name, clarified steps, updated attachments.
EPC-CP-QP-064, R1	10/09/2018	Removed requirement to conduct visual assessment on filtered samples. Updated form to match text.
EPC-CP-QP-2105, R0	05/12/20	Supersedes EPC-CP-QP-064, R1. Reformat to new EPC-CP template. Re-number procedure and forms to new EPC-CP procedure numbering system.

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	Revision: 0	Effective Date: 05/12/2020

Table of Contents

1.0 INTRODUCTION

Los Alamos National Laboratory (LANL) through Environmental Protection and Compliance–Compliance Programs (EPC-CP) conducts stormwater monitoring activities required pursuant to the National Pollutant Discharge Elimination System (NPDES), Multi-Sector General Permit (MSGP). The MSGP requires LANL to monitor stormwater runoff from industrial sites relative to potential pollutants.

1.1 Purpose

This procedure describes the process for conducting visual assessments of stormwater from permitted outfall locations where LANL conducts stormwater monitoring activities for compliance under the MSGP.

1.2 Scope

Requirements set forth in this document apply to LANL 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 a carpenter shop. Inspection waivers may be granted by EPC-CP for adverse weather conditions and unstaffed or inactive sites.

At least once each MSGP monitoring quarter an unfiltered stormwater sample must be collected from each discharge point covered by the MSGP and site-specific Stormwater Pollution Prevention Plan (SWPPP). The sample must be visually inspected for water quality characteristics. Stormwater samples are collected with an automated sampler, single stage sampler, or by taking a grab sample. Visual assessments are **not** performed on filtered stormwater.

Visual assessments conducted under this procedure are documented using the Maintenance Connection Express™ (MC Express) web application on a tablet or notebook style computer. In the event of electronic hardware or web application failure, personnel may use a printed hard copy to document the work.

1.3 Applicability

This procedure applies to the EPC-CP technical staff and subcontractor personnel (as applicable) who conduct stormwater visual assessments during or after measurable storm events at MSGP outfalls.

A measurable storm event is identified in Section 6.1.3 of the MSGP as one "that results in an actual discharge from your site that follows the preceding measurable storm event by at least 72 hours (three days)."

2.0 PRECAUTIONS AND LIMITATIONS

2.1 Precautions

The hazard level for the activities described in this procedure is **LOW**, therefore and Integrated Work Document (IWD) Part I is not required. If required by a Facility Operations Division (FOD), an IWD Part II (2101 Form) will address any site-specific requirements and training for the FOD.

Personnel must wear appropriate clothing (e.g., boots, long pants, etc.) to perform work in the field.

Work 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, or LANL operations such as firing shots or burns).

If conditions prevent field work, document the conditions on the work order. Multiple attempts can be documented on the original form. If the target date cannot be met, the field personnel must contact the Program Lead no less than 24 hours before the target date for guidance.

2.2 Limitations

In MC Express, document responses to each question on a work order by clicking the expand arrow located on the right side of the task line and changing the "Complete" or "Failed" line to "Yes". When using a hard copy form, mark the appropriate check box.

Throughout this process, the field personnel will document comments and notations in the "Reading" field of the associated task line. Additional comments not documented in a "Reading" field can be entered in the "Comments" field of the same task line. If field personnel need more space, additional comments can be entered in the "Labor Report Update" field (see Section 4.3) when the work order is updated to "Complete" status. When using a hard copy form, document comments on the corresponding task line. If additional space is needed, comments can be entered in the "Labor Report" section at the bottom of the form.

Some terminology varies between the MC Express software and the Maintenance Connection (MC) desktop software.

- The "Reading" field in MC Express is the same field as "Reading Final" in MC desktop and "Meas." on a hard copy (printed) work order.
- The "Complete" option in MC Express is the same as a "Yes" answer; the "Failed" option in MC Express is the same as a "No" answer. MC desktop and hard copy (printed) work orders use "Yes" and "No" terminology.

3.0 PREREQUISITE ACTIONS

3.1 Planning and Coordination

1. Schedule work to be completed by the target date appearing on the work order(s) or as requested by the MSGP Program Lead if a work order is not issued.

2. As specified in the IWD Part II (if applicable), inform (e.g., by e-mail) facility contacts and/or Deployed Environmental Professional (DEP) of the schedule for work and locations up to a week (preferred) before but no later than the day before (for minor changes) so work is added to the appropriate plan of the day.
3. Gather the required equipment (see Section 3.2) for the work to be done.
4. Using the Safari or Chrome web browser on a tablet or notebook style computer, log into the MC Express application (http://express.maintenanceconnection.com) and confirm that the work order list displayed matches your sites. If the work order lists do not match, contact EPC-CP Data Management personnel for clarification.
5. In MC Express, click on the appropriate work order number to open the work order. The work order will open in the display to the Work Order Summary page.
6. Click on the "Tasks" bar to navigate to the work order Tasks page. See MC Express screen shot examples in Attachment 1.
7. Always log out of MC Express when you have finished work OR work is interrupted.

3.2 Special Tools, Equipment, Parts, and Supplies

Ensure the following equipment is available in the field vehicle:

- Safety glasses
- Nitrile gloves
- Sturdy hiking boots or steel toed shoes with soles that grip
- Other facility specific personal protective equipment as required by the FOD
- Cell phone (only government cell phones are allowed in secure areas) (See https://int.lanl.gov/policy/documents/P217.pdf for requirements for using portable electronic devices on Laboratory property.)
- Current copy of this procedure
- Current copy of the IWD(s) Part II (as needed)
- Site map(s) (as needed)
- Current electronic work order or paper inspection form
- EPC-CP MSGP Sampling and Analysis Plan (SAP) most recent revision for the current monitoring year OR program specific monitoring plan
- Government issued electronic tablet with Safari web browser and Blackberry UEMTM app. (See https://int.lanl.gov/policy/documents/P217.pdf for requirements for using portable electronic devices on Laboratory property.)
- Necessary access and station keys

- Access to accurate time measurement
- Clean replacement sample bottles (clear glass or clear poly)
- Paper towels

4.0 VISUALLY ASSESSING STORMWATER

Stormwater visual assessments are determined at a sampling station based on the current year SAP. See Attachment 1 for screen shot examples of EPC-CP-QP-2105 R0 Form 1, *MSGP Visual Assessment* in MC Express. See Attachment 2 for an example of the form in hard copy format.

NOTE: Each item number listed in red font below corresponds to a red numbered box on both screenshots and hard copy format.

4.1 Documenting Sample Information

[1] Take the sample bottle with water out of the automated sampler or single stage jar off the ground or fill a clear sample bottle with a grab sample and wipe off exterior.

[a] Grab samples will be collected during daylight hours in a wide-mouth clear glass or plastic container within 30 minutes of discharge from a storm event.

[2] **ITEM 1**: Document the monitoring period by entering Apr-May, Jun-Jul, Aug-Sep, or Oct-Nov.

[a] IF the stormwater discharge collected is from a rain event from the previous monitoring period and the visual assessment is made in the following monitoring period,

THEN document monitoring period on the inspection to correspond to the period in which the rain event took place.

[3] **ITEM 2**: Check the date and time stormwater discharge began and document by entering the date in the following formats: MM/DD/YY or MM-DD-YY. Time must be entered in 24-hour format.

[a] IF the discharge date/time is not available (e.g., precipitation report) when the visual is performed in the field,

THEN leave this Task Line incomplete and complete when the information is available.

[4] **ITEM 3**: Check the date and time the sample was collected and document by entering the date in the following formats: MM/DD/YY or MM-DD-YY. Time must be entered in 24-hour format.

[a] IF the collection date/time is not available (e.g., precipitation report) when the visual is performed in the field,

THEN leave this Task Line incomplete and complete when the information is available.

[5] **ITEM 4**: Check the date and time stormwater was visually assessed and document by entering the date in the following formats: MM/DD/YY or MM-DD-YY. Time must be entered in 24-hour format.

[6] **ITEM 5**: Describe the nature of the discharge (e.g., rain, snowmelt, hail) and the TOTAL amount of precipitation in inches from the event.

[a] IF the total amount of precipitation is not available (e.g., precipitation report) when the visual is performed in the field,

THEN leave this Task Line incomplete and complete when the information is available.

[7] **ITEM 6**: Check the sample was collected in the first 30 minutes of discharge and document.

[a] IF it is not possible to collect the sample within the first 30 minutes of discharge,

THEN the sample must be collected as soon as practicable after the first 30 minutes.

[b] The field inspector will document the reason a sample could not be collected within the first 30 minutes (e.g., lightning hazard, flooding).

4.2 Assessing Parameters

While conducting the visual assessment, personnel will attempt to relate any evidence of stormwater pollution that is observed in the sample to a pollutant source on the site. A cleanup of the site can be conducted if the pollutant source is known and well defined. Refer to EPC-CP-QP-2109, *MSGP Corrective Actions* for specific steps to document, track, and report conditions of potential stormwater pollution.

[1] **ITEM 7**: Observe the color of the discharge in the sample container. Document by describing the color.

[2] **ITEM 8**: Observe any odors detected from sample. Document by describing the odor (e.g., musty, sewage, sulfur, sour, solvents, petroleum/gas).

[3] **ITEM 9**: Observe the clarity of the discharge. Document by describing the clarity (e.g., slightly cloudy, cloudy, opaque).

NOTE 1: Clarity is 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.

[4] **ITEM 10**: Observe any floating solids in the discharge. Document by describing the floating solids.

NOTE 2: Careful examination will determine whether the solids are raw materials (e.g., product used to fabricate something, or ingredients used in a formulation) or waste materials (e.g., shavings, woodchips and sawdust, trash).

[5] **ITEM 11**: Observe any settled solids in the sample. Document by describing the settled solids (e.g., sediment, vegetation, fine, course).

NOTE 3: Settled solids may be an indicator of unstable ground cover combined with a high intensity stormwater runoff event.

[6] **ITEM 12**: Observe any suspended solids in the sample. Document by describing the suspended solids (e.g., vegetation, ash, sediment, fine, course).

NOTE 4: Most often suspended solids include fine sediment. This may be an indication of an unstable channel with eroding banks. Some water may appear to be colored because of relatively fine particulate material in suspension such as sediment.

[7] **ITEM 13**: Check the sample is free of foam. Gently shake the sample container. Document by describing any bubbles in or on the surface of the water and the color of the foam.

[a] IF it is determined that foam is caused by a pollutant,
THEN complete the visual assessment and contact the EPC-CP MSGP Program Leader **immediately** following completion of the visual assessment.

[b] Follow-up action is required within 24 hours (see EPC-CP-QP-2109).

[8] **ITEM 14**: Check the sample is devoid of any oil sheen. Document by describing the thickness and consistency (e.g., flecks, globs).

[a] IF an oil sheen is present,
THEN contact the EPC-CP MSGP Program Leader **immediately** following completion of the visual assessment.

[b] Document in the Labor Report (**ITEM 17**) the source of the oil sheen, if existing BMPs are effective in mitigation of potential pollutants, and if a new BMP needs to be installed.

[c] Follow-up action is required within 24 hours (see EPC-CP-QP-2109).

[9] **ITEM 15**: Check the discharge is free of any other indicators of stormwater pollution not described in any other task line above.

[10] IF there are any potential sources of pollutants observed on site,
THEN document the following and contact the EPC-CP MSGP Program Lead within 24 hours of identification:

- Potential sources;

- Indicate if there are Best Management Practices (BMPs) on site;
- Evaluate whether the BMPs are working correctly or need maintenance;
- Evaluate whether implementation of additional BMPs are needed to address the observed contaminant.

[11] Contact the FOD, DEP, and EPC-CP MSGP representative to inform them of the situation.

NOTE 5: Refer to EPC-CP-QP-2109, *MSGP Corrective Actions* for specific steps to document, track, and report conditions of potential stormwater pollution.

[12] After all task lines have been completed, make sure you have clicked the "Save" bar at the bottom of the page.

4.3 Completing the Visual Assessment Form

[1] Ensure the inspection form has been filled out completely including information not available during the field inspection (e.g., date/time of discharge, date/time of sample collection, total precipitation amount).

[2] Click the "Back" arrow button in the upper left-hand corner to exit the work order Tasks page and return to the Work Order Summary page.

[3] Click the checkered flag in the upper right corner of the Work Order Summary page to open the Work Order Status Update page. MC Express auto-populates the date and time fields.

CAUTION
MC Express automatically changes the work order status to "Closed."

[4] **ITEM 16**: Click on the expand arrow located on the right side of the "New Status" field and select "Completed" from the available dropdown menu.

[a] Ensure the date and time that is auto-populated is the date and time that the **work was completed** and ***not* the date/time the form was filled out.**

[b] IF work is performed over multiple days,
THEN note the date and time the work began in the Labor Report field.

[c] To update the date or time, click the "Date" field and make necessary adjustments using the available timestamp application. Click "Set" to apply changes.

[d] IF using a hard copy form,
THEN write the date and time the work was completed.

[5] **ITEM 17**: The field personnel must type or write his/her name in the "Labor Report Update" field.

[6] Any additional notes, observations, or site conditions not documented in a task line "Reading" or "Comments" field can be documented in the "Labor Report Update" field.

[7] Scroll down the page to the "Signature" bar and click the expand arrow on the left side of the bar to open the "Signature" field.

[a] **ITEM 18**: Capture an electronic signature by drawing with a finger on the tablet screen. The Lead Inspector is certifying that the information submitted is "true, accurate, and complete" by electronically signing the work order.

NOTE: The mouse must be used to sign electronically when using MC Express on a desktop screen (not a tablet).

[b] If using a hard copy form, the field personnel will sign his/her name and the date of when the form was signed.

[c] By signing either electronically or on hard copy, the field personnel is certifying that the information submitted is "true, accurate, and complete".

[8] Click on the "Save" bar at the bottom of the page to close the "Signature" field.

4.4 Completing the Certification Statement

EPC-CP will send completed visual assessment forms to the DEPs at the end of each quarter that will contain a certification statement in the cover memorandum. The duly authorized signatory may sign and date this certification statement rather than the certification line associated with each attached form. However, the memorandum and associated completed forms must remain together.

5.0 TRAINING

All EPC-CP personnel that execute the activities specified in this procedure must meet the minimum qualification and training requirements for their position as identified EPC-CP-PIP-2101, NPDES Multi-Sector General Permit Program Implementation Plan. This will include "self-study" (required reading) for this procedure as assigned and documented in accordance with ADESH-TPP-301, *ADESH Training Program Plan*. Other participating LANL groups may require training to local procedures and document completion of training.

Contract personnel that execute the activities specified in this procedure will be qualified and trained as required by the Exhibit D and Exhibit F. In addition, contract personnel will be required to complete "self-study" (required reading) of this procedure.

6.0 RECORDS

EPC-CP is the Office of Record for this document. It must be maintained in accordance with PD1020, *Document Control and Records Management* and ADESH-AP-006, *Records Management Plan*. Records generated by this document will be submitted to the Records Management designated point of contact or document manager for document management.

Below are records generated as a result of implementing this procedure. Records generated are identified by title and type.

Record Title	QA Record	Non-QA Record
EPC-CP-QP-2105 R0 Form-1, *MSGP Visual Assessment*	☒	☐

7.0 DEFINITIONS AND ACRONYMS

7.1 Definitions

See LANL *Definition of Terms*.

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 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 must not be confused with clarity.

Floating solids – Particulate material floating on the surface of the water. Examples include raw or waste materials 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.

Measurable storm event – Precipitation that results in an actual discharge from your site that follows the preceding measurable storm event by at least 72 hours (3 days).

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, petroleum hydrocarbon, 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.

7.2 Acronyms

See LANL Acronym Master List.

BMP	Best Management Practice
DEP	Deployed Environmental Professional
EPC-CP	Environmental Protection and Compliance – Compliance Programs
FOD	Facility Operations Division
IWD	Integrated Work Document
LANL	Los Alamos National Laboratory
MC	Maintenance Connection
MC Express	Maintenance Connection MC Express web application
MSGP	Multi-Sector General Permit
NPDES	National Pollutant Discharge Elimination System
SAP	Sampling and Analysis Plan
SWPPP	Stormwater Pollution Prevention Plan

8.0 REFERENCES

EPC-CP-QP-2109, MSGP Corrective Actions

EPC-CP-PIP-2101, NPDES Multi-Sector General Permit Program Implementation Plan

ADESH-TPP-301, ADESH Training Program Plan

ADESH-AP-006, Records Management Plan

PD1020, Document Control and Records Management

9.0 ATTACHMENTS

Attachment 1: Screenshot Examples of EPC-CP-QP-2105 R0 Form 1, MSGP Visual Assessment in MC Express

Attachment 2: EPC-CP-QP-2105 R0 Form 1, MSGP Visual Assessment Hard Copy Example

MSGP Stormwater Visual Assessments	No: EPC-CP-QP-2105	Page 14 of 19
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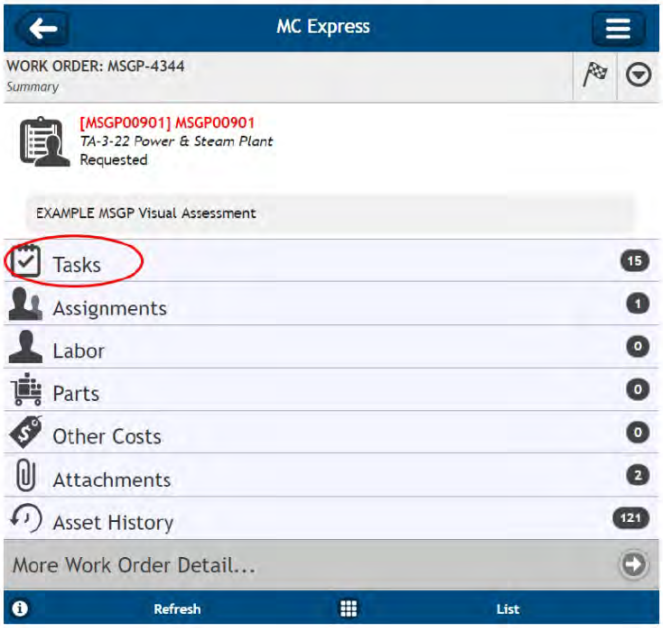
Attachment 1: Screenshot Examples of EPC-CP-QP-2105 R0 Form 1, MSGP Visual Assessment in MC Express

(Page 1 of 4)

Work Order Summary Page (Section 3.1, Steps 5 and 6)



MSGP Stormwater Visual Assessments	No: EPC-CP-QP-2105	Page 15 of 19
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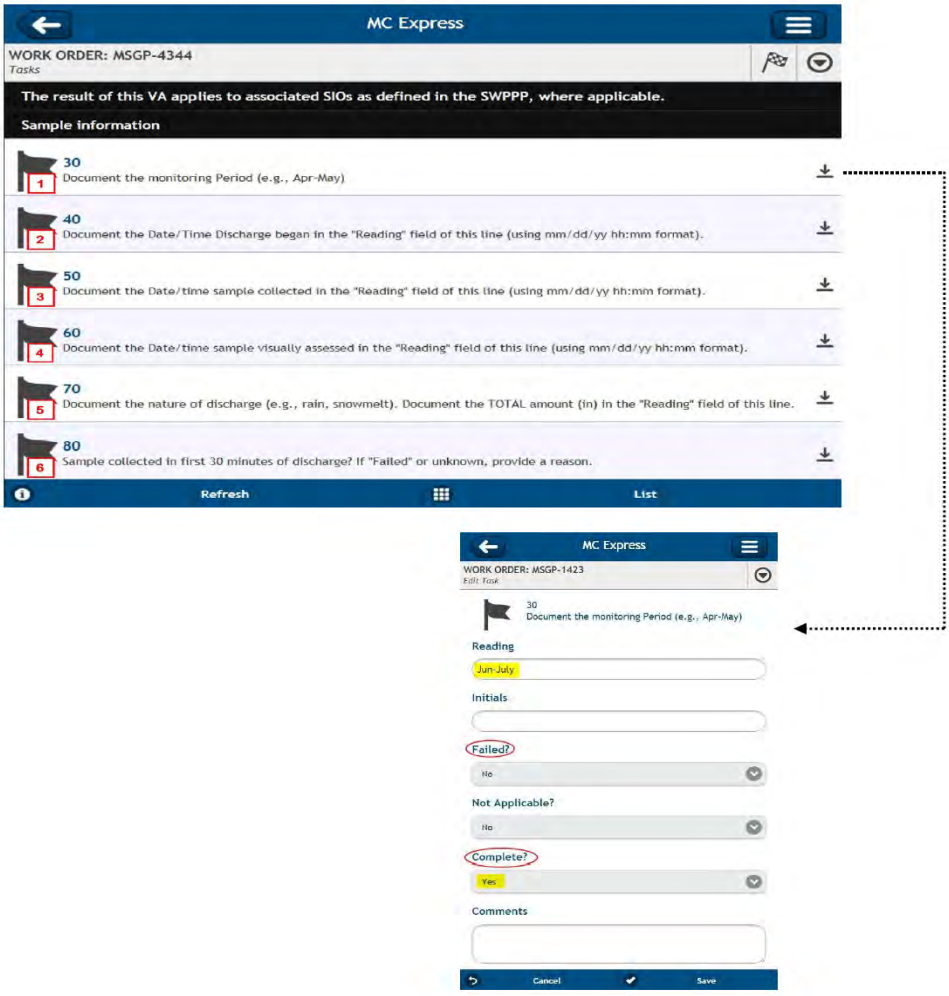
Attachment 1: Screenshot Examples of EPC-CP-QP-2105 R0 Form 1, MSGP Visual Assessment in MC Express (cont.)

(Page 2 of 4)

Work Order Tasks Page – Documenting Sample Information (Section 4.1, Steps 2-7)



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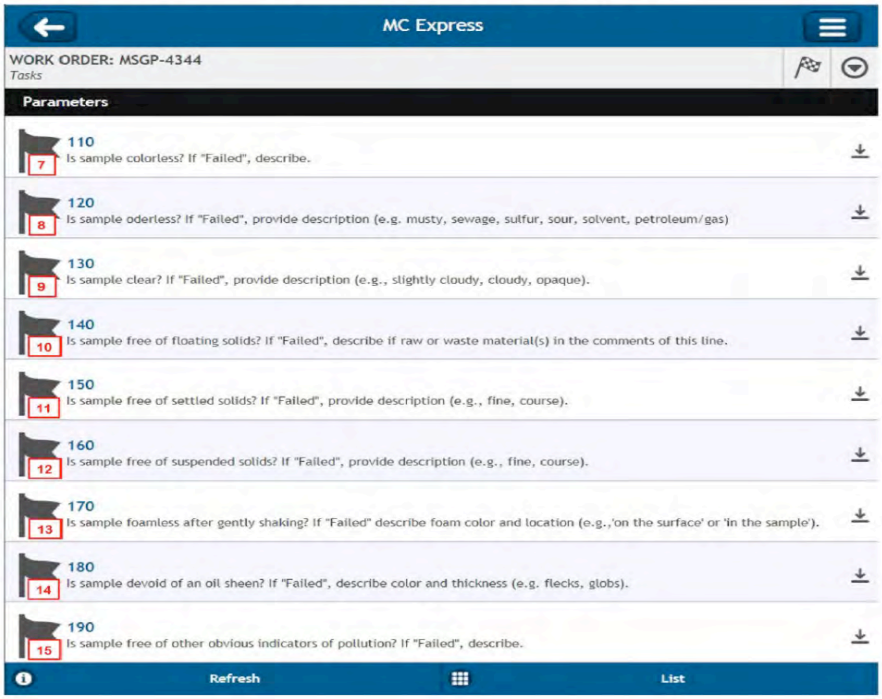
Attachment 1: Screenshot Examples of EPC-CP-QP-2105 R0 Form 1, MSGP Visual Assessment in MC Express (cont.)

(Page 3 of 4)

Work Order Tasks Page – Assessing Parameters (Section 4.2, Steps 1-9)



MSGP Stormwater Visual Assessments	No: EPC-CP-QP-2105	Page 17 of 19
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Attachment 1: Screenshot Examples of EPC-CP-QP-2105 R0 Form 1, MSGP Visual Assessment in MC Express (cont.)

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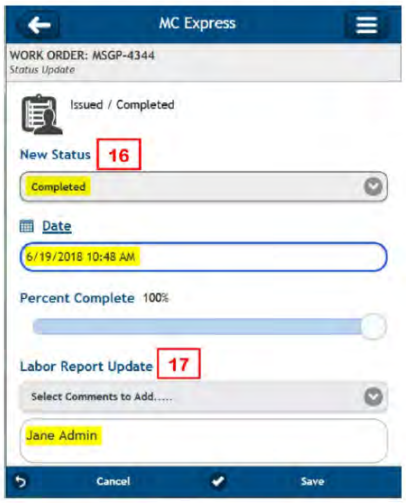
Work Order Status Update Page – Completing the Form (Section 4.3, Steps 4-7)



Work Order Status Update Page (Section 4.3, Step 7)

MSGP Stormwater Visual Assessments	No: EPC-CP-QP-2105	Page 18 of 19
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Attachment 2: EPC-CP-QP-2105 R0 Form 1, MSGP Visual Assessment Hard Copy Example
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Los Alamos National Laboratory

Work Order MSGP-4344
MSGP Monitoring Stations
Printed 6/19/2018 - 10:55 AM (Duplicate Copy)

Maintenance Details

Requested By: Admin, Jane on 6/7/2018 10:51:00 AM
Procedure: MSGP Visual Assessment (EPC-CP-QP-2105 R0 Form 1)
Last PM: 5/5/2010
Target: 12/31/2018
Priority/Type: / Inspection
Department: Utilities and Infrastructure

MSGP Program
RG121.9
TA-3-22 Power & Steam Plant
Monitored Outfall (009)
MSGP00901

Reason: EXAMPLE MSGP Visual Assessment
Special Instructions:

Contact: Admin, Jane
Phone: 123-4567

Tasks

	#	Description	Meas.	No	N/A	Yes
		The result of this VA applies to associated SIOs as defined in the SWPPP, where applicable.				
		Sample Information				
1	30	Document the monitoring Period (e.g., Apr-May)		☐	☐	☐
2	40	Document the Date/Time Discharge began in the "Reading" field of this line (using mm/dd/yy hh:mm format).		☐	☐	☐
3	50	Document the Date/time sample collected in the "Reading" field of this line (using mm/dd/yy hh:mm format).		☐	☐	☐
4	60	Document the Date/time sample visually assessed in the "Reading" field of this line (using mm/dd/yy hh:mm format).		☐	☐	☐
5	70	Document the nature of discharge (e.g., rain, snowmelt). Document the TOTAL amount (in) in the "Reading" field of this line.		☐	☐	☐
6	80	Sample collected in first 30 minutes of discharge? If "Failed" or unknown, provide a reason.		☐	☐	☐
		Parameters				
7	110	Is sample colorless? If "Failed", describe.		☐	☐	☐
8	120	Is sample odorless? If "Failed", provide description (e.g. musty, sewage, sulfur, sour, solvent, petroleum/gas).		☐	☐	☐
9	130	Is sample clear? If "Failed", provide description (e.g., slightly cloudy, cloudy, opaque).		☐	☐	☐
10	140	Is sample free of floating solids? If "Failed", describe if raw or waste material(s) in the comments of this line.		☐	☐	☐
11	150	Is sample free of settled solids? If "Failed", provide description (e.g., fine, course).		☐	☐	☐
12	160	Is sample free of suspended solids? If "Failed", provide description (e.g., fine, course).		☐	☐	☐
13	170	Is sample foamless after gently shaking? If "Failed" describe foam color and location (e.g.,'on the surface' or 'in the sample').		☐	☐	☐
14	180	Is sample devoid of an oil sheen? If "Failed", describe color and thickness (e.g. flecks, globs).		☐	☐	☐
15	190	Is sample free of other obvious indicators of pollution? If "Failed", describe.		☐	☐	☐

Labor Report

16 **Completed:** 6/19/2018 10:48:00 AM

17 **Report:** Jane Admin

18 Jane Admin — Signature / Name; 6/19/2018 — Date; Signature / Name; Date

I confirm the information as recorded is true, accurate and complete.

EPC-CP-QP-2105 R0 Form 1

MSGP Stormwater Visual Assessments	No: EPC-CP-QP-2105	Page 19 of 19
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Attachment 2: EPC-CP-QP-2105 R0 Form 1, MSGP Visual Assessment Hard Copy Example (cont.)

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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 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".

(Signatory must meet definition in Section B.11.A, eg. FOD, Ops Mgr, DESH Group Leader, EPC Group Leader)

19 Print name and title:_____

Signature:_____ Date:_____

EPC-CP-QP-2105 R0 Form 1

ATTACHMENT 19: EPC-CP-QP-2103, *INSPECTING ISCO STORMWATER RUNOFF SAMPLERS AND RETRIEVING SAMPLES*

EPC-CP-TP-2103	Revision: **0**	Los Alamos NATIONAL LABORATORY EST.1943
Effective Date: 02/24/2020	Next Review Date: 02/24/2023	

Environment, Safety, Health, Quality, Safeguards, and Security Directorate

Environment Protection and Compliance – Compliance Programs Group

Technical Procedure

Inspecting ISCO Stormwater Runoff Samplers and Retrieving Samples

Hazard Grading:	☐ Low	☒ Moderate	☐ High/Complex
Usage Level:	☒ Reference	☐ UET	☐ Mixed: UET Sections: _____
Status:	☐ New	☐ Major Revision	☐ Minor Revision
	☐ Review w/No Changes		☒ Other: New EPC-CP format and numbering system
Safety Basis:	☒ N/A	☐ USQ	☐ USI Number: _____

Document Author/Subject Matter Expert:

Name:	Organization:	Signature:	Date:
Holly L. Wheeler	EPC-CP	Signature on File	02-20-2020

Derivative Classifier: ☒ **Unclassified or** ☐ _____

Name:	Organization:	Signature:	Date:
Steven E. Wolfel	EPC-CP	Signature on File	02-19-2020

Approval Signatures:

EPC-CP Reviewer:	Organization:	Signature:	Date:
Terrill W. Lemke	EPC-CP	Signature on File	02-19-2020
EPC-CP RLM:	Organization:	Signature:	Date:
Taunia Van Valkenburg	EPC-CP	Signature on File	02-24-2020

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Inspecting ISCO Stormwater Runoff Samplers & Retrieving Samples	No: EPC-CP-TP-2103	Page 2 of 27
	Revision: 0	Effective Date: 02/24/2020

REVISION HISTORY

Document Number and Revision *[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]*
ENV-RCRA-QP-047, Rev. 0	03/11	New Document.
ENV-RCRA-QP-047, Rev. 1	02/13	Annual Review and Revision
EPC-CP-QP-047, Rev. 2	09/06/2017	Review and revision. Updated document to new template and new group name. Clarified steps. Modified inspection form EPC-CP-Form-1010. Added crosswalk to electronic form in MC Express.
EPC-CP-TP-2103 R0	02/24/2020	Supersedes EPC-CP-QP-047 R2. Reformat to new EPC-CP template. Re-number procedure and forms to new EPC-CP procedure numbering system. Minor edits.

Inspecting ISCO Stormwater Runoff Samplers & Retrieving Samples	No: EPC-CP-TP-2103	Page 3 of 27
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1.0 INTRODUCTION

Los Alamos National Laboratory (LANL) through Environmental Protection and Compliance-Compliance Programs (EPC-CP) conducts stormwater monitoring activities required pursuant to the National Pollutant Discharge Elimination System (NPDES), Multi-Sector General Permit (MSGP) at LANL. The MSGP requires LANL to monitor stormwater runoff from industrial sites relative to potential pollutants.

1.1 Purpose

This procedure describes the process for inspecting ISCO automated samplers and retrieving stormwater runoff samples from outfall locations where LANL conducts stormwater monitoring pursuant to NPDES MSGP requirements. This procedure may also be used for other Associate Laboratory Directorate of Environment, Safety, Health, Quality, Safeguards, and Security (ESHQSS) stormwater monitoring activities as needed.

1.2 Scope

The discharge of stormwater from specified industrial sites at LANL is regulated under the NPDES MSGP. The Laboratory's MSGP requires qualitative and quantitative stormwater monitoring (e.g., sample collection) to evaluate the effectiveness of control measures. Automated ISCO samplers coupled with liquid level actuators are used at MSGP monitoring stations and in support of other stormwater monitoring programs. Refrigerated (Avalanche®) and/or non-refrigerated (Model 3700) samplers are deployed and configured with multi-battery arrays, solar panels, and surge protectors.

Field personnel are required to inspect the sampling station while retrieving water samples during MSGP stormwater monitoring periods and at other intervals determined by the program or as directed by the MSGP Program Lead.

Inspections and sample retrieval conducted under this procedure should be documented using the Maintenance Connection Express™ (MC Express) web application on a tablet or notebook style computer. (In the event of electronic hardware or web application failure, personnel may use a printed hard copy to conduct inspection and sample retrieval.)

1.3 Applicability

This procedure applies to the EPC-CP technical staff and subcontractor personnel (as applicable) conducting activities at automated stormwater sampling stations used for monitoring industrial stormwater discharge under the MSGP or other stormwater monitoring programs.

The MSGP Program Lead is primarily responsible for this procedure. EPC-CP personnel are appointed responsibility for a subset of sampling stations. Other stormwater monitoring programs or projects utilizing this procedure will refer to program or project specific roles and responsibilities.

2.0 PRECAUTIONS AND LIMITATIONS

2.1 Precautions

The hazard level of the activities in this procedure is **MODERATE**. Hazards in the work described in this procedure are controlled thorough a site specific Integrated Work Document (IWD) Part I. The IWD Part II (Form 2101) addresses site specific requirements and training by the Facility Operations Division (FOD).

Personnel performing steps in this procedure that involve electrical equipment **MUST** be trained to LANL electrical safety standards as prescribed in the IWD before performing those steps.

Personnel must wear appropriate clothing (e.g., boots, long pants, etc.) to perform work in the field.

Work 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, or LANL operations such as firing shots or burns).

In the event of pest infestation (e.g., wasp or rat nests), do not attempt to remove the pest yourself. Call LANL Pest Control to coordinate the removal of the pest(s).

If conditions prevent field work, document the conditions in the Labor Report Update field on the form and notify the Program Lead or designee within 24 hours. Multiple attempts can be documented on the original form. If the target date cannot be met, the field personnel must contact the Program Lead no less than 24 hours before the target date for guidance.

2.2 Limitations

In MC Express, document responses to each question on a work order by clicking the expand arrow located on the right side of the task line and changing the "Complete" or "Failed" or "N/A" line to "Yes". When using a hard copy form, mark the appropriate check box.

Throughout this process, the field personnel will document comments and notations in the "Reading" field of the associated task line. Additional comments not documented in a "Reading" field can be entered in the "Comments" field of the same task line. If field personnel need more space, additional comments can be entered in the "Labor Report Update" field (see Section 4.10) when the work order is updated to "Complete" status. When using a hard copy form, document comments on the corresponding task line. If additional space is needed, comments can be entered in the "Labor Report" section at the bottom of the form.

Some terminology varies between the MC Express software and the Maintenance Connection desktop software.

- The "Reading" field in MC Express is the same field as "Reading Final" in Maintenance Connection desktop and "Meas." on a hard copy (printed) work order.

- The "Complete" option in MC Express is the same as a "Yes" answer; the "Failed" option in MC Express is the same as a "No" answer. Maintenance Connection desktop and hard copy (printed) work orders use "Yes" and "No" terminology.

3.0 PREREQUISITE ACTIONS

3.1 Planning and Coordination

1. Ensure that field personnel have access to accurate time measurement at the Site. When at the site, the clock time on the ISCO sampler must be set to Mountain Standard Time (MST) at all times, with no daylight saving time adjustment.
2. Schedule work to be completed by the target date appearing on the work order(s) or as requested by the MSGP Program Lead if a form is not issued.
3. Obtain any necessary additional paperwork before conducting this work, including IWD's, and excavation permits (as necessary).
4. As specified in the IWD, inform (e.g., by e-mail) facility contacts and/or Deployed Environmental Professional of the schedule for sampler work and locations up to a week before (preferred), but no later than the day before (for minor changes) so work may be added to the appropriate plan of the day.

   NOTE: For some FODs like the Utilities and Institutional Facilities FOD, MSGP stormwater monitoring activities are on a standing plan of the day. However, this must be requested each year at the beginning of the monitoring season.
5. Gather the required equipment (see Section 3.3) for the work to be done.
6. Using the Safari or Chrome web browser on a tablet or notebook style computer, navigate to http://express.maintenanceconnection.com and select English from the available dropdown menu.
7. Log into the MC Express application (http://express.maintenanceconnection.com) and confirm that the work order list displayed matches your sites. If the work order lists do not match, contact EPC-CP Data Management personnel for clarification.
8. In MC Express, click on the appropriate work order number to open the work order. The work order will open in the display to the Work Order Summary page.
9. Click on the "Tasks" bar to navigate to the work order Tasks page. See MC Express screen shot examples in Attachment 1.
10. Always log out of MC Express when you have finished work OR if work is interupted.

3.2 Performance Documents

Personnel performing this procedure will be familiar with the most current versions of the following plans and operation manuals if this equipment is utilized. Copies of the following are not required to be on the job site.

- EPC-CP MSGP Sampling and Analysis Plan (SAP) most recent revision for the current monitoring year OR project specific monitoring plan;
- ISCO 3700 Portable Samplers Installation and Operation Guide;
- ISCO Avalanche® Installation and Operation Guide; or
- ISCO 701 pH/Temperature Module Installation and Operation Guide (if equipped at a station).

3.3 Special Tools, Equipment, Parts, and Supplies

Ensure the following equipment is available.

- Safety glasses;
- Sturdy hiking boots or steel toed shoes (as needed) with soles that grip and other required facility specific Personal Protective Equipment;
- Nitrile gloves;
- Leather gloves;
- Cell phone (only government cell phones are allowed in secure areas). (See https://int.lanl.gov/policy/documents/P217.pdf for requirements for using portable electronic devices on Laboratory property);
- Copy of this procedure;
- Copy of the IWD;
- EPC-CP MSGP SAP most recent revision for the current monitoring year OR project specific monitoring plan;
- Site Map(s) (as needed);
- Current electronic or paper inspection form EPC-CP-TP-2103 Form 1, *MSGP ISCO Sampler Inspection and Sample Retrieval;*
- Government issued electronic tablet with Safari or Chrome web browser and Blackberry UEM™ app. (See https://int.lanl.gov/policy/documents/P217.pdf for requirements for using portable electronic devices on Laboratory property);
- Water Sample Collection and Processing Log/Field Chain of Custody (SCPL) (see EPC-CP-QP-2106);
- Access to accurate time measurement;
- Necessary access and station keys;
- Insulated hand tools;
- Charged spare battery(s);

- Battery voltage tester;
- Clean spare tubing (pump, suction, discharge types, sampler specific);
- Certified clean replacement sample bottles (glass and poly);
- Spare/replacement sampler parts (liquid level actuator, distributor arm);
- Shovel;
- Wooden stakes;
- Plastic wire "zip" ties;
- Coolers with ice or Blue Ice®;
- Paper Towels;
- Marker pen (permanent, waterproof);
- Ball point pen;
- Re-sealable zipper storage bags (e.g., Ziploc®);
- Custody seals; and
- 0.45 micron filter (where applicable).

4.0 INSPECTING THE SAMPLER AND SAMPLE RETRIEVAL

Inspection of ISCO samplers is performed weekly during the sampling season. Samples retrieved are determined at a sampling station based on the current year SAP. See Attachment 1 for screen shot examples of EPC-CP-TP-2103 R0 Form 1, *ISCO Sampler Inspection and Sample Retrieval* in MC Express. See Attachment 2 for an example of the form in hard copy format.

NOTE: Each ITEM number listed in red font below corresponds to a red numbered box on both screenshots (Attachment 1) and hard copy format (Attachment 2).

4.1 Inspecting the Sampler

4.1.1 On Arrival

[1] Remove the top cover from the sampler.

[2] **ITEM 1**: Check and document the sampler is ON and its condition upon arrival. Explain any non-functional status.

[a] IF a sampler has been inactivated (e.g., sample collection completed) prior to this inspection but continues to appear on the inspection form, THEN answer this task line question "N/A."

[b] Subsequent questions regarding the inactive sampler may be left unanswered in this section.

[3] **ITEM 2**: Check and document the ISCO programming displays the following.

[a] ISCO 3700 sampler display should indicate "Sampler Inhibited"

[b] Avalanche sampler display should indicate "Program Disabled"

[c] Document messages other than those in [a] and [b] (e.g., "Done X samples," "sampler off," etc.,).

[4] IF there is no indication of flow and the sampler triggered due to a non-flow event, THEN describe why the sampler triggered (e.g., animal, tumbleweed, etc.,).

[5] **ITEM 3**: Check and document the sampler is set to the correct MST +/- no more than 1 minute. Do **NOT** use Daylight Savings Time.

[a] IF the sampler is set incorrectly,
THEN reprogram for the correct MST.

[b] Describe the work performed and correction applied (e.g., "ISCO clock was X minutes slow").

[6] If the location has more than one sampler, complete Steps 1 through 5 for each sampler.

4.1.2 Water Collection Information

[1] Don nitrile gloves and safety glasses.

[2] Remove the center section from the sampler.

[3] **ITEM 4**: Document evidence of storm water flow at the sampling location by describing the evidence of flow (e.g., sediment or vegetation movement, erosion, standing water).

[a] IF the sampler did not trip but there is evidence of flow,
THEN document the date and time storm water discharge began from the precipitation report.

[b] IF the sampler tripped or collected storm water,
THEN document the date/time stamp from the sampler (or from the precipitation report if the sampler did not record a date/time stamp).

[4] **ITEM 5**: Document that storm water is collected.

[a] Document if the water is taken by grab sample.

[b] Complete the Bottle Information (**ITEM 20**) in Section 4.1.7.

[c] Follow the steps in thru Section 4.2 Step 16 to retrieve samples.

[5] **ITEM 6**: For Avalanche samplers only, record the current refrigerator temperature in degrees Celsius (°C) when water is collected.

[a] IF unable to review the temperature,
THEN check "No" and describe the condition (e.g., dead battery, electrical short).

[6] **ITEM 7**: For Avalanche samplers equipped with an ISCO pH and Temp Module, check and document a pH measurement was taken on the collected water.

[a] Record the pH measurement taken at the time Bottle 1 was filled as "Average:Minimum:Maximum."

[b] IF unable to review the pH,
THEN check "No" and describe the condition (e.g., damaged meter).

4.1.3 Water Retrieval Information

[1] **ITEM 8**: Check and document whether a sample volume was retrieved from the sampler and taken off site.

[a] Record the estimated total volume in liters (L) or milliliters (ml) **taken off site**.

[2] **ITEM 9**: Check and document whether a visual assessment of the water was performed (refer to EPC-CP-QP-2105).

[a] Do **NOT** conduct a visual assessment on a filtered sample. Record "Filtered sample."

4.1.4 On Departure

WARNING
You MUST be trained to LANL electrical safety standards as prescribed in the IWD before performing Steps 2 and 3.

[1] Prepare yourself in accordance with the IWD for electrical work (e.g. wear safety glasses and leather gloves, use insulated tools, no jewelry or anything metal hanging from body, etc.,).

[2] **ITEM 10**: Check that all cable and electrical connections are attached and firmly tightened (not loose) upon departure.

NOTE: Connections may work loose over time due to temperature changes and if there are dis-similar metals at the connection points. The loose connections can introduce voltage spikes, which inherently cause current spikes that may result in blown fuses.

[a] IF the cables require replacement, connections require tightening, or other maintenance performed,
THEN describe the work performed (e.g., "tightened connectors on battery).

[b] IF maintenance cannot be completed at the time of inspection,

THEN describe the condition (e.g. cables chewed through by animal) and follow-up work needed (e.g., replace cables).

[3] **ITEM 11**: Use a voltage meter to check the power supply.

[a] Record the voltage of the battery(ies) in volts (V).

[b] Document if battery voltage is acceptable upon departure from the site (≥11.7 for non-floating charged batteries at ISCO 3700 samplers and ≥11.0 for floating-charged batteries at Avalanche samplers).

[c] Replace a battery with a charged battery when the voltage is not acceptable.

[d] Check the voltage of the solar panel if access can be gained to the weather protected terminal covers on the back of the panel.

[4] Contact the program Electrical Safety Officer if any issues with wiring or batteries cannot be resolved on site.

4.1.5 Equipment Specific Tasks

[1] **ITEM 12**: Check and document the sampler passes the diagnostic test. (Refer to EPC-CP-TP-2102 or sampler Operator's Guide for instructions on running a diagnostics test.)

[a] IF a sampler has been inactivated (e.g., sample collection completed) prior to this inspection but continues to appear on the inspection form,
THEN answer this task line question as "N/A." Subsequent questions regarding this sampler may be left unanswered in this section.

CAUTION
Only reset the pump counts after replacing the internal pump tubing.

[2] IF the internal pump tubing has reached or exceeded the preset pump counts (500,000 for ISCO 3700s, 1,000,000 for Avalanches),
THEN replace the pump tubing and reset the pump counts.

[3] **ITEM 13**: Check and document the sample tubing is free or clear of debris.

[a] Clear obstructions as needed and document maintenance performed.

[4] Check the physical condition of sample tubing and vent tubing.

[a] Replace tubing as needed and document maintenance performed.

[5] **ITEM 14**: Check and document the sample tubing has passed a suction test.

[6] **ITEM 15**: Check and document the sampler is ON prior to departing the site.

[7] **ITEM 16**: Check and document the liquid level actuator has been set to "Latch" prior to departing the site.

[a] IF the sampler tripped and requires reset of the sampling program, THEN reset the actuator by toggling the switch to "Reset" and back to "Latch."

[8] **ITEM 17**: Check and document the ISCO programming displays the following.

[a] ISCO 3700 sampler display should indicate "Sampler Inhibited."

[b] Avalanche sampler display should indicate "Program Disabled."

[c] Reprogram the sampler as needed and document maintenance performed.

[9] Replace and secure the sampler top cover and secure the sampler shelter (if sampler is in a shelter).

[10] If the location has more than one sampler, complete Steps 1 through 11 for each sampler.

4.1.6 Maintenance Information

[1] **ITEM 18**: Document maintenance completed while on site that is not documented elsewhere on the work order by describing the work performed.

NOTE: Maintenance items may include (but are not limited to) site clearing, installing new or additional equipment, removing equipment, animal/pest mitigation, problems with equipment location, etc.

[2] IF a battery was replaced,
THEN record the voltage of the new battery and the battery identification number.

[a] IF the battery does not have an identification number,
THEN:

- Contact the MSGP Program Lead to have one assigned.
- Paint or write the number in a permanent manner on the battery.

[3] **ITEM 19**: Document if maintenance is needed that was not completed while on site and that is not documented elsewhere on the work order.

[a] Describe on the work order the follow-up maintenance needed.

[b] When the maintenance has been complete, describe the actions taken to complete the work on the original work order.

[c] Record the maintenance completion date and time on the original work order.

4.1.7 Bottle Information

[1] **ITEM 20**: Document water collected by recording the following information for each bottle by position number in the carousel.

- Date (MM/DD/YY or MM-DD-YY) and time the ISCO collected water,
- Volume (L or ml) of water in the bottle,
- Type of bottle (e.g. G for glass, P for poly),
- Specific ISCO displayed message, if present.

[2] IF the sampler(s) did not trigger,
THEN answer the task line question as "N/A" for Bottle #1 of each sampler and leave the other Bottle task lines unanswered.

[3] IF a sampler has been inactivated (e.g., sample collection completed) prior to this inspection but continues to appear on the inspection form,
THEN answer the task line question as "N/A". Subsequent questions regarding this sampler may be left unanswered in this section.

[4] Proceed to Section 4.4 if no water was collected.

4.2 Retrieving Samples

Refer to the flow diagram in Attachment 3 as an aid in determining sample retrieval.

[1] Don nitrile gloves and safety glasses.

[2] Add up the estimated volume of water collected in the sampler.

[3] Check that the estimated total volume of water in glass and poly matches the required volume for the specific location identified in the MSGP SAP.

NOTE 1: The volume of water required to complete analytical may vary by monitored location.

[a] IF the sample volume is sufficient to fulfill all analytical requirements,
THEN continue to Step 4.

[b] IF the sample volume is sufficient to fulfill part of the analytical requirements,
THEN consult the prioritization order on the MSGP SAP to determine which analytical to fulfill,
OR contact the MSGP Data Manager. Continue to Step 4 but retrieve only the volume needed.

[c] IF the collected sample will NOT fulfill the minimum required volume for any analytical,
THEN:

- Complete a Visual Assessment if the sample is not filtered (refer to EPC-CP-QP-2105),
- Record estimated total volume (L or ml) retrieved as "0" in **ITEM 8**,

- Return all water to the ground at the sampling location,
- Skip to Step 11.

CAUTION
ISCO Avalanche samplers are programmed to cool samples to 4°C. If water is collected and the refrigerator temperature reads higher than 6°C, **do not** retrieve samples that require ICE preservation. Samples do not meet preservation requirements.

[4] Remove filled and partially filled bottles from the carousel one at a time.

[5] For samples to be retrieved,

[a] Immediately place lids onto the sample bottles.

[b] Securely seal the lids.

[c] Place a custody seal on each bottle.

[6] Write the following on each retrieved sample bottle.

- Date and time collected (e.g., recorded by the ISCO sampler)
- Sampler Location number

[7] Conduct a Visual Assessment on a non-filtered sample (refer to EPC-CP-QP-2105).

[8] Record estimated total volume (L or ml) retrieved in **ITEM 8**.

[9] Place retrieved sample bottles in a cooler with blue ice (or equivalent).

[10] Return any excess stormwater collected that exceeded the amount required to the ground at the location collected.

[11] Install new certified clean sample bottles in the carousel to replace retrieved bottles.

[a] The number and type of bottles may vary. Ensure bottles match the configuration specified in the MSGP SAP.

[12] Replace the 0.45-micron filter as needed.

NOTE 2: Consult the most current revision of the MSGP SAP for specifics.

[13] IF the sampler is turned OFF for the quarter but new certified clean sample bottles and/or the filter have not been replaced,
THEN note this as follow-up maintenance required in **ITEM 19**.

[14] Replace and secure the center section of the sampler.

[15] If the location has more than one sampler, complete Section 4.1.7 thru Section 4.2 for each sampler.

[16] Return to Section 4.1.2, Step 5.

4.3 Removing Stormwater Samples from the field

[1] Transport retrieved samples and corresponding SCPL (see EPC-CP-QP-2106) to the EPC-CP Stormwater Program Laboratory at TA-59-1.

[2] Sign and date/time the SCPL and place it with the samples in the refrigerator.

[3] Ensure custody seal is intact on each sample bottle.

[4] Refer to EPC-CP-QP-2106, *Processing MSGP Stormwater Samples* for processing and submitting samples for shipping to the SMO.

[5] Ensure the EPC-CP Stormwater Program Laboratory door is locked upon exit.

4.4 Completing the Inspection Form

See Attachment 1 for completing the form in MC Express and Attachment 2 for a hard copy example.

[1] After all task lines have been completed, make sure you have clicked the "Save" bar at the bottom of the page.

[2] Click the "Back" arrow button  in the upper left hand corner to exit the work order Tasks page and return to the Work Order Summary page.

[3] Click the checkered flag  in the upper right corner of the Work Order Summary page to open the Work Order Status Update page. MC Express auto-populates the date and time fields.

CAUTION
MC Express automatically changes the work order status to "Closed."

[4] **ITEM 21:** Click on the expand arrow located on the right side of the "New Status" field and select "Completed" from the available dropdown menu.

[a] Ensure the date and time auto-populated are the date and time the **work was completed** and ***not* the date/time the form was filled out**.

[b] IF work is performed over multiple days,
THEN note the date and time the work began in the Labor Report field.

[c] To update the date or time, click the "Date" field and make necessary adjustments using the available timestamp application. Click "Set" to apply changes.

[d] IF using a hard copy form,
THEN write the date and time the work was completed.

[5] **ITEM 22:** The field personnel must type or write his/her name in the "Labor Report Update" field.

[6] Additional notes, observations, or site conditions not documented in a task line "Reading" or "Comments" field can be documented in the "Labor Report Update" field.

[7] Scroll down the page to the "Signature" bar and click the expand arrow on the left side of the bar to open the "Signature" field.

[a] **ITEM 23**: Capture an electronic signature by drawing with a finger on the tablet screen.

NOTE: The mouse must be used to sign electronically when using MC Express on a desktop screen (not a tablet).

[b] If using a hard copy form, the field personnel will sign his/her name and date when the form is signed.

[c] The field personnel is certifying that the information submitted is "true, accurate, and complete" by electronically signing work order.

[8] Click on the "Save" bar at the bottom of the page to close the "Signature" field.

[9] IF completing a hard copy,
THEN return the form to the MSGP Program Lead.

5.0 TRAINING

Personnel performing steps in this procedure that involve electrical equipment **MUST** be trained to LANL electrical safety standards as prescribed in the IWD before performing those steps.

All EPC-CP personnel that execute the activities specified in this procedure must meet the minimum qualification and training requirements for their position as identified EPC-CP-PIP-2101, NPDES Multi-Sector General Permit Program. This will include "self-study" (required reading) for this procedure as assigned and documented in accordance with ADESH-TPP-301, *ADESH Training Program Plan*. Other participating LANL groups may require training documentation pursuant to local procedures.

Contract personnel that execute the activities specified in this procedure will be qualified and trained as required by the Exhibit D and Exhibit F. In addition, contract personnel will be required to complete "self-study" (required reading) of this procedure.

6.0 RECORDS

EPC-CP is the Office of Record for this document and must be maintained in accordance with PD1020, *Document Control and Records Management* and ADESH-AP-006, *Records Management Plan*. Records generated by this document will be submitted to the Records Management designated point of contact or document manager for document management.

Below are records generated as a result of implementing this procedure. Records generated are identified by title and type.

Record Title	QA Record	Non-QA Record
EPC-CP-TP-2103 R0 Form 1, *ISCO Sampler Inspection and Sample Retrieval*	☒	☐

7.0 DEFINITIONS AND ACRONYMS

7.1 Definitions

See LANL *Definition of Terms*.

7.2 Acronyms

See LANL Acronym Master List.

°C	Degrees in Celsius
EPC-CP	Environmental Protection and Compliance-Compliance Programs
FOD	Facility Operations Division
IWD	Integrated Work Document
L	Liter
LANL	Los Alamos National Laboratory
MC Express	Maintenance Connection MC Express web application
ml	Milliliter
MSGP	Multi-Sector General Permit
MST	Mountain Standard Time
NPDES	National Pollutant Discharge Elimination System
SAP	Sampling and Analysis Plan
SCPL	Sample Collection and Processing Log/Field Chain of Custody
V	Volts

8.0 REFERENCES

EPC-CP-QP-2105, MSGP Stormwater Visual Assessments

EPC-CP-QP-2106, Processing MSGP Stormwater Samples

EPC-CP-TP-2102, Installing, Setting Up, and Operating ISCO Samplers

EPC-CP-PIP-2101, NPDES Multi-Sector General Permit Program Implementation Plan

ADESH-TPP-301, ADESH Training Program Plan

ADESH-AP-006, Records Management Plan

PD1020, Document Control and Records Management

9.0 ATTACHMENTS

Attachment 1: Screenshot Examples of EPC-CP-TP-2103 R0 Form 1, *ISCO Sampler Inspection and Sample Retrieval* in MC Express

Attachment 2: EPC-CP-TP-2103 R0 Form 1, *ISCO Sampler Inspection and Sample Retrieval* Hard Copy Example

Attachment 3: Sample Retrieval Flow Diagram

Attachment 1: Screenshot Examples of EPC-CP-TP-2103 R0 Form 1, ISCO Sampler Inspection and Sample Retrieval in MC Express

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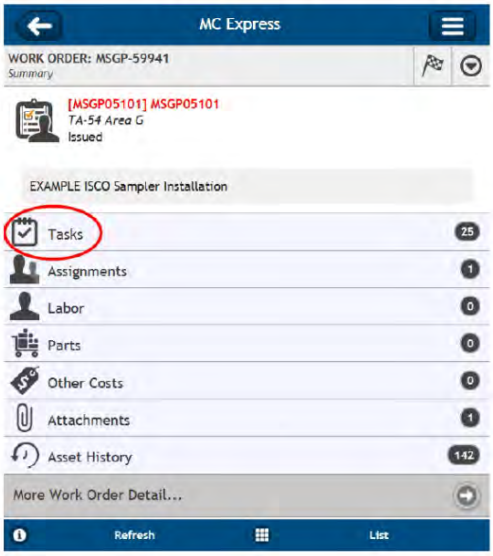
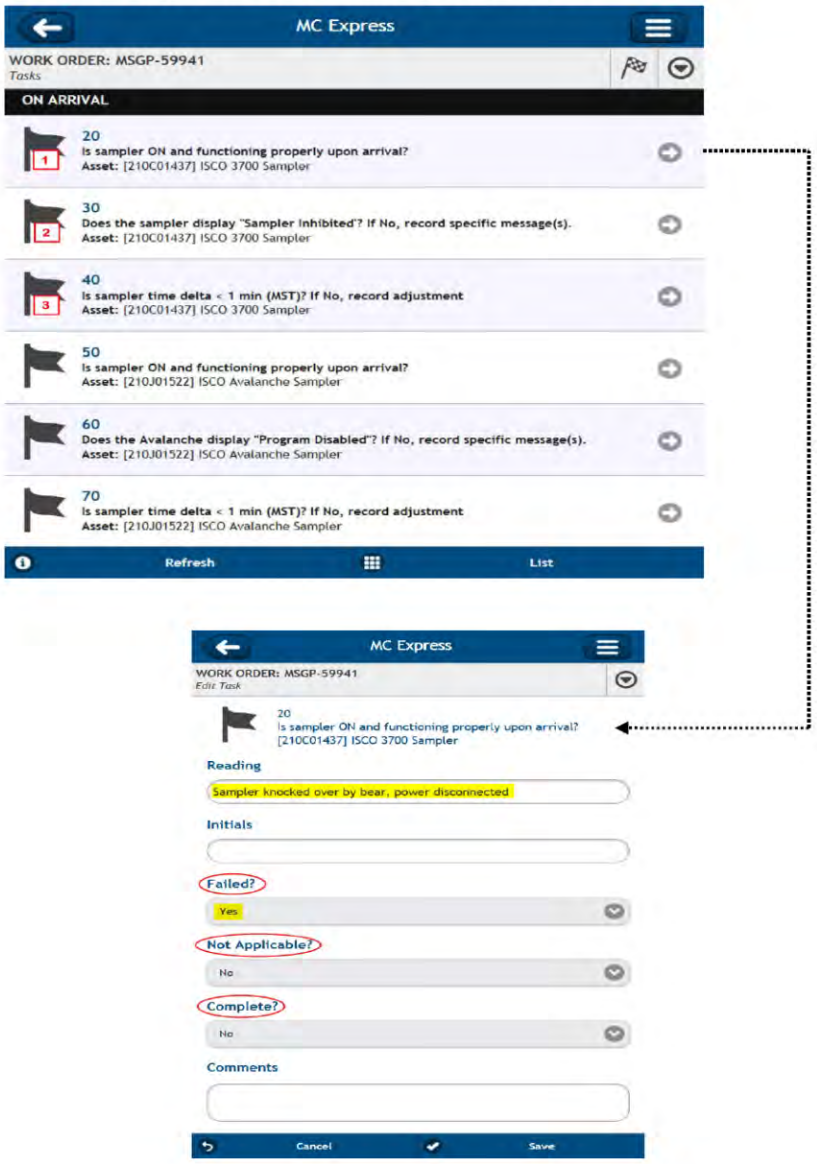
Work Order Summary Page (Section 3.1, Steps 8 and 9)



Attachment 1: Screenshot Examples of EPC-CP-TP-2103 R0 Form 1, *ISCO Sampler Inspection and Sample Retrieval* in MC Express (cont.)

(Page 2 of 6)

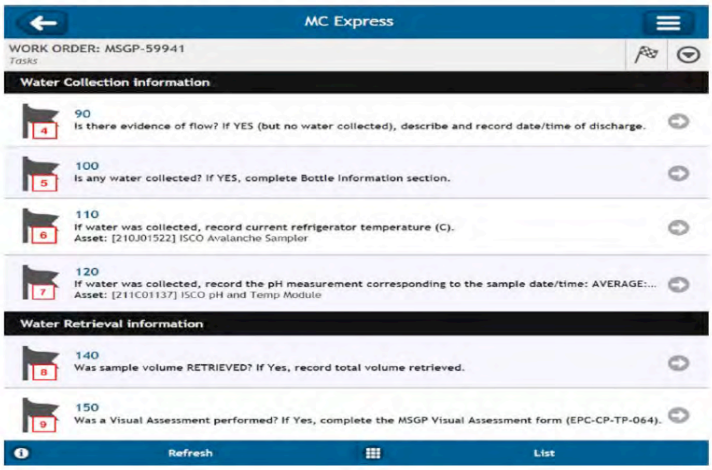
Work Order Tasks page - On Arrival (Section 4.1.1, Steps 2-5)



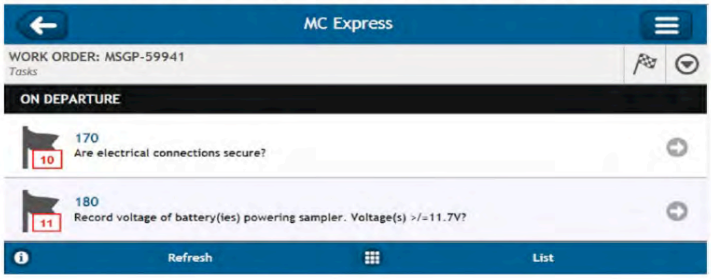
Attachment 1: Screenshot Examples of EPC-CP-TP-2103 R0 Form 1, *ISCO Sampler Inspection and Sample Retrieval* in MC Express (cont.)

(Page 3 of 6)

Work Order Task Page – Water Collection Information and Water Retrieval Information (Sections 4.1.2, Steps 3-6 and 4.1.3, Steps 1 and 2)



Work Order Task Page – On Departure (Sections 4.1.4, Steps 2 and 3)



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Attachment 1: Screenshot Examples of EPC-CP-TP-2103 R0 Form 1, *ISCO Sampler Inspection and Sample Retrieval* in MC Express (cont.)

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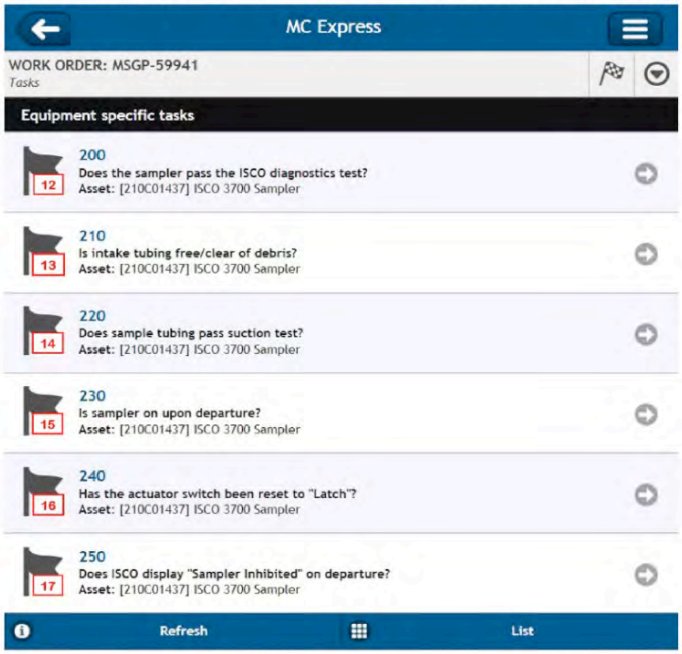
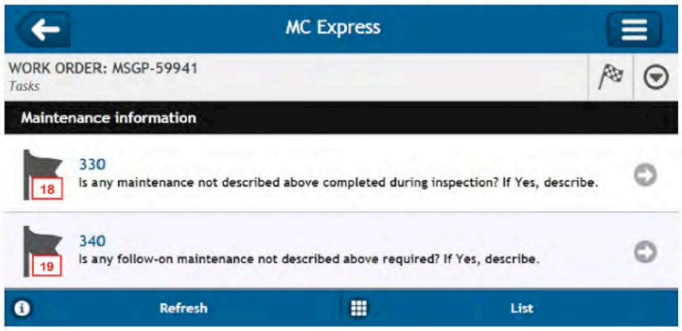
Work Order Task Page – Equipment Specific Tasks (Sections 4.1.5, Steps 1-8)



Work Order Task Page – Maintenance Information (Sections 4.1.6, Steps 1-3)



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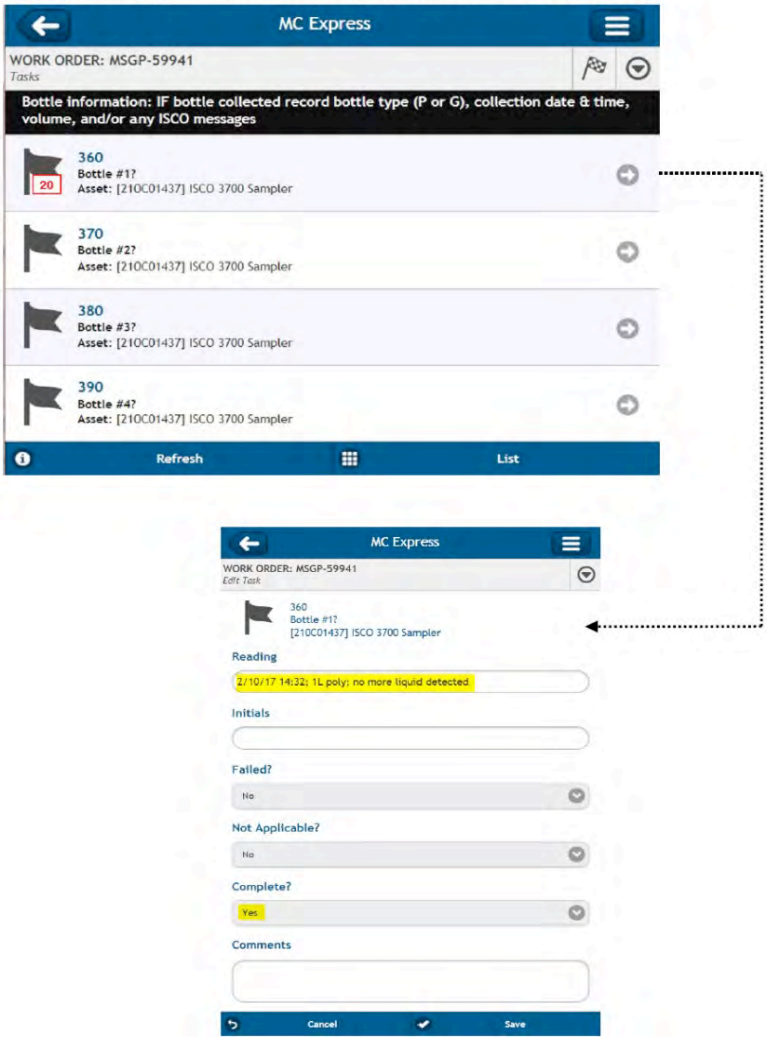
Attachment 1: Screenshot Examples of EPC-CP-TP-2103 R0 Form 1, ISCO Sampler Inspection and Sample Retrieval in MC Express (cont.)

(Page 5 of 6)

Work Order Task Page – Bottle Information (Sections 4.1.7, Step 1)



Inspecting ISCO Stormwater Runoff Samplers & Retrieving Samples	No: EPC-CP-TP-2103	Page 24 of 27
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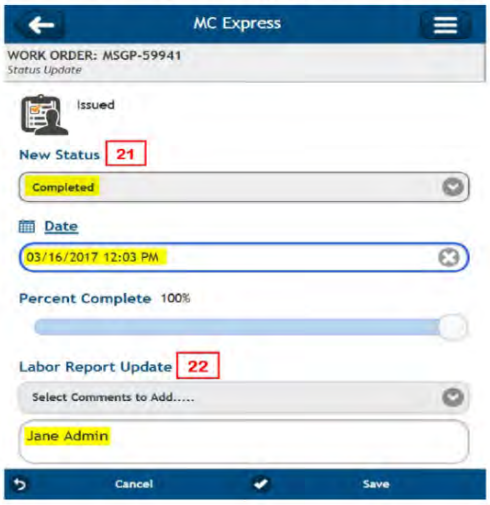
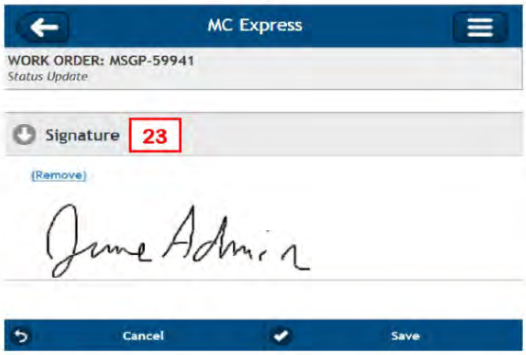
Attachment 1: Screenshot Examples of EPC-CP-TP-2103 R0 Form 1, *ISCO Sampler Inspection and Sample Retrieval* in MC Express (cont.)

(Page 6 of 6)

Work Order Status Update Page (Section 4.4, Steps 4 and 5)



Work Order Status Update Page (Section 4.4, Step 7)



Inspecting ISCO Stormwater Runoff Samplers & Retrieving Samples	No: EPC-CP-TP-2103	Page 25 of 27
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Attachment 2: EPC-CP-TP-2103 R0 Form 1, *ISCO Sampler Inspection and Sample Retrieval* Hard Copy Example
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Los Alamos National Lab - ADESH

Work Order MSGP-59941
MSGP Monitoring Stations
Printed 8/10/2017 - 11:25 AM (Duplicate Copy)

Maintenance Details

Requested By: Admin, Jane on 8/10/2019 11:23:00 AM
Procedure: MSGP ISCO Sampler Inspection and Sample Retrieval (EPC-CP-TP-2103 R0 Form 1
Last PM: 7/20/2019
Project:

Target:12/31/2019
Priority/Type: / Inspection
Department: Utilities and Infrastructure

MSGP Program
RG121.9
TA-3-38 Carpenter Shop
Monitored Outfall (073)
MSGP07302

Contact: Admin, Jane
Phone: 123-4567

Reason: Example ISCO Sampler Inspection and Sample Retrieval

Tasks

	#	Description	Meas.	No	N/A	Yes
		ON ARRIVAL				
1	20	ISCO 3700 Sampler [210C01437] Is sampler ON and functioning properly upon arrival?		☐	☐	☐
2	30	ISCO 3700 Sampler [210C01437] Does the sampler display "Sampler Inhibited"? If No, record specific message(s).		☐	☐	☐
3	40	ISCO 3700 Sampler [210C01437] Is sampler time delta < 1 min (MST)? If No, record adjustment.		☐	☐	☐
	50	ISCO Avalanche Sampler [210J01522] Is sampler ON and functioning properly upon arrival?		☐	☐	☐
	60	ISCO Avalanche Sampler [210J01522] Does the Avalanche display "Program Disabled"? If No, record specific message(s).		☐	☐	☐
	70	ISCO Avalanche Sampler [210J01522] Is sampler time delta < 1 min (MST)? If No, record adjustment.		☐	☐	☐
		Water Collection information				
4	90	Is there evidence of flow? If YES (but no water collected), describe and record date/time of discharge.		☐	☐	☐
5	100	Is any water collected? If YES, complete Bottle Information section.		☐	☐	☐
6	110	ISCO Avalanche Sampler [210J01522] If water was collected, record current refrigerator temperature (C).		☐	☐	☐
7	120	ISCO pH and Temp Module [21 1C01137] If water was collected, record the pH measurement corresponding to the sample date/time. AVERAGE: MINIMUM: MAXIMUM:		☐	☐	☐
		Water Retrieval information				
8	140	Was sample volume RETRIEVED? If Yes, record total volume retrieved.		☐	☐	☐
9	150	Was a Visual Assessment performed? If Yes, complete the MSGP Visual Assessment form (EPC-CP-QP-2105).		☐	☐	☐
		ON DEPARTURE				
10	170	Are electrical connections secure?		☐	☐	☐
11	180	Record voltage of battery(ies) powering sampler. Voltage(s) >/=11.7V?		☐	☐	☐
		Equipment specific tasks				
12	200	ISCO 3700 Sampler [210C01437] Does the sampler pass the ISCO diagnostics test?		☐	☐	☐
13	210	ISCO 3700 Sampler [210C01437] Is intake tubing free/clear of debris?		☐	☐	☐
14	220	ISCO 3700 Sampler [210C01437] Does sample tubing pass suction test?		☐	☐	☐
15	230	ISCO 3700 Sampler [210C01437] Is sampler on upon departure?		☐	☐	☐
16	240	ISCO 3700 Sampler [210C01437] Has the actuator switch been reset to "Latch"?		☐	☐	☐
17	250	ISCO 3700 Sampler [210C01437] Does ISCO display "Sampler Inhibited" on departure?		☐	☐	☐

EPC-CP-TP-2103 R0 Form 1

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Attachment 2: EPC-CP-TP-2103 R0 Form 1, *ISCO Sampler Inspection and Sample Retrieval* Hard Copy Example (cont.)

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	260	**ISCO Avalanche Sampler [210J01522]** Does the sampler pass the ISCO diagnostics test?		☐	☐	☐
	270	**ISCO Avalanche Sampler [210J01522]** Is intake tubing free/clear of debris?		☐	☐	☐
	280	**ISCO Avalanche Sampler [210J01522]** Does sample tubing pass suction test?		☐	☐	☐
	290	**ISCO Avalanche Sampler [210J01522]** Is sampler on upon departure?		☐	☐	☐
	300	**ISCO Avalanche Sampler [210J01522]** Has the actuator switch been reset to "Latch"?		☐	☐	☐
	310	**ISCO Avalanche Sampler [210J01522]** Does Avalanche display "Program Disabled" on departure?		☐	☐	☐
		Maintenance information				
18	330	Is any maintenance not described above completed during inspection? If Yes, describe.		☐	☐	☐
19	340	Is any follow-on maintenance not described above required? If Yes, describe.		☐	☐	☐
		Bottle information: IF bottle collected record bottle type (P or G), collection date & time, volume, and/or any ISCO messages				
20	360	**ISCO 3700 Sampler [210C01437]** Bottle #1?		☐	☐	☐
	370	**ISCO 3700 Sampler [210C01437]** Bottle #2?		☐	☐	☐
	380	**ISCO 3700 Sampler [210C01437]** Bottle #3?		☐	☐	☐
	390	**ISCO 3700 Sampler [210C01437]** Bottle #4?		☐	☐	☐
	400	**ISCO 3700 Sampler [210C01437]** Bottle #5?		☐	☐	☐
	410	**ISCO 3700 Sampler [210C01437]** Bottle #6?		☐	☐	☐
	420	**ISCO 3700 Sampler [210C01437]** Bottle #7?		☐	☐	☐
	430	**ISCO 3700 Sampler [210C01437]** Bottle #8?		☐	☐	☐
	440	**ISCO 3700 Sampler [210C01437]** Bottle #9?		☐	☐	☐
	450	**ISCO 3700 Sampler [210C01437]** Bottle #10?		☐	☐	☐
	460	**ISCO 3700 Sampler [210C01437]** Bottle #11?		☐	☐	☐
	470	**ISCO 3700 Sampler [210C01437]** Bottle #12?		☐	☐	☐
	480	**ISCO Avalanche Sampler [210J01522]** Bottle #1?		☐	☐	☐
	490	**ISCO Avalanche Sampler [210J01522]** Bottle #2?		☐	☐	☐
	500	**ISCO Avalanche Sampler [210J01522]** Bottle #3?		☐	☐	☐
	510	**ISCO Avalanche Sampler [210J01522]** Bottle #4?		☐	☐	☐

Labor Report

21 **Completed:** 5/30/2019 4:44:00 PM

22 **Report:** Jane Admin

23 Jane Admin — Signature / Name; 5/30/2019 — Date; Signature / Name; Date

I confirm the information as recorded is true, accurate and complete.

EPC-CP-TP-2103 R0 Form 1

Inspecting ISCO Stormwater Runoff Samplers & Retrieving Samples	No: EPC-CP-TP-2103	Page 27 of 27
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Attachment 3: Sample Retrieval Flow Diagram

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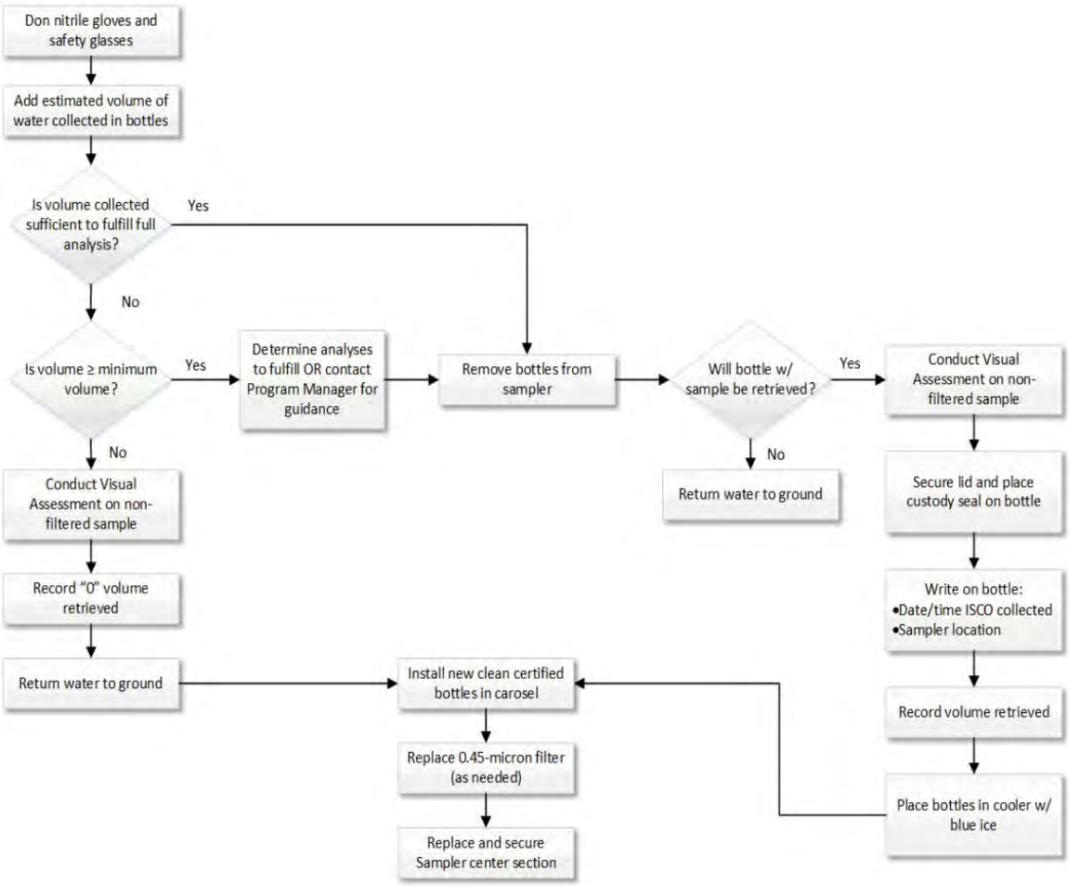


ATTACHMENT 20: ENV-CP-QP-2106, *PROCESSING MSGP STORMWATER SAMPLES*

EPC-CP-QP-2106	Revision: **0**	
Effective Date: 10/18/2019	Next Review Date: 10/18/2022	

Environment, Safety, Health, Quality, Safeguards, and Security Directorate

Environment Protection and Compliance – Compliance Programs Group

Quality Procedure

Processing MSGP Stormwater Samples

Hazard Grading: ☒ Low ☐ Moderate ☐ High/Complex

Usage Level: ☒ Reference ☐ UET ☐ Mixed: UET Sections: _____

Status: ☐ New ☐ Major Revision ☐ Minor Revision

☐ Review w/No Changes ☒ Other: New EPC-CP format and numbering system

Safety Basis: ☒ N/A ☐ USQ ☐ USI Number: _____

Document Author/Subject Matter Expert:

Name:	Organization:	Signature:	Date:
Holly L. Wheeler	EPC-CP	Signature on File	10-17-19

Derivative Classifier: ☒ **Unclassified or** ☐ _____

Name:	Organization:	Signature:	Date:
Steven E. Wolfel	EPC-CP	Signature on File	10-17-19

Approval Signatures:

EPC-CP Reviewer:	Organization:	Signature:	Date:
Terrill W. Lemke	EPC-CP Team Leader	Signature on File	10-17-19
EPC-CP RLM:	Organization:	Signature:	Date:
Taunia Van Valkenburg	EPC-CP Group Leader	Signature on File	10-18-19

REVISION HISTORY

Document Number and Revision *[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]*
ENV-RCRA-QP-048, Rev. 0	07/2011	New document
ENV-CP-QP-048, Rev. 1	09/2013	Annual Review and Revision, new format, process change, and new organization name.
EPC-CP-QP-048, Rev. 2	06/05/2017	Review and Revision, new format, and new organization name, clarified steps, updated attachments.
EPC-CP-QP-048 R3	10/05/2017	Updated Sample Collection Log instructions, added a step describing evidence of flow, and added section for addressing excess stormwater material.
EPC-CP-QP-048 R4	01/31/2019	Sample Collection Log form and associated text updated. Added text for collecting quality control samples.
EPC-CP-QP-2106 R0	10/18/2019	Supersedes EPC-CP-QP-048 R4. New EPC-CP procedure format and numbering system. Minor editorial updates.

Table of Contents

1.0 INTRODUCTION

Triad LLC, the operator for Los Alamos National Laboratory (LANL or the Laboratory), conducts stormwater monitoring activities pursuant to the National Pollutant Discharge Elimination System (NPDES), Multi-Sector General Permit (MSGP). As part of this monitoring, Environmental Protection and Compliance, Compliance Programs (EPC-CP) personnel collect stormwater discharge samples from outfalls at industrial sites and prepare them for analysis.

1.1 Purpose

This procedure describes the process for filtering, preserving and preparing stormwater samples for shipment to an analytical laboratory from locations where EPC-CP conducts stormwater monitoring activities required pursuant to the NPDES MSGP. This procedure may also be used for other Associate Laboratory Directorate for Environment, Safety, Health, Quality, Safeguards, and Security (ALDESHQSS) stormwater monitoring activities as needed.

1.2 Scope

Stormwater samples are collected in the field with either a refrigerated Avalanche® or ISCO 3700 automated sampler, single stage sampler, or by hand. When in-line filtration is not possible, sample filtration, along with chemical preservation (as required) is conducted immediately following sample retrieval in the field or in the EPC-CP Stormwater Laboratory (TA-59-01).

Sample collection, submission, and analysis is conducted using Environmental Protection Agency (EPA) and New Mexico Water Quality Control Commission guidelines. MSGP monitoring samples are collected and analyzed according to test procedures approved under Title 40 of the Code of Federal Regulations Part 136 unless other test procedures have been specified in the MSGP. Quantitation limits associated with these test procedures are sufficiently sensitive to meet MSGP limits.

1.3 Applicability

This procedure applies to EPC-CP technical staff and subcontractor personnel (as applicable) who conduct processing and chemical preservation of stormwater samples either in the EPC-CP Stormwater Laboratory or in the field.

The MSGP Program Lead is the primary person responsible for this procedure. EPC-CP personnel are appointed responsibility for a subset of sampling stations. Other stormwater monitoring programs or projects utilizing this procedure will refer to program or project specific roles and responsibilities.

2.0 PRECAUTIONS AND LIMITATIONS

The hazard level for the activities in this procedure is **LOW.** An Integrated Work Document Part II (2101 Form) will address any site-specific requirements and training for Facility Operations Divisions (FOD) if required by the FOD.

Use only sample containers that are documented to meet or exceed "US EPA Specification and Guidance for Contaminant-Free Sample Container" (Publication 9240.05A, EPA/540/R-93/051, December 1992). Never clean or re-use sample containers. Keep containers in a clean, dry place until a sample is ready for processing and transfer to the appropriate container(s).

3.0 PREREQUISITE ACTIONS

3.1 Planning and Coordination

Refer to the most current revision of the MSGP or program/project specific Sampling and Analysis Plan (SAP) to determine the need for collecting quality control samples. Collect the types and quantities of quality control samples at the locations specified.

Schedule and complete stormwater processing to meet the analytical holding time requirements identified in the MSGP SAP or as requested by the MSGP Program Lead. Other stormwater monitoring programs or projects utilizing this procedure will refer to their program or project specific SAP.

The MSGP Data Manager will generate Water Sample Collection and Processing Log/Field Chain of Custody (SCPL) form(s) at the beginning of the MSGP monitoring season and/or the beginning of each MSGP monitoring quarter. The MSGP Data Manager will generate Chain of Custody/Analysis Request(s) from the Environmental Information Management (EIM) database as stormwater is collected. If the MSGP Data Manager is not available, forms will be obtained from the EPC-CP Sample Management Office (SMO).

3.2 Performance Documents

Personnel performing this procedure will be familiar with the most current versions of the following documents if the equipment or chemicals are utilized.

- Peristaltic Pump User Manual (e.g., GeoTech)
- Material Safety Data Sheet or Safety Data Sheet for preservation chemicals

3.3 Special Tools, Equipment, Parts and Supplies

Ensure the following equipment is available:

- Safety glasses with side shields
- Nitrile gloves
- Lab coat
- Eyewash in Stormwater Lab (or portable eyewash in the field)
- Water SCPL form
- Chain of Custody/Analysis Request
- EPC-CP MSGP SAP most recent revision for the current monitoring year OR project specific monitoring plan

- Sample containers (glass and poly bottles)
- Sample container lids
- Acid and base preservatives
- Clean silicon (e.g., Tygon) tubing
- Portable peristaltic pump (e.g., Geopump or equivalent)
- 0.45 micron (µm) and/or 0.10 µm cartridge filters (where applicable)
- Deionized water (where applicable)
- Paper towels
- Coolers with ice, Blue Ice®, or equivalent
- Ball point pen
- Permanent marker
- Chain-of-custody seals/tape
- Copy of this procedure
- Cell phone (only government cell phones are allowed in secure areas) (See https://int.lanl.gov/policy/documents/P217.pdf for requirements for using portable electronic devices on Laboratory property.

4.0 PROCESSING SAMPLES

In this procedure, sample collection bottles are the bottles in which the sample was collected in the field. Sample containers are containers into which the original sample is transferred (as necessary) during processing and shipped to the analytical laboratory.

***NOTE*:** Prior to performing any of the steps in the following sub-sections, ensure that you are wearing the proper clothing. Don nitrile gloves, safety glasses with side shields, and a lab coat. Confirm that the eyewash station is operational prior to processing samples.

4.1 Preparation for Processing Samples

Sample Retriever

[1] Arrange sample collection bottles on the workbench in order by MSGP sampling location, ensuring to distinguish bottles collected via in-line filtration from non-filtered bottles, where applicable.

CAUTION

Process only one sample set (i.e., samples listed on one SCPL form or samples from one location) at a time to ensure stormwater from different locations is not co-mingled.

[2] Cross-check the Location ID (e.g., MSGP00201) on the sample bottles with the LOCATION ID on the SCPL form (see example in Attachment 1).

[3] Ensure the pre-populated information on the SCPL form is correct. Document any changes [e.g., change FIELD MATRIX code from rain (WT) to snowmelt (WM)].

[4] Write the following information on the SCPL.

[a] Sampler Inspection and Sample Retrieval form (refer to EPC-CP-QP-2103) identification number (e.g., Work Order: MSGP-xxxx);

[b] Date/time the sample was collected in the field (e.g., date/time automated sampler filled sample bottles or a grab sample was taken);

[c] Date/time the sample was retrieved from the field;

[d] "Not Applicable" (N/A) in the LOCATION SYNONYM(S) field unless the information is required by the SAP;

[e] N/A in the PRIORITY box if box is not pre-populated;

[f] Any pertinent information regarding sample collection and/or retrieval in the SAMPLE COMMENTS field (e.g., grab sample collected by hand, recent erosion observed up-gradient of sampler) or N/A;

[g] N/A for FIELD PARAMETER Sample Time (this is documented at the top of the form as COLLECTION TIME);

[h] pH measurement taken at the time the sample was collected in the field (if applicable) or N/A;

[i] Indicate if a visual assessment was performed.

- IF a visual assessment **WAS NOT** performed,
  THEN write N or No in the Visual Inspection space.
- IF a visual assessment **WAS** performed,
  THEN write Y or Yes in the Visual Inspection space and the identification number from the MSGP Visual Assessment form (refer to EPC-CP-QP-2105) (e.g., MSGP-xxxx).

[j] The printed name and signature of the person who retrieved the sample in the COLLECTED BY box and date/time the sample was retrieved from field

[5] IF the person who retrieved the sample is processing,
THEN write N/A in the first RELINQUISHED BY and RECEIVED BY boxes.

[6] IF the person who retrieved the sample is NOT processing,
THEN

[a] He/she will print and sign his/her name and the date/time samples are relinquished to the processor in the RELINQUISHED BY box.

[b] The processor will print and sign his/her name and the date/time samples are received in the first RECEIVED BY box.

Sample Processor

[7] Ensure the following information is correct for the analysis requested on the SCPL.

[a] Sample container volume and type [e.g., 500 milliliter (mL) POLY].

[b] Preservation type (e.g., ICE, HNO_3).

[c] Note any deviation from the planned sample container volume, type, or preservation on the SCPL.

[8] Determine which samples require filtration and chemical preservation as requested on the SCPL.

[a] Mark each container lid with the 3-digit outfall ID, required analysis, filtration requirement, and preservative requirement.

***NOTE 2*:** Requirements are also identified in the most current SAP revision.

[9] For split samples, follow these steps:

[a] Turn the sample collection bottle upside down multiple times to ensure sediment is loose from the bottom of the bottle.

[b] Pour sample into sample containers ensuring the sample remains homogenized throughout the transfer.

[10] Refer to Section 4.2 Filtering Samples, Section 4.3 Preserving Unfiltered and Filtered Samples, and Section 4.4 Quality Control Samples as needed.

[11] Indicate if each sample on the SCL was collected by writing Y for Yes or N for No in the COLLECTED Y/N box.

[12] IF the SPECIAL INSTRUCTIONS box is not pre-populated,
THEN write N/A in the box.

[13] Document any other deviations from the planned sample processing on the SCPL (e.g., turbid sample required extra filtration step, used standard deionized water in lieu of ultrapure water for field blank) under PROCESSING COMMENTS or SAMPLING COMMENTS,

OR write N/A.

[14] IF no further processing is required (e.g., chemical preservation),
THEN apply a chain-of-custody seal/tape around the bottle and lid and sign and date the seal/tape.

[15] The person processing the sample will print and sign his/her name and indicate the date/time samples were processed in the PROCESSED BY box.

[16] Proceed to Section 4.5.

4.2 Filtering Samples

Filter samples if specified on the SCPL or if an in-line filter was not used during sample collection.

[1] Select the appropriate sized cartridge filter (e.g., 0.10µm or 0.45µm).

[2] Set up the filter assembly.

[a] Attach an appropriate amount of silicone tubing to both ends of the cartridge filter.

[b] Place the filter upstream of the peristaltic pump to prevent over-pressurization.

[c] IF the sample contains a significant amount of sediment,
THEN a pre-filter of the same size or larger micron capacity may be used.

[3] For split filtered samples, follow these steps:

[a] Move the intake tube up and down through the sample during filtration.

NOTE 1: A sample collected solely for filtration can be filtered without being homogenized by gently shaking.

[4] Replace the filter if any of the following conditions occur:

- flow diminishes,
- the pump begins to make a grinding sound, or
- the tubing is forced off the filter by backpressure.

[5] Place the lid on the container.

[a] Ensure the lid is securely affixed to the container.

[b] Add a check mark next to the filtered requirement previously marked on the lid to indicate that filtration has been completed.

[c] Clean and dry the exterior of sample container.

[d] Check sample container for leakage and breakage.

[6] Remove and dispose of filter and tubing when filtration of one sample set (location) has been completed.

***NOTE 2*:** A new filter must be used with each new sample set.

[7] Return to Section 4.1, Step 11.

4.3 Preserving Unfiltered and Filtered Samples

Preservation entails the addition of acid or base to a sample. Acids currently used include hydrochloric acid (HCl), nitric acid (HNO_3), and sulfuric acid (H_2SO_4). Bases currently used in preservation include sodium hydroxide (NaOH). Review the appropriate Material Safety Data Sheet or Safety Data Sheet for specific guidelines prior to preserving samples. Specific acids/bases used

depend on the required monitored parameters and are subject to change (e.g., biennial Clean Water Act §303(d)/305(b) Integrated Report updates).

WARNING
Preservatives are strong acids and bases that can cause severe burns. Take extreme care when using these acids and bases.

[1] Review the analysis requested on the SCPL or SAP.

[2] Select the pre-measured preservative type and size that matches the sample container size.

[a] IF you only have one size pre-measured preservative that does not match the sample container size,
THEN you will use more than one. For example, if you have a 1-liter sample container and 500 mL pre-measured preservative vial, you will need to add two preservative vials to the sample container.

***NOTE*:** Never "split" a larger volume pre-measured vial to preserve a smaller volume container (e.g., do not pipette from a 1-liter, pre-measured preservative vial to preserve a 500 mL sample). Error in measurement precision may lead to a risk of violating Department of Transportation shipping requirements.

[3] Add the preservative (acid or base) to the sample.

[a] Securely affix the lid to the container.

[b] Agitate the preserved sample by turning the container upside down two to three times.

[4] Add a check mark next to the preservation type previously marked on the lid to indicate that preservation has been completed.

[a] Clean and dry the exterior of sample container.

[b] Check sample container for leakage and breakage.

[5] Return to Section 4.1, Step 11.

4.4 Quality Control Samples

Refer to the SCPL or the program specific SAP for the types and quantities of quality control samples and the locations where these samples will be collected.

4.4.1 Field Blank Samples

[1] Review the analysis requested on the SCPL or SAP.

[a] Ensure the sample container volume, type, and preservation type is correct for the analysis requested (e.g., 500 mL POLY, HNO_3).

[b] Note any deviation from the planned sample container volume or type on the SCPL.

CAUTION

DO NOT use tap, distilled, or drinking water purchased from a local store. These sources may not meet the water quality standards specified in the New Mexico Administrative Code (Title 20, Chapter 6, Part 4)**.**

[2] Obtain analyte free water (e.g., High Performance Liquid Chromatography grade ultrapure in amber glass) in sealed bottle(s) in sufficient quantity to fulfill the analysis requested.

[3] Select another empty sample container(s) of the same type and volume for the analysis requested.

[4] Mark the bottle and container lids with the 3-digit outfall ID and "Field Blank".

[5] Transport both the field blank bottle(s) and container(s) to the sampling location.

[6] During retrieval of samples, open the field blank bottle(s) and pour the analyte free water into the field blank sample container(s).

[7] Securely affix the lid(s) to the container(s).

[8] Replace the lid on the analyte free water bottle.

[a] IF 500 mL or greater remain in the bottle,
THEN replace lid and mark the bottle with the date it was opened and "For Decon Use Only".

[b] IF less than 500 mL remain in the bottle,
THEN dispose of water in the EPC-CP Stormwater Laboratory sink and dispose of the bottle.

[9] Return the field blank containers with retrieved samples to the EPC-CP Stormwater Laboratory (TA-59-01) for any further required processing.

[10] Return to Section 4.1, Step 11 to complete sample processing.

4.4.2 Field Duplicate Samples

[1] Review the analysis requested on the SCPL or SAP.

[a] Ensure the sample container volume, type, and preservation type is correct for the analysis requested (e.g., 500 mL POLY, HNO_3).

[b] Note any deviation from the planned sample container volume, type, or preservation on the SCPL.

[2] Field duplicate samples must be samples collected from the same location, at the same time, and in the same manner:

- Select two sample collection bottles next to each other in the automated sampler carousel.

OR

- Select one sample collection bottle to split into separate sample containers

[3] For split samples, follow these steps:

[a] Turn the sample collection bottle upside down multiple times to ensure sediment is loose from the bottom of the bottle.

[b] Pour sample into sample containers ensuring the sample remains homogenized throughout the transfer.

[4] Return to Section 4.1, Step 11 to complete sample processing.

4.5 Handling Excess Stormwater

Minimize the amount of stormwater sample brought into the EPC-CP Stormwater Laboratory. Field personnel will attempt to retrieve only the volumes needed to fulfill the requested analyses from the current MSGP SAP or program/project specific SAP.

[1] IF any excess stormwater sample exists after processing has been completed, THEN perform the following steps.

Sample Processor

[a] Ensure the container is labeled with the site of origin, date and time sample was collected, and "Return to Site."

[b] Place the container in the designated storage location in the EPC-CP Stormwater Laboratory.

EPC-CP technical staff

[c] Return the sample to the site of origin as soon as possible.

[d] Discharge at the sampler location.

[2] IF the excess stormwater has been altered (e.g., tap water or preservative added), THEN contact the TA-59-0001 Waste Management Coordinator for further instruction.

4.6 Submit Samples for Shipping to Offsite Analytical Laboratory

Sample Processor

[1] Deliver completed SCPL(s) to the MSGP Data Manager.

MSGP Data Manager

[2] Process the sample information in the EIM system.

[a] Capture any documented deviations from planned conditions (as noted on the SCPLs).

[b] Generate Chain of Custody/Analysis Request (COC) form(s) and sample container labels to reflect the processed samples (see examples in Attachments 2 and 3).

Sample Processor

[3] Ensure the sample containers are securely sealed and wiped dry.

[4] Cross-check to ensure the Sample ID on the SCPL matches the Field Sample ID on the COC.

[5] Compare the information from the SCPL and lid of each container and apply the correct labels to the sample containers.

[6] IF the person who processed the sample is NOT submitting the samples to the SMO, THEN

[a] He/she will print and sign his/her name and the date/time samples are relinquished to the submitter in the second RELINQUISHED BY box.

[b] The submitter will print and sign his/her name and the date/time samples are received in the second RECEIVED BY box.

EPC-CP technical staff

[7] Place the sample(s) in a cooler with sufficient Blue Ice® (or equivalent) to maintain the required preservation temperature (≤4° C).

***NOTE*:** Cushioning material (e.g., bubble wrap) may be used to separate containers to avoid breakage during transport

[8] Place the SCPL(s) and COC(s) in a zip lock type bag, seal, and place in the cooler with samples.

[9] Transport samples to the SMO.

[a] Deliver samples during SMO business hours by 2pm for same day shipping.

[b] Coordinate with the SMO for delivery during other times or for delivery of samples that have limited holding times.

[c] If delivery of samples to the SMO will be delayed, place sample containers with SCPL(s) in the EPC-CP Stormwater Laboratory refrigerator and ensure the refrigerator is locked.

[10] Complete the COC form as follows:

[a] On the Relinquished By line, the person submitting the sample(s) will sign and print his/her name and date/time samples are relinquished to the SMO.

[b] The SMO personnel accepts the sample(s) by signing and printing his/her name and recording the date/time on the Received By line.

[11] Complete the SCPL form as follows:

[a] Ensure all fields are filled out with sample information or N/A. Do not leave blank fields.

[b] In the RELINQUISHED BY box, the person submitting the sample(s) will sign and print his/her name. Sign and print your name on the SCPL in the "Relinquished By" box.

[c] Record the date/time that matches the data and time RELINQUISHED BY on the COC.

[d] Record the COC number (e.g., 2017-xxxx) in the RECEIVED BY box.

[12] Ensure the following steps are taken:

[a] SMO makes a copy of the SCPL(s) to accompany the COC and samples.

[b] Keep the original SCPL(s) for the MSGP program.

[c] Make a copy of the signed Chain of Custody/Analysis Request.

[13] Deliver the copy of the signed COC and original SCPL(s) to the MSGP Data Manager for record keeping.

5.0 TRAINING

All EPC-CP personnel that execute the activities specified in this procedure must meet the minimum qualification and training requirements for their position as identified EPC-CP-PIP-2101, NPDES Multi-Sector General Permit Program. This will include “self-study” (required reading) for this procedure as assigned and documented in accordance with ENV-DO-QP-115, *Personnel Training*. Other participating LANL groups may require training documentation pursuant to local procedures.

Contract personnel that execute the activities specified in this procedure will be qualified and trained as required by the Exhibit D and Exhibit F. In addition, contract personnel will be required to complete “self-study” (required reading) of this procedure.

Personnel performing this procedure will be familiar with the most current versions of the following procedures and operation manuals:

- EPC-CP MSGP SAP for the current monitoring year
- EPC-CP-QP-2103 Inspecting Stormwater Runoff Samplers and Retrieving Samples for the MSGP

6.0 RECORDS

EPC-CP is the Office of Record for this document and must be maintained in accordance with PD1020, *Document Control and Records Management* and ADESH-AP-006, *Records Management*

Plan. Records generated by this document will be submitted to the Records Management designated point of contact or document manager for document management.

Below are records generated as a result of implementing this procedure. Records generated are identified by title and type.

Record Title	QA Record	Non-QA Record
*Water Sample Collection and Processing Log/Field Chain of Custody	☒	☐
*Chain of Custody/Analysis Request	☒	☐
Copy of log book entry(s) (if a log book is used)	☒	☐
Other pertinent field or lab notes (if additional notes are required)	☒	☐

*The original document is part of the data package QA records for the SMO. MSGP retains a copy for tracking purposes only.

7.0 DEFINITIONS AND ACRONYMS

7.1 Definitions

See LANL *Definition of Terms*.

7.2 Acronyms

See LANL Acronym Master List.

COC	Chain of Custody/Analysis Request
EIM	Environmental Information Management
EPA	Environmental Protection Agency
EPC-CP	Environmental Protection and Compliance – Compliance Programs
LANL	Los Alamos National Laboratory
µm	Micron
mL	Milliliter
MSGP	Multi-Sector General Permit
N/A	Not Applicable
NPDES	National Pollutant Discharge Elimination System
SAP	Sample Analysis Plan
SCPL	Water Sample Collection and Processing Log/Field Chain of Custody
SMO	Sample Management Office

8.0 REFERENCES

None.

9.0 ATTACHMENTS

Attachment 1: *Water Sample Collection and Processing Log/Field Chain of Custody Example*
Attachment 2: *Sample Container Labels Example*
Attachment 3: *Chain of Custody/Analysis Request Example*

Attachment 1: Water Sample Collection and Processing Log/Field Chain of Custody Example

(Page 1 of 1)

Los Alamos National Laboratory

WATER SAMPLE COLLECTION AND PROCESSING LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11743 **EVENT NAME:** MSGP 2018

SAMPLE ID: MSGP-18-153015 **WORK ORDER:** MSGP-12345

COLLECTION DATE/TIME: 07/01/18 16:03 **RETRIEVAL DATE/TIME:** 07/03/18 09:25

LOCATION ID: MSGP04301 **SAMPLER TYPE:** APS-R

LOCATION TYPE: WCS **SAMPLE PREP:** UF

LOCATION SYNONYM(S): N/A **FIELD QC TYPE:** REG

FIELD MATRIX: WT **SAMPLE USAGE:** COMP

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS	PROCESSING COMMENTS
N/A	MSGP-TSS	250 ~~500~~ ML POLY	1	ICE	Y	N/A	N/A

SAMPLE COMMENTS: N/A

FIELD PARAMETERS:

Sample Time N/A HH:MM pH 6.2 SU Visual Inspection Y SU

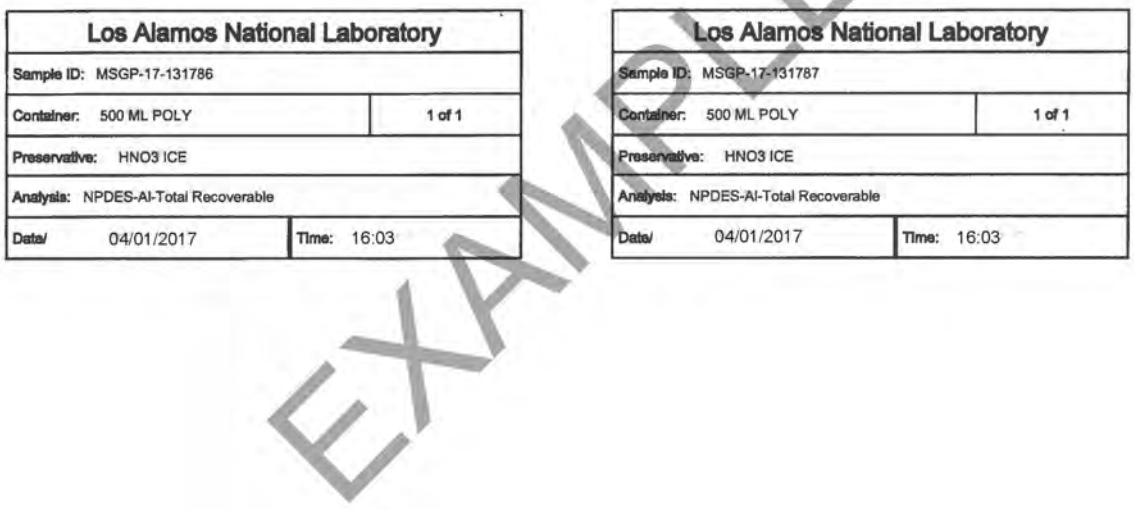
Visual Inspection WO# MSGP-67890

COLLECTED BY (Printed Name) (Signature)	Jane Doe	Date/Time 07/03/18 09:25			
RELINQUISHED BY (Printed Name) (Signature)	Jane Doe	Date/Time 07/03/18 10:05	RECEIVED BY (Printed Name) (Signature)	John Smith	Date/Time 07/03/18 10:05
PROCESSED BY (Printed Name) (Signature)	John Smith	Date/Time 07/03/18 13:00			
RELINQUISHED BY (Printed Name) (Signature)	John Smith	Date/Time 07/04/18 08:35	RECEIVED BY (Printed Name) (Signature)	See COC# 2017-1326	Date/Time
RELINQUISHED BY (Printed Name) (Signature)	N/A	Date/Time	RECEIVED BY (Printed Name) (Signature)	N/A	Date/Time

Report Date: 08/01/2018

Attachment 2: Sample Container Labels Example

(Page 1 of 1)



Los Alamos National Laboratory	
Sample ID: MSGP-17-131786	
Container: 500 ML POLY	1 of 1
Preservative: HNO3 ICE	
Analysis: NPDES-Al-Total Recoverable	
Date/ 04/01/2017	Time: 16:03

Los Alamos National Laboratory	
Sample ID: MSGP-17-131787	
Container: 500 ML POLY	1 of 1
Preservative: HNO3 ICE	
Analysis: NPDES-Al-Total Recoverable	
Date/ 04/01/2017	Time: 16:03

Attachment 3: Chain of Custody/Analysis Request Example

(Page 1 of 1)

LANL SMO
Los Alamos NM

Chain of Custody/Analysis Request

COC/Lab Request #: 2017-1326
Page 1 of 1

Client Contact:

Lab Agreement #:

Site Name: Los Alamos National Laboratory

Project Number:

Analysis Turnaround Time:
24 Hour - ☐ Other - ☐
7 Days - ☐
14 Days - ☐
21 Days - ☐
28 Days - ☒

Rad Screening Info:

Lab Reporting Limit Type: Method Detection Limit

Field Sample ID	Sample Date	Sample Time	Sample Matrix	MSGP-Zn
MSGP-17-131904	Apr 1 2017	16:03	W	1
MSGP-17-132187	Apr 1 2017	16:03	W	1

EXAMPLE

Special Instructions:

4/12/17

Relinquished by: Jane Doe	Print Name: Jane Doe	Date/Time: 4/12/17 15:40	Received by:	Print Name: B Green	Date/Time: 3:10
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:
Relinquished by:	Print Name:	Date/Time:	Received by:	Print Name:	Date/Time:

ATTACHMENT 21: EPC-DO-QP-101, *ENVIRONMENTAL REPORTING REQUIREMENTS FOR RELEASES OR EVENTS*

EPC-DO-QP-101	Revision: **3**	Los Alamos NATIONAL LABORATORY EST. 1943
Effective Date: 08/07/2017	Next Review Date: 08/07/2020	

Environment, Safety, and Health Directorate

Environmental Protection and Compliance Division – Compliance Programs

Quality Procedure

Environmental Reporting Requirements for Releases or Events

Document Owner/Subject Matter Expert:

Name:	Organization:	Signature:	Date:
Brian Iacona	EPC-CP	Signature on File	4-27-17

Derivative Classifier: ☒ **Unclassified or** ☐ **DUSA ENVPRO**

Name:	Organization:	Signature:	Date:
Jacob Meadows	EPC-CP	Signature on File	5-2-17

Approval Signatures:

Subject Matter Expert:	Organization:	Signature:	Date:
Brian Iacona	EPC-CP	Signature on File	4-27-17
Responsible Line Manager:	Organization:	Signature:	Date:
	EPC-CP, Team Leader	Signature on File	7-21-17
Responsible Line Manager:	Organization:	Signature:	Date:
	EPC-CP, Group Leader	Signature on File	8-3-17
Responsible Line Manager	Organization	Signature:	Date:
	EPC-DO, Division Leader	Signature on File	8-7-17

REVISION HISTORY

Document Number and Revision *[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
ENV-DO-QP-101 R2	6/12	Biennial Review/Revision, new template implemented.
EPC-DO-QP-101 R3	08/07/17	Revision and update. This document replaces ENV-DO-QP-101 R2. New document number reflects organizational name change.

Table of Contents

1.0 INTRODUCTION

This Environmental Protection and Compliance Division (EPC-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 *P322-4, Performance Improvement from Abnormal Events*. Environmental reporting requirements regarding releases or other events are included in this procedure.

1.1 Purpose

This procedure describes the actions that must be performed within the first 24 hours of the release. This procedure does **not** cover the response procedures for "continuous releases" under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Emergency Planning and Community Right-to-Know Act (EPCRA) (see definitions) nor the follow-up notifications and reports.

1.2 Applicability

This procedure applies to EPC-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. For notifications to Pueblo Environmental Departments refer to ENV-DO-QP-111, *Reporting Environmental Releases to Pueblo Governments*.

2.0 PRECAUTIONS AND LIMITATIONS

The work described in this procedure includes field work that does not require an Integrated Work Document (IWD) and is rated as having a **LOW hazard** level.

3.0 RESPONSIBILITIES

The following personnel require training before implementing this procedure:

- EPC managers, designated on-call representatives, and SMEs who may be asked to fulfill immediate reporting requirements during release-related exercises or during actual releases

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.

Actions specified within this procedure, unless preceded with "should" or "may", are to be considered mandatory (i.e., "shall", "will", "must").

4.0 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, wastewater spills, potable water discharges, and other unplanned releases at the Laboratory.

On a semi-annual basis, EPC-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 Principal Associate Directorate for Operations (PADOPS), Associate Directorate for Environment, Safety, and Health (ADESH), Associate Directorate for Environmental Management (ADEM), Emergency Operations (SEO-DO), EPC-DO, Environmental Protection and Compliance Division Compliance Programs Group (EPC-CP), and Environmental Protection and Compliance Division Environmental Stewardship Group (EPC-ES). The on-call representative can be reached by pager at 505-664-7722.

4.1 Responsibility of On-Call Representative

The EPC 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 EPC Division management of immediate reporting requirements
- 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 EPC on-call representative is not responsible for the following and EOC will make these determinations:

- determining if the Resource Conservation Recovery Act (RCRA) Contingency Plan must be implemented
- 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 EPC on-call representative may immediately confer with an SME of the EPC 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 EPC-CP and EPC-ES groups is available in the EPC-CP group office. The EPC-DO and SEO-DO may also be contacted to determine the on-call representative for each group.

4.2 Follow-Up Reporting

This procedure describes the initial external notifications (within the first 24 hours) to regulatory agencies. After completion of the steps in this procedure, the EPC group specifically responsible for compliance with the relevant regulations will complete the required notifications and reports, as applicable under the appropriate regulations, according to established procedures.

4.3 Summary of Policy Reporting

The EPC on-call representative and spill response SMEs have the authority and responsibility for deciding when to report an event and for making notifications to regulatory agencies within the applicable regulatory deadlines.

LANL management and Department of Energy Los Alamos Field Office (DOE LAFO) 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. LANL management, with input from EPC SMEs, will determine if an ORPS (Occurrence Reporting Processing System) report or other type of Lessons Learned will be necessary.

NOTE: SEO-DO maintains a current list of on-call LANL managers.

4.4 Using this Procedure

This procedure has seven 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:

- Resource Conservation and Recovery Act (RCRA)
- Toxic Substances Control Act (TSCA)
- Clean Water Act (CWA),New Mexico Water Quality Act (NMWQA), and New Mexico Water Quality Control Commission (NMWQCC) Regulations
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Emergency Planning and Community Right-to-Know Act (EPCRA)
- Clean Air Act
- Endangered Species Act
- Bald and Golden Eagle Protection Act
- Migratory Bird Treaty Act
- New Mexico Wildlife Conservation Act
- National Environmental Policy Act
- National Historic Preservation Act
- Native American Graves Protection and Repatriation Act

- Archaeological Resources Protection Act

Each release needs to be evaluated for all potential reporting requirements. For example, a Reportable Quantity (RQ), defined under CERCLA or EPCRA may not be met, **but the release may be reportable** under RCRA, New Mexico Water Quality Control Commission (NMWQCC), and/or Clean Water Act (CWA) requirements.

NOTE: The 24-hour deadline (immediate in some cases) applies regardless of whether it occurs during business hours, after business hours or on non-business days.

4.5 Determining if a Release is Reportable under RCRA

Follow the flow chart in Attachment 1 to determine if an event is reportable under RCRA regulations.

Under the RCRA permit requirements, the SEO-DO manager determines if the "RCRA Contingency Plan" provisions should be implemented. The EPC on-call representative or an EPC-CP SME performs notifications that may be required.

The SEO-DO Manager will normally attempt to contact the EPC-CP SME for guidance in making this decision. If the EPC-CP SME is successfully contacted, the completion of the remainder of this procedure may be passed on to this individual.

The EPC on-call representative makes the determination that one or more of these conditions occurred through consultation with EPC-CP and appropriate SMEs. 24-hour notification can be made by the EPC on-call representative or by an EPC SME.

The Emergency Operations Center (EOC) manager makes the determination that unstable chemicals, leaking or compromised gas cylinders represent an emergency situation and, typically with EPC-CP, how best to respond. 24-hour notification can be made by the on-call representative or EPC-CP 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 4.10 *Reporting a Release or Event.*

4.6 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 discharge of PCBs is reportable to the Environmental Protection Agency (EPA) under TSCA if 1 pound of PCBs by weight is released [40 Code of Federal Regulations (CFR) 761.125(a)(1)]. Notify the EPA regional office and proceed with the immediate clean up requirements noted in 40 CFR 761.125(a)(1) in the shortest possible time after discovery, but in no case later than 24 hours after discovery. Additionally, reporting requirements are triggered if over 270 gallons of untested mineral oil suspected of containing PCBs has been spilled.

Follow the steps in *Determining if a Release is Reportable under CERCLA, EPCRA, or Other Regulations* to determine if the RQ for PCBs has also been exceeded.

There are six items containing PCBs that are out of service at the Chemistry and Metallurgy Research (CMR) Building. 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 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.

If the spill is ...	**Then...**
equal to or over 1 pound by weight of PCBs (TSCA) or greater than 270 gallons of untested mineral oil suspected of containing PCBs	Report to the National Response Center (1-800-242-8802) immediately (within 15 minutes of discovery). Additionally, contact 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.

4.7 Determining if a Release is Reportable under the NM Water Quality Act or the CWA

20.6.2.1203 New Mexico Administrative Code (NMAC) Reporting

The NM Water Quality Act (NMWQA) does not use Reportable Quantities (as described in the next section). Instead the NM Water Quality Control Commission (NMWQCC) regulations state: *"With respect to any 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 the use of property, notifications (to the New Mexico Environment Department (NMED)) and corrective actions are required."*

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. The EPC on-call representative or SME has the authority and responsibility to make this determination.

Additionally, unplanned releases of potable water or steam condensate require reporting pursuant to 20.6.2.1203 NMAC if the release is greater than 5,000 gallons, reaches a watercourse, or if the release adversely impacts a Solid Waste Management Unit (SWMU) or Area of Concern (AOC) as directed in the LANL Liquid Discharge Reporting Guidance (Decision Tree), dated March 10, 2009. Contact ADEM to confirm the location and potential impacts to SWMUs or AOCs from any releases that may occur.

Groundwater Discharge Permit Reporting

The Laboratory has four current Groundwater Discharge Permits (DPs) that include notification and reporting requirements in the event of an unpermitted discharge. Spills of **any volume** associated with any of the Groundwater DPs require reporting to NMED pursuant to 20.6.2.1203 NMAC.

1. **DP-857: Sanitary Waste Water System (SWWS) Plant, Sanitary Effluent Reclamation Facility (SERF), and Sigma Mesa Evaporation Basins. Permit Condition No. 44.**

   The unauthorized release of untreated and treated sanitary wastewater, reuse wastewater, blended wastewater, and reject wastewater would be subject to reporting under Condition No. 44.

2. **DP-1589: Septic Tank/Disposal Systems. Permit Condition No. 23.**

   The unauthorized release of untreated wastewater, septage, treated wastewater surfacing from failing disposal systems (leach fields), and treated wastewater surfacing from overflowing septic tanks would be subject to reporting under Condition No. 23.

3. **DP-1793: Land Application of Treated Groundwater. Permit Condition No. 17.**

   The unauthorized release of untreated or treated groundwater that does not constitute land application, as defined in EPC-CP-QP-010: Land Application of Groundwater, would be subject to reporting under Condition No. 17.

4. **DP-1835: Injection of Treated Groundwater to Class V Underground Injection Control (UIC) Wells. Permit Condition No. 22.**

   The unauthorized release of treated or untreated groundwater that does not constitute injection into a Class V UIC well, as defined in Discharge Permit DP-1835, would be subject to reporting under Condition No. 22.

Clean Water Act Reporting

Oil discharges (film/sheen/discoloration) to water in stream channels must also be reported to the National Response Center (NRC) immediately (within 15 minutes of discovery) pursuant to 40 CFR §110.6.

National Pollutant Discharge Elimination System (NPDES) Outfall Reporting

The EPC-DO on-call SME must provide notification to the NPDES Outfall Permit Program Lead and/or the EPC-CP Water Quality Team Leader in the event of a leak or unplanned release from an NPDES permitted outfall upon discovery in order to meet applicable reporting requirements.

4.7.1 Reporting Requirement for Petroleum Storage Tanks

As defined in 20.5.7 NMAC, the NMED requires verbal reporting within 24 hours of a petroleum product release from regulated tanks to the NMED Petroleum Storage Tank Bureau (PSTB) when there is:

- any suspected or confirmed release of regulated substances
- evidence of release of regulated substances
- unusual operational conditions (that would cause concern about a release)
- monitoring results that show loss from the system

Regulated tanks include those with a capacity between 1,320 gallons and 55,000 gallons. Regulated substances for Aboveground Storage Tanks includes, but is not limited to petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading and finishing, such as motor fuels (including ethanol-based motor fuels), jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

Notice of any suspected or confirmed release from a storage tank system needs to be completed within 24 hours. Contact the EPC-CP Aboveground Storage Tank (AST) Program Lead and/or the EPC-CP Water Quality Team Leader prior to completing any external notifications. The PSTB can be reached at 476-4397 during business hours and 827-9329 (NMED Emergency Spill Hotline) during non-business hours. A written report describing the spill, release or suspected release and any investigation or follow-up action needs to be submitted to the PSTB within 14 days of the incident.

4.7.2 Additional Reporting Requirements under the NPDES Pesticide General Permit

Adverse incidents require reporting to the EPA under the NPDES Pesticide General Permit (PGP). An adverse incident is defined as an unusual or unexpected incident resulting from pesticide applications that an Operator has observed upon inspection or of which the Operator otherwise becomes aware, 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
- 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 (e.g. vomiting, lethargy).

If an Operator observes or otherwise becomes aware of an adverse incident due to pesticide application, the Operator must notify the EPA Incident Reporting contact within 24 hours of the Operator becoming aware of the adverse incident. EPA Incident Reporting Contacts are listed at https://www.epa.gov/npdes/pesticide-permitting.

If an Operator becomes aware of an adverse incident affecting a federally listed threatened or endangered species or its federally designated critical habitat, which may have resulted from a discharge from the Operator's pesticide application, the Operator must immediately (within 15 minutes of discovery) notify the U. S Fish and Wildlife Service. This notification must be made by phone to the contact listed on the EPA's website (https://www.epa.gov/npdes/pesticide-permitting).

4.8 Determining if a Release is Reportable under CERCLA or EPCRA

Under CERCLA or EPCRA, an RQ is the threshold which requires regulatory notification of a release. An RQ is based on the quantity of chemical released within any 24-hour period. CERCLA RQs of hazardous substances are listed in 40 CFR § 302.4. If an RQ is met or exceeded, an immediate (within 15 minutes of discovery) notification must be made to the NRC (1-800-424-8802) pursuant to 40 CFR §302.6. If a release of an airborne radioactive material exceeds an RQ, the EPA Region 6 Health Physicist (Office-(214) 665-8541; Mobile-(214) 755-1530; Home-(972) 937-1900) must also be verbally notified after the NRC notifications have been completed.

A release is reportable under EPCRA if a release of a hazardous or extremely hazardous substance listed in 40 CFR Part 355 Appendices A and B occurs. The chemicals that have not been assigned RQs by the EPA have been given statutory RQs of one pound by Congress. If an RQ established under EPCRA is met or exceeded, an immediate (within 15 minutes of discovery) notification must be made to the Local Emergency Planning Committee (LEPC) community emergency coordinator and to the State Emergency Response Commission (SERC) (see Attachment 2).

The lists of CERCLA hazardous substances and EPCRA extremely hazardous substances are two separate lists that include a number of common substances. However, not all extremely hazardous substances are listed hazardous substances. In some instances, a release of an extremely hazardous substance may be reportable under EPCRA but not reportable under CERCLA.

Releases that occur within a closed space with no emissions to the ambient environment are exempt from EPCRA and CERCLA reporting requirements.

NOTE: Response procedures for "Continuous Releases" are not covered in this procedure.

4.8.1 Regulatory Classification of the Released Material

The on-call EPC SME will determine the regulatory classification of the substance released with respect to the hazard classifications:

- Extremely Hazardous Substance (EHS) and/or Hazardous Substance (HS)

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 be conservative and report the release following the reporting requirements detailed in Section 4.10 *Reporting a Release or Event*.

After determining the RQ of a released material, the EPC on-call representative or SME will perform the following steps to determine if an RQ has been released.

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>1</td><td>Obtain an estimate of the quantity and type of material released (e.g. 4 pounds of chlorine gas or 150 curies of tritium).</td></tr>
<tr><td>2</td><td>Compare this quantity against the RQs provided in 40 CFR Table 302.4 and 40 CFR §355, Appendices A and B.</td></tr>
<tr><td>3</td><td>If this is an airborne release of radioactive materials, immediate (within 15 minutes of discovery) reporting to the NRC and the EPA Region 6, Regional Health Physicist is required if the RQ has been exceeded. Note that for radioactive materials, the RQ is provided in activity units (curies or becquerels). Also note that some materials have an RQ value for both chemical exposure (Table 302.4) and for radiological exposure (Appendix B to §302.4). In these cases, the RQ applying to the smallest quantity of material will apply.

For all radioactive material releases, a radiological dose assessment must also be performed within 24 hours of the release. This dose assessment should be made by an environmental health physicist in EPC-CP or EPC-ES. The on-call individual should contact an EPC health physicist for this evaluation.

Immediate evaluation – RQ comparison (of a radioactive material release)

If the release… — Then…
Is equal to or greater than the RQ — Proceed to section 4.10 Reporting a Release or Event.
Is less than the RQ — No immediate reporting is required; contact EPC environmental health physicist to complete follow-up dose assessment.</td></tr>
<tr><td>4</td><td>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 4.10 Reporting a Release or Event.
Less than the RQ — Proceed to Step 5</td></tr>
<tr><td>5</td><td>Continue to re-evaluate the release as new data becomes available. Perform Steps 1 through 4 as necessary.</td></tr>
</table>

4.9 Determining Release Impacts to Biological or Cultural Resources

There are 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 and Golden 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 or cultural resources under the preceding federal laws is not specifically defined. However, the EPC on-call SME should utilize the Decision Support Application (DSA) to determine if the release impacted a Biological or Cultural Site. The DSA layer 'Federally Listed Species Habitat' contains Endangered Species habitat boundaries. The DSA 'Cultural Resources-Buffered Sites' layer contains the boundaries of the Cultural Sites (Please note-information contained in these layers is Official Use Only). Notify the respective Biological or Cultural SME within one business day if the release impacted either of these areas. The Biological or Cultural SMEs will handle any additional reporting requirements.

Additionally, 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 EPC on-call representative or SME will notify the Biological SME within one business day of the event. The Biological SME will complete any additional reporting requirements.

4.10 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 must be followed upon determination that a release or event is reportable.

For informational purposes, a Summary of Emergency Release or 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 5.0 *Records*).

Any release to the environment that has been determined to be reportable by the EPC on-call representative or SME shall be reported through the LANL management chain in accordance with PD1200, *Emergency Management* and *P322-4, Performance Improvement from Abnormal Events*.

Los Alamos National Security (LANS) management and DOE shall be notified if a release notification to state or federal regulatory agencies is required. Management approval is not required prior to completing environmental notifications to the regulatory agencies in order to assure that the deadline for reporting is not exceeded.

Perform the following steps immediately after establishing that reporting is required:

Step	Action
1	Compile release information including : • The source, cause, type and quantity of the release • Time and duration of the release • Extent of any protective and corrective actions taken • Name, address, and telephone number of the person to contact for further information • Whether the substance is an HS or EHS • 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 • Environmental media impacted from the release
2	Notify LANL management, DOE, and the respective Facilities Operations Division (FOD). Note: Management approval is not required prior to completing environmental notifications to the regulatory agencies in order to assure that the deadline for reporting is not exceeded.
3	Provide notification to the regulatory agency as required by the applicable regulation(s) detailed in Sections 4.5 - 4.9. Reference Attachment 2 for a summary of the applicable reporting requirements.
4	Notify programmatic SMEs that may be impacted or required to complete follow up reporting.

4.10.1 Steps to Notify LANL Management and DOE

The EPC on-call representative will complete the following steps to provide notification to LANL Management and DOE.

Step	Action
1	Determine that a release to the environment is reportable to state or federal entities as

	required under applicable regulations. **NOTE:** Occurrence Reporting and Procession System (ORPS) reporting is a FOD and Responsible Associate Director (RAD) responsibility and commonly they will seek advisement from EPC SMEs.
2	Provide notification to the EPC-CP Water Quality Team Leader, the EPC-CP Group Leader, the EPC-DO Division Leader, and DOE LAFO program contact of the release and the required external notifications.
3	Complete environmental reporting to state and federal agencies in accordance with all applicable regulations.
4	Notify the appropriate program SME that may be impacted or be required to complete following up release reporting.

After all the above notifications have been made, or when requested, the EPC on-call representative or SME will hand off responsibility for additional actions and follow-up to the affected environmental group. (The group that will be responsible will depend on the type and location of the release and the governing regulations or statutes.)

In order to communicate events at LANL which may impact the public and or the environment, EPC staff may provide a courtesy notification to 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.

5.0 RECORDS

The following records are generated as a result of this procedure and are maintained in accordance with ADESH-AP-006 Records Management Plan and P1020-1, *Laboratory Records Management*:

- 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
- Contingency and / or emergency plan documentation
- 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

6.0 DEFINITIONS AND ACRONYMS

6.1 Definitions

ADESH – Associate Directorate for Environment, Safety, and Health

ADEM – Associate Directorate for Environmental Management

AOC – Area of Concern

AST – Aboveground Storage Tank

CAA – Clean Air Act

CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act

CMR – Chemistry and Metallurgy Research

CFR – Code of Federal Regulations

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.

CWA – Clean Water Act

DOE LAFO – Department of Energy Los Alamos Field Office

DSA – Decision Support Application

Environment – Includes "water, air, land, and the interrelationship which exists among and between water, air, land, and all living things." (40 CFR 355.20)

EOC – Emergency Operations Center

EPA – Environmental Protection Agency

EPC-DO – Environmental Protection and Compliance Division

EPCRA – Emergency Planning and Community Right-to-Know Act

EPC-CP – Environmental Protection and Compliance Division Compliance Programs Group

EPC-ES – Environmental Protection and Compliance Division Environmental Stewardship Group

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

GWDP-Ground Water Discharge Permit

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).

IWD – Integrated Work Document

LANL – Los Alamos National Laboratory

LANS – Los Alamos National Security

LEPC – Local Emergency Planning Committee

NMAC – New Mexico Administrative Code

NMED – New Mexico Environment Department

NMWQA – New Mexico Water Quality Act

NMWQCC – New Mexico Water Quality Control Commission

NPDES – National Pollutant Discharge Elimination System

NRC – National Response Center

ORPS – Occurrence Reporting and Processing System

OSC – On-Scene Commander

PADOPS – Principal Associate Directorate Operations

PCBs – Polychlorinated Biphenyls

PGP – Pesticide General Permit

PST – Petroleum Storage Tank

PSTB – Petroleum Storage Tank Bureau

RAD – Responsible Associate Director

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

SDS – Safety Data Sheet

SERC – State Emergency Response Commission

SERF – Sanitary Effluent Reclamation Facility

SEO-DO –Security and Emergency Operations Division

SME – Subject Matter Expert

SWMU – Solid Waste Management Unit

SWWS - Sanitary Waste Water System

TSCA – Toxic Substances Control Act

UIC – Underground Injection Control

7.0 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 EPC-CP 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. NM0028355

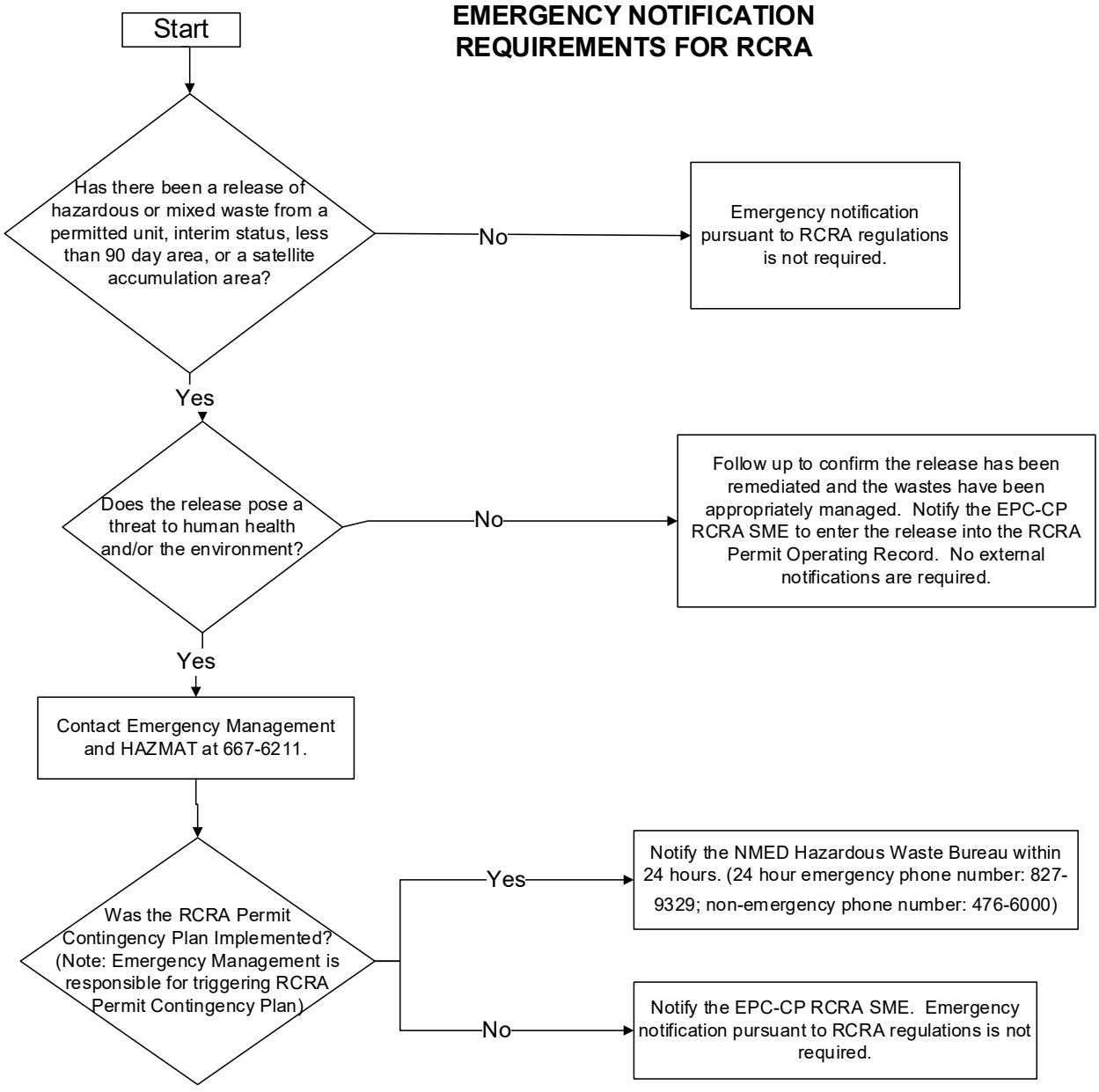
- National Response Center (NRC) Web Site: http://www.nrc.uscg.mil/
- NMWQCC Regulations, 20.6.2 NMAC, dated December 1, 2001
- P407, Water Quality
- P1020-1, Laboratory Records Management
- ADESH-AP-006, Records Management Plan

8.0 ATTACHMENTS OR APPENDICES

Attachment 1: Emergency Notification Requirements for RCRA

Attachment 2: Summary of Emergency Release or Event Reporting Requirements

Attachment 1: Emergency Notification Requirements for 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	Immediate Reporting Requirements	Follow Up Reporting Requirements
Clean Water Act	40 CFR §110.6	Oil discharge (film/sheen/discoloration) to water surface or shoreline, or violation of water quality standards.	Immediately (within 15 minutes of discovery) notify the National Response Center.	Follow-up not required.
Clean Water Act	Part III of NPDES Permit No. NM0028355	Leak or unplanned release from an NPDES permitted outfall.	Notify the NPDES Outfall Permit Program Lead and EPC-CP Water Quality Team Leader upon discovery. The program lead or the EPC-CP Water Quality Team Leader will complete initial reporting requirements as required.	Required follow up reporting will be completed by the NPDES Outfall Permit Program Lead and EPC-CP Water Quality Team Leader.
Clean Water Act (CWA)-NPDES Pesticide General Permit	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.	Notify the EPA Region 6 Pesticide Permitting contact (214)665-7500 within 24 hours.	Submit a 30 Day Adverse Incident Written Report to the EPA Regional Office.
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.	Notify the New Mexico Environment Department 505-827-9329 within 24 hours.	Submit 7 and 15 Day written follow up Corrective Action Reports (Copy EPA Region 6 on the 7 and 15 Day Reports).

STATUTE	REGULATIONS	INCIDENT	Immediate Reporting Requirements	Follow Up Reporting Requirements
New Mexico Water Quality Control Commission Regulations (NMWQCC Regulations)	20.6.2.3104 NMAC	Unplanned release of any volume from an activity or facility covered under an active Groundwater DP: DP-857: SWWS Plant, SERF, and Sigma Mesa Evaporation Basins DP-1589: Septic Tank/Disposal Systems DP-1793: Land Application of Treated Groundwater DP-1835: Injection of Treated Groundwater to Class V UIC Wells	Notify the New Mexico Environment Department 505-827-9329 within 24 hours.	Submit 7 and 15 Day written follow up Corrective Action Reports (Copy EPA Region 6 on the 7 and 15 Day Reports)
New Mexico Environmental Improvement Board Regulation	20.5.7 NMAC	A release of a petroleum product from regulated aboveground storage tank.	Contact the EPC-CP AST Program Lead and/or the EPC-CP Water Quality Team Leader prior to completing any external notifications. If required, the Petroleum Storage Tank Bureau (476-4397) or NMED Emergency Spill Hotline (827-9329) must be contacted within 24 hours.	A written report describing the spill, release or suspected release and any investigation or follow-up action needs to be submitted to the PSTB within 14 days of the incident.
Comprehensive Environmental, Response, Compensation, and Liability Act (CERCLA)	40 CFR §302.6(a)	Hazardous substance (listed in 40 CFR Table 302.4) release (Equal to or greater than an RQ).	Immediately (within 15 minutes of discovery) notify the National Response Center 1-800-424-8802.	Follow-up not required.
Emergency Planning and Community Right- to-Know Act (EPCRA)	40 CFR§ 355.40	Release of an extremely hazardous substance (listed in 40 CFR Part 355 Appendices A and B) or CERCLA hazardous substance (listed in 40 CFR Table 302.4) equal to or greater than RQ.	Immediately (within 15 minutes of discovery) notify the LEPC (505-662-8283) the SERC (505-476-9635). Immediately notify the 911 operator for a release that occurs during transportation or from storage incident to transportation.	A written follow-up emergency notice must be submitted to the LEPC and SERC as soon as practicable after the release.

STATUTE	REGULATIONS	INCIDENT	Immediate Reporting Requirements	Follow Up Reporting Requirements
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, &.61	Release of hazardous or mixed waste from a permitted unit, interim status, less than 90 day area or a satellite accumulation area which the RCRA Permit Contingency Plan was triggered.	Notify NMED Hazardous Waste Bureau within 24 hours (24 hour emergency phone number: 827-9329; Non-emergency phone number: 476-6000) See Attachment 1 for additional details.	Submit written report to NMED HWB within 5 days.
Clean Air Act/ Radionuclide NESHAP	40 CFR 61, Subpart H	Airborne release of radioactive material in excess of an RQ.	Notify the EPA Region 6 Health Physicist (Office- (214) 665-8541; Mobile- (214) 755-1530; Home – (972) 937-1900) immediately after providing notification to the NRC.	Follow-up not required.
Toxic Substance Control Act (TSCA)	40 CFR 761.120, 761.125	Over 1 pound by weight of PCBs (TSCA) or greater than 270 gallons of untested mineral oil suspected of containing PCBs.	Contact the National Response Center (1-800-242-8802) and the EPA Region 6 Office of Prevention, Pesticides, and Toxic Substances Branch (1-866-372-7745) as soon as possible after discovery, but no later than 24 hours after discovery.	Within 24 hours. Follow-up: as required by agency.

ATTACHMENT 22: EPC-CP-QP-1007, *SPILL INVESTIGATIONS*

EPC-CP-QP-1007	Revision: **0**	Los Alamos NATIONAL LABORATORY EST. 1943
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Environment, Safety, Health, Quality, Safeguards, and Security Directorate

Environment Protection and Compliance – Compliance Programs Group

Quality Procedure

Spill Investigations

Hazard Grading: ☒ Low ☐ Moderate ☐ High/Complex

Usage Level: ☒ Reference ☐ UET ☐ Mixed: UET Sections: _____

Status: ☐ New ☒ Major Revision ☐ Minor Revision

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REVISION HISTORY

Document Number and Revision *[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.
10	09/30/15	Biennial review and revision, implemented new procedure format. Controlled the updated LANL ENV-CP Unplanned Release Report.
EPC-CP-QP-1007, Rev. 0	06/03/2020	Format document into new template and update content. This document was formerly ENV-CP-QP-007 R10.

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1.0 INTRODUCTION

All spills and unplanned releases that occur at Los Alamos National Laboratory (LANL) must be evaluated, remediated, and documented to ensure corrective actions are completed and reporting requirements are fulfilled. The investigation of spills and coordination of corrective actions are delegated to the Environmental Protection and Compliance Division's Compliance Programs Group (EPC-CP).

1.1 Purpose

This EPC-CP procedure describes the steps for performing spill investigations throughout LANL.

1.2 Scope

The scope of this procedure is limited to the performance of spill and unplanned release response by EPC-CP personnel and/or authorized subcontractors. Activities include frequent and unscheduled site visits to any area of the Laboratory upon discovery of a spill or unplanned release as support staff for the on-scene Incident Response Commander, deployed environmental staff, or Facility Operations Directorate (FOD) designated facility representative. Support activities include evaluation and documentation of the spill/unplanned release; guidance regarding remediation; and reporting to regulatory agencies.

1.3 Applicability

This procedure applies to all EPC-CP personnel and after hours on-call personnel responsible for conducting spill investigations.

1.4 Authority

The EPC-CP Group Leader is the issuing authority for this document.

2.0 PRECAUTIONS AND LIMITATIONS

A Hazard Analysis was performed for the tasks associated with this procedure. The hazard rating for the activities described in this procedure is **LOW** and does not require an Integrated Work Document.

2.1 Precautions

Precautions apply to abnormal conditions or hazards to personnel or equipment that can be encountered while performing this procedure. The following precautions shall be taken when performing work using this quality technical procedure:

- Personnel shall wear appropriate clothing (e.g., boots, long pants, gloves, etc.) to perform spill investigations in the field. This may also include safety glasses, a hardhat, a safety vest, and/or safety shoes/boots as required by the location of the tank, equipment, and area to be inspected.

- Work may be paused or discontinued due to conditions that make a location dangerous for worker safety or prevent personnel from safety accessing a site (i.e., flash floods, lightning, wildfires, hail, icy roads, deep snow, extreme temperatures, or hazardous LANL Operations such as firing shots, burns, or security).

2.2 Limitations

Limitations are defined boundaries (i.e., training, hold points) that are NOT to be exceeded while preforming the activities defined in this procedure. The following limitations are applicable to performing work using this technical procedure:

- Perform field activities in accordance with EPC-DO-QP-100, General Field Safety, and/or be escorted by Emergency Management Division – Emergency Operations Group (EMD-EO) or site personnel at all times.
- Spills or unplanned releases that occur on Department of Energy property due to activities performed by an organization not associated with Triad National Security, LLC (e.g., Los Alamos County, Newport News Nuclear BWXT Los Alamos (N3B), etc.,) are the responsibility of that organization. The respective organization is responsible for site remediation, completion of corrective actions, and fulfillment any external reporting requirements.
- Some spills or unplanned releases have 15-minute and 24-hour notification requirements. Personnel using this procedure must be familiar with the reporting requirements of EPC-CP-QP-0903, Environmental Reporting Requirements for Releases.

3.0 PREREQUISITE ACTIONS

3.1 Planning and Coordination

The response to spills and/or unplanned releases requires frequent and unscheduled site visits to any area of the Laboratory. Certain facilities and Laboratory locations require additional training and have specific access requirements that must be followed. Specific activities may include one or more of the following:

- Site-Specific Training (e.g., burn grounds).
- Coordination with Access Control and/or Security for escort, keys, safety (e.g., explosives areas, burn grounds, between security fences).
- Security Clearance (i.e., TA-3-66, TA-55, TA-16).

Site access for spill/unplanned release response will require that the Spill Investigator maintain multiple site-specific training requirements. It will also require that the Spill Investigator coordinate with the Emergency Operations Center (EOC), designated FOD representative, and/or Deployed Environmental Professional (DEP).

3.2 Performance Documents

The following documents are required to perform this procedure:

- EPC-CP-QP-1007 Form 1, Unplanned Release Report.
- EPC-CP-QP-1007 Form 2, 7/15 Day Release Report.
- EPC-CP-QP-0903, Environmental Reporting Requirements for Releases.

3.3 Special Tools, Equipment, Parts, and Supplies

Ensure the following are available for spill investigations and field visits:

- Personal protective equipment (PPE) as required by each specific site location (e.g., hardhat, safety vest, safety glasses, safety shoes, etc.)
- Cell phone (only government cell phones are allowed in secure areas.) See https://int.lanl.gov/policy/documents/P217.pdf for requirements for using portable electronic devices on Laboratory property.
- EPC-CP Spills Pager – ***Note:** Spills Pager can be configured to forward notifications to a government cell phone and email address.
- External dosimeter (as required by site or facility).
- Field Logbook (maintained to record pertinent information about the spill, i.e., time and date of release, location and source of 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, time, date and description of notifications, etc.).
- Physical or electronic maps (e.g., utility line locations, Solid Waste Management Unit (SWMU) / Area of Concern (AOC) boundaries, land ownership boundaries).

4.0 PERFORMING SPILL INVESTIGATIONS

4.1 Notification of a Spill or Unplanned Release

The EPC-CP personnel that conduct spill investigations ensure the immediate mitigation of spills and timely notification to appropriate regulatory organizations in the event of a spill or unplanned discharge that has or may adversely affect the environment. Spills/unplanned releases are typically reported by a designated FOD representative (i.e., operations, maintenance) or DEP. If the spill/unplanned release is an emergency (i.e., unknown chemical, toxic chemical, flammable chemical, large volume), it will be reported to the EOC at 667-2400 and the EOC will contact the spill investigator using the EPC Spill pager. If the spill/unplanned release is not an emergency, (potable water, small volume, non-toxic), it will be reported via the EPC Spill pager (664-7722) or by phone call from the DEP or other designated FOD representative (i.e., operations, maintenance, security, health and safety. The EPC-CP Spill Program maintains an on-call schedule for after-hours support

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for incidents and unplanned releases. This listing is updated every three months with contact information for trained EPC-CP personnel (see Attachment 1). This schedule is submitted electronically to update the Primary On-Call List available through the Laboratory's EMD-EO Organizations.

Spill Investigator/On Call

[1] Receive notification of a spill or unplanned release from one of the following:

- Spill Pager (664-7722) or forwarded cell phone.
- Emergency Operations Center (667-2400).
- Phone call from the DEP or other designated FOD representative (i.e., operations, maintenance, security, health and safety).

[2] Document the following information, at a minimum, in the Spill Logbook:

- Time, Date, and Location of the spill/unplanned release
- Owner of Spill and Site Contact
- Material Spilled
- Approximate Volume of the Spill/Unplanned Release
- Source of the Spill

[3] Request that the EOC identify a safe route to the site/location of the spill or unplanned release.

CAUTION

Spills or unplanned releases that occur on Department of Energy property from an organization not associated with Triad National Security, LLC (e.g., Los Alamos County, N3B etc.) are the responsibility of that organization. The respective organization is responsible for site remediation, corrective actions, and external reporting requirements.

[4] If the owner of the spill is not associated with Triad National Security, LLC, refer the caller to one of the following, as appropriate:

- Los Alamos County (LAC) Department of Public Utilities at 662-8333 for releases discovered during normal work hours from LAC owned equipment or infrastructure.
- After Hours LAC – Call Police Dispatch at 662-8222 for releases outside of normal work hours from LAC owned equipment or infrastructure.
- N3B Operations Center at 551-2954 for releases from N3B owned equipment or infrastructure.

[5] If the owner of the spill is associated with Triad National Security, LLC, prepare for a site visit as follows:

[a] Based upon location of the spill/unplanned release, determine what access requirements are applicable (i.e., Q/L Clearance, Site Specific Training) (see Section 3.1).

[b] Based upon the location and material spilled, determine the appropriate PPE for the site visit (e.g., boots, safety glasses, long pants/shirt, hardhat, safety vest).

[6] If the spill is de Minimis (low volume); of a known material (potable water, sanitary waste; and personnel have the appropriate knowledge/training, instruct the following:

[a] The delegated FOD representative, DEP and/or Waste Management Coordinator (WMC) may remediate the spill without the Spill Investigator being present.

[b] The designated FOD representative, DEP, and/or WMC must complete an Unplanned Release Report (Attachment 2) and submit a copy of the report to the Spill Investigator for recordkeeping.

4.2 Emergency Spill/Unplanned Release - Responding with EMD-EO

The Spill Investigator will respond to emergency spills/unplanned releases when notified. Emergency spills/unplanned releases typically include unknown materials leaking from bins, drums, and containers, hazardous materials (i.e., acid, caustic, fuel), or large volumes of petroleum products (i.e., leaking tanks, tanker truck accidents). Emergency spills/unplanned releases are managed by the EOC. The following provides the steps a Spill Investigator will follow when responding to support the EOC for an emergency spill/unplanned release.

Spill Investigator/On Call Spill Responder

[1] Travel to the location of the spill or unplanned release.

[2] Report to designated Incident Response Coordinator and receive site-specific safety and security briefing.

[3] Assess and evaluate nature and extent of the release.

[4] Provide support and guidance to EMD-DO, Hazmat, and Facility personnel on release mitigation measures and requirements. Examples of the types of support and guidance are:

[a] Provide the final inspection of the site to ensure that corrective actions were adequate and are complete.

[b] Recommend corrective actions.

[c] Inspect the site to ensure that the extent of the spill/unplanned release is adequately defined.

[d] Recommend how to stabilize the site for further remediation (i.e., secure the site from storm water).

[e] Identify watercourse boundaries near the spill/unplanned release.

[f] Determine if samples need to be collected.

[g] Recommend sample types and analysis.

[h] Recommend sample locations and the number of samples to determine extent of condition.

[5] If sample collection is required, have the DEP/WMC contact the waste management organization and complete a Request for Analysis (RFA), http://int.lanl.gov/environment/waste/sampling.shtml, to schedule sampling. Specify the analytical suite and turn-around time needed for the sample in the RFA.

[6] Document the following information regarding the spill or unplanned release in the Logbook:

- Timeline of spill/unplanned release response as it occurs.
- Nature and extent of the spill/unplanned release (i.e., inside a building, on asphalt, nearest watercourse/drainage area, proximity to SWMU/AOC and/or outfalls).
- Steps taken to contain the spill.
- Samples collected, if any. Include number, type, location, and analysis.
- Spill and control equipment used to remediate the spill.
- Corrective actions completed and the amount of waste material.

4.2 Non-Emergency Spill or Unplanned Release

The Spill Investigator will respond to non-emergency spills/unplanned releases when notified. Non-emergency spills/unplanned releases typically include potable water leaks; sanitary wastewater leaks, spills, overflows; and small volumes of known chemicals (e.g., hydraulic fluid leaks, vehicle oil leaks). Non-Emergency Spills/Unplanned Releases are typically handled by a designated FOD representative (i.e., operations, maintenance), DEP, or WMC assigned to the area. The following provides the steps a Spill Investigator will follow when responding a non-emergency spill/unplanned release.

Spill Investigator/On Call

[1] Coordinate with the FOD designee and/or waste management coordinator to visit the location of the spill/unplanned release.

[2] Travel to the location of the spill/unplanned release.

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CAUTION

The Spill Investigator may respond to the spill or unplanned release and determine whether the containment and remediation is beyond the capability of the designated FOD representative, DEP, and/or WMC to respond. The EOC should be contacted if additional technical expertise or materials are needed to remediate the release.

[3] Assess and evaluate the nature and extent of the release as follows:

- [a] If the spill/release is a small volume or known material (e.g., sanitary waste, potable water, small hydraulic leak), proceed to step 4.
- [b] If the spill/release is an unknown (e.g., leaking fluid from a metal recycling bin, drum, battery, or other container), stop work and notify the EOC at 667-2400.
- [c] If the spill/release is a hazardous material or large volume of petroleum product (i.e., battery acid, chemical tank, fuel, hydraulic fluid, oil), stop work and notify the EOC at 667-2400.
- [d] If the spill/release appears to be beyond the capability of the designated FOD representative, DEP, and/or WMC to contain and/or remediate, the Spill Investigator shall stop work and notify the EOC at 667-2400 to obtain the appropriate resources.

[4] Provide guidance to the FOD designee and/or waste management coordinator regarding the containment and/or cleanup of the release. Examples of the types of guidance provided include the following:

- [a] Provide the final inspection of the site to ensure that corrective actions were adequate and are complete.
- [b] Recommend corrective actions.
- [c] Inspect the site to ensure that the extent of the spill/unplanned release is adequately defined.
- [d] Recommend how to stabilize the site for further remediation (i.e., secure the site from storm water).
- [e] Identify watercourse boundaries near the spill/unplanned release.
- [f] Determine if samples need to be collected.
- [g] Recommend sample types and analysis.
- [h] Recommend sample locations and the number of samples to determine extent of condition.

[5] If sample collection is required, have the DEP/WMC contact WM-SVS and complete a RFA, http://int.lanl.gov/environment/waste/sampling.shtml, to schedule sampling. Specify the analytical suite and turn-around time needed for the sample in the RFA.

[6] Document the following information regarding the spill or unplanned release in the Logbook:

- Timeline of spill/unplanned release response as it occurs.
- Nature and extent of the spill/unplanned release (i.e., inside a building, on asphalt, nearest watercourse/drainage area, proximity to SWMU/AOC and/or outfalls).
- Steps taken to contain the spill.
- Samples collected, if any. Include number, type, location, and analysis.
- Spill and control equipment used to remediate the spill.
- Corrective actions completed and the amount of waste material.

[7] Coordinate and document all required follow up corrective actions with the FOD designees, DEP, and/or WMC.

[8] Determine the applicable internal and external reporting requirements as outlined in Section 4.3.

4.3 Reporting Spills and/or Unplanned Releases

This section describes how to determine whether an unplanned release, spill, or other event needs to be reported under environmental regulations and how to fulfill all immediate reporting requirements (within the first 24-hours).

4.3.1 Immediate Notification

Spill Investigator/On Call Spill Responder

[1] Identify which of the following internal stakeholders that should receive a report of the spill/unplanned release:

- EPC-CP Group and Division Management
- Compliance Subject Matter Experts (SME). This includes Resource Conservation and Recovery Act, National Pollution Discharge Elimination System, Storm water, Groundwater, and/or Waste Management compliance personnel that potentially have permit specific reporting requirements.
- FOD where the spill/unplanned release occurred.
- Designated FOD Representative (i.e., DEP, Operations, and Maintenance).

CAUTION
Spills/unplanned releases may have EXTERNAL reporting requirements that must be completed within 15 minutes or 24-hours of discovery based upon EPC-CP-QP-0903, Environmental Reporting Requirements for Releases.

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[2] Identify the verbal and written EXTERNAL reporting requirements in accordance with EPC-CP-QP-0903, Environmental Reporting Requirements for Releases.

4.3.2 Non-Reportable Spills/Unplanned Releases

Spill Investigator/On Call Spill Responder

[1] Notify the internal stakeholders (i.e., EPC-CP, SME, FOD, and designated FOD Representative) by phone and/or email (Attachment 1). Include the following pertinent facts as recorded in the logbook:

- Date, Time, Location of the release.
- Quantity and type of material.
- Status of corrective actions.

[2] Document the spill/unplanned release in the spills database.

[3] Document spills/unplanned releases that are NOT reportable to an external regulatory agency on EPC-CP-QP-1007-Form 1, Unplanned Release Report (Attachment 2).

[a] If the Form 1 is completed by a DEP or other designated FOD representative, request a copy of the signed form.

[b] Attach completed EPC-CP-QP-1007-Form 1 to the spill database record.

[4] Submit copies of the accumulated EPC-CP-QP-1007-Form 1's, (annually), to records in accordance with ADESH-AP-006, Records Management.

4.3.3 Reportable Spills/Unplanned Releases

Spill Investigator/On Call Spill Responder

[1] Notify the internal stakeholders (i.e., EPC-CP, SME, FOD, and designated FOD Representative) by phone and/or email (Attachment 1). Include the following pertinent facts as recorded in the logbook:

[a] Date, Time, Location of the release.

[b] Quantity and type of material.

[c] Status of corrective actions.

[2] Notify National Nuclear Safety Administration (NNSA)/Los Alamos Site Office (LASO).

[3] Perform the required EXTERNAL verbal notifications to the appropriate regulatory agencies (i.e., New Mexico Environment Department [NMED], Environmental Protection Agency [EPA]) in accordance with EPC-CP-QP-0903, Environmental Reporting Requirements for Releases.

[4] Document spills/unplanned release on EPC-CP-QP-1007-Form 2, *7/15 Day Release Report* (Attachment 3).

[a] Ensure that the EPC-CP-QP-1007-Form 2 is reviewed and assigned an LA-UR document release number.

[b] Attach the final EPC-CP-QP-1007-Form 2 to the spill database record.

[c] Submit the final EPC-CP-QP-1007-Form 2 as an e-mail attachment to the appropriate regulatory agency.

[d] Submit a copy of the EPC-CP-QP-1007-Form 2 to the internal stakeholders and NNSA/LASO.

[5] Document the spill/unplanned release in the spills database.

[6] Attach completed EPC-CP-QP-1007-Form 2 to the spill data base record.

[7] Electronically file a copy of the EPC-CP-QP-1007-Form 2 in Spills folder located at ENV(\\dcstorage.lanl.gov):\CP\WQ\WQCC COMP PROG.

[8] Submit copies of the accumulated EPC-CP-QP-1007-Form 2's, (annually), to records in accordance with ADESH-AP-006, Records Management.

5.0 TRAINING

All EPC-CP personnel that execute the activities specified in this procedure must meet the minimum qualification and training requirements for their position as identified in EPC-CP-PIP-1001, New Mexico Water Quality Control Commission (WQCC) Program Implementation Plan (PIP). This will include "self-study" (required reading) for this procedure as assigned and documented in accordance with ADESH-TPP-301, ADESH Training Program Plan (TPP).

6.0 RECORDS

EPC-CP is the Office of Record for this document and must be maintained in accordance with PD1020, *Document Control and Records Management* and ADESH-AP-006, *Records Management Plan*. Records generated by this document will be submitted to the Records Management designated point of contact or document manager for document management. The following records are generated by this procedure.

Record Title	QA Record	Non-QA Record
EPC-CP-QP-1007 Form 1, *EPC-CP Unplanned Release Report*	☒	☐
EPC-CP-QP-1007 Form 2, *EPC-CP 7/15 Day Release Report*	☒	☐
Correspondence (i.e., E-mail Notifications to LANL Management, DOE, and other EPC-CP permit subject matter experts)	☐	☒

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Correspondence - E-mail Submittals of 7/15 Day Release Reports to NMED	☒	☐
Logbook	☒	☐

7.0 DEFINITIONS AND ACRONYMS

7.1 Definitions

See LANL *Definition of Terms*.

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.

7.2 Acronyms

See LANL Acronym Master List.

AOC	Area of Concern
DEP	Deployed Environmental Professional
EMD-EO	Emergency Management Division -Emergency Operations Group
EOC	Emergency Operations Center
EPC-CP	Environmental Protection and Compliance Group
FOD	Facility Operations Directorate
LAC	Los Alamos County
LANL or the Laboratory	Los Alamos National Laboratory
LASO	Los Alamos Site Office (LASO).
N3B	Newport News Nuclear BWXT Los Alamos
NMED	New Mexico Environment Department
NNSA	National Nuclear Safety Administration
PIP	Program Implementation Plan
PPE	Personal Protective Equipment
SWMU	Solid Waste Management Unit
TPP	Training Program Plan
WMC	Waste Management Coordinator
WQCC	Water Quality Control Commission
SME	Subject Matter Expert

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8.0 REFERENCES

ADESH-AP-006, Records Management Plan

ADESH-TPP-301, ADESH Training Program Plan (TPP)

EPC-CP-PIP-1001, New Mexico Water Quality Control Commission (WQCC) Program Implementation Plan

EPC-CP-QP-0903, Environmental Reporting Requirements for Releases

EPC-DO-QP-100, General Field Safety

P217, Controlled Portable Electronic Devices

9.0 ATTACHMENTS

Attachment 1: Release Notification Phone List

Attachment 2: EPC-CP-QP-1007-Form 1, *Unplanned Release Report*

Attachment 3: EPC-CP-QP-1007-Form 2, *7/15 Day Release Report*

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Attachment 1: Release Notification Phone List

Los Alamos National Laboratory

(1)	Emergency Operations Support Center	(505) 667-2400
(2)	EPC-ES Group Office	(505) 665-8855
(3)	EPC-CP Group Office	(505) 667-0666
(4)	EPC-DO	(505) 667-2211
(5)	EPC-CP Spills Pager	(505) 664-7722

New Mexico Environment Department

(1)	NMED Emergency Hotline (24 hours a day)	(505) 827-9329
(2)	NMED Non-Emergency Hotline (Voicemail; 24 hours a day)	1 (866) 428-6535
(3)	NMED Surface Water Quality Bureau	(505) 827-0187
	Jennifer Foote	(505) 827-0596
(4)	NMED Ground Water Quality Bureau	(505) 827-2900
	Gerald (Jake) Knutson	(505) 827-2996
	Steve Pullen	(505) 827-2962
(5)	NMED Hazardous Waste Bureau	(505) 476-6000
	Stephen Connolly	(505) 476-6025

U.S Environmental Protection Agency

(1)	US EPA Region 6 Spill Reporting (During business hours)	1 (800) 887-6063
	Emergencies- Contact the NRC	1 (800) 424-8802
(2)	Nancy Williams	1 (214) 665-7179

Los Alamos Fire Department (505) 662-8301

U.S. Department of Energy

(1)	Karen Armijo	(505) 665-7314

Newport News Nuclear BWXT Los Alamos (N3B)

(1)	N3B Operations Center	(505) 551-2954

New Mexico State Police

New Mexico State Police (505) 827-9604

EPC-CP On-Call Environmental Representative for Release Assessment and Notifications to External Agencies

(1) Terrill Lemke	(505) 665-2397 (Office) (505) 699-0725 (Cell)
(2) Steve Pearson	(505) 667-3005 (Office) (505) 699-3684 (Cell)
(3) Mike Saladen	(505) 665-6085 (Office) (505) 699-1284 (Cell)
(4) Tim Zimmerly	(505) 664-0105 (Office) (505) 699-7621 (Cell)

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Attachment 2: Unplanned Release Report, EPC-CP-QP-1007-Form 1

Los Alamos National Laboratory
Environmental Compliance Program (EPC-CP)
Unplanned Release Report

Form Completed By:		**Telephone:**	**Group:**
Spill Owner Details (Specify):	☐ TRIAD, LLC	☐ Subcontractor:_____	☐ Other:_____
Date of Spill/Date Spill Discovered:			
Location:			
Material Spilled:	☐ Hydraulic Fluid ☐ Potable Water ☐ Diesel	☐ Anti-freeze/coolant ☐ Steam Condensate ☐ Lubricants/Oils	☐ Refrigerant Oil ☐ Gasoline ☐ Other: _____
Volume Spilled:		**Waste Volume Generated:**	
Source of Spill: Vehicle ID: Equipment ID:		☐ Potable Water Line ☐ Fire Suppression System ☐ Fuel Tank	☐ Radiator ☐ Condensate Line ☐ Other:_____
Describe the spill response in chronological order. Include response personnel, steps taken to contain the spill, and steps/spill control equipment used to clean it up. Please indicate if corrective actions have been completed and describe actions taken to prevent spill recurrence: **Date Corrective Actions Completed:**			
Did the spill enter or impact any of the following? (Check as many as apply) ☐ RCRA Treatment Storage Disposal Facility ☐ RCRA Satellite Accumulation Area ☐ RCRA <90 Day Storage Area ☐ NPDES MSGP Facility		☐ Floor Drain, if so please indicate affected facility _____ ☐ Watercourse/drainage area, if so please indicate _____ ☐ Solid Waste Management Unit/Area of Concern, if so please indicate _____ ☐ None	
Did the spill occur inside or outside a building?	☐ Inside ☐ Outside		
Did the spill occur on: (Check as many as apply)	☐ Concrete ☐ Carpeted Floor ☐ Tile ☐ Wooden Floor/Deck	☐ Asphalt ☐ Graveled/Rocky Area ☐ Soil/Vegetated Area ☐ Other: _____	
Samples Collected: ☐ None ☐ Water	☐ Soil ☐ Air ☐ Other: _____	If samples were collected, indicate analytical suite:	
Certification			
I certify that I am knowledgeable about the information on this form. The information, to my knowledge, is true, accurate, and complete.			
Name of Certifying Official:		**Organization:**	**Date:**
Certification:			
Completed by EPC-CP Personnel **Date Received:**	**Severity Index:**	**Causal Analysis:**	☐ Non-Reportable ☐ Reportable
EPC-CP-QP-1007 Form 1	Return Completed Form to EPC-CP (spearson@lanl.gov)		11/2019

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Attachment 3: 7/15 Day Release Report, EPC-CP-QP-1007-Form 2

RELEASE / DISCHARGE NOTIFICATION

LOS ALAMOS NATIONAL LABORATORY LA-UR- _____

Permit Number: NM0028355

Calendar Year 2020

NPDES or Operational Spill/Release ☑
ER Spill/Release ☐
Other Spill/Release ☐
Indicate with "X" in appropriate box.

Release ID Number: _____

Responsible Facility/User Group: _____

Contact Person: _____ Pager #: _____

Phone #: _____ Cell Phone #: _____

Release/Discharge Location:

TA: _____

Building: _____

If the release/discharge is associated with a NPDES Outfall, Potential Release Site (PRS) or Solid Waste Management Unit (SWMU), indicate the site/unit number and its relationship to the release/discharge:

NPDES Outfall: ☐ PRS: ☐ SWMU: ☐ PRS/SWMU Number: _____

Indicate with "X" in appropriate box(es).

Relationship of the Discharge to a SWMU or PRS:

Discharge Occurred: _____ Date & Time

Discharge Discovered: _____ Date & Time

Discharge Stopped: _____ Date & Time

Cleanup Started: _____ Date & Time

Cleanup Completed: _____ Date & Time

Material(s) Released / Discharged:

EPC-CP-QP-1007 Form 2

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Release/Discharge Mitigation Method:

Weather Conditions:

Duration of Release/ Discharge, in HOURS: | **Est. Volume released,in gallons:** | **Est. Volume Recovered, in gallons.**

Corrective Actions Taken (ie, type of BMPs, etc):

Nearest Watercourse (Canyon Name)

If the release/discharge reached a watercourse, describe the estimated surface area affected, presence of release/discharge now in the watercourse, and the media the release/discharge was detected in:

Depth to Groundwater, in FT, if known:

Distance to Nearest Drinking Water Well, in FT, if known: | **Well ID#**

24-HOUR RELEASE / DISCHARGE NOTIFICATIONS

	Contact Person	Phone	Fax	Date & Time (or Comment)
EPA:				
NMED/SWQB:				
NMED/GWQB:				
NMED/HRMB:				
NMED/DOE-OB:				
EPC-CP:				
DOE:				
OTHER:				
OTHER:				

Comments:

Form Completed By:

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7 DAY RELEASE / DISCHARGE ACTIONS

7 Day Notice ☐ 7 Day Notice Date: 7 Day Notice By:

Mark "X" when done.

Comments:

15 DAY RELEASE / DISCHARGE ACTIONS

15 day Follow-up Due: 15-day Follow-Up By:

Comments:

NMED 30 DAY APPROVAL / DISAPPROVAL

NMED 30 Day Response Date:

Comments:

Peter Maggiore, Acting Assistant Manager
National Security Missions
Los Alamos Field Office
3747 West Jemez Road MS-A316
Los Alamos, New Mexico 87544
(505) 606-0397

Jennifer Payne, EPC Division Director
Triad National Security, LLC.
Los Alamos National Laboratory
P.O. Box 1663, MS K404
Los Alamos, New Mexico 87544
(505) 667-2211

EPC-CP-QP-1007 Form 2

ATTACHMENT 23: **EPC-CP-QP-2110, *MSGP STORMWATER POLLUTION PREVENTION PLAN PREPARATION AND MAINTENANCE***

EPC-CP-QP-2110	Revision: **0**
Effective Date: 01/07/2020	Next Review Date: 01/07/2023

Environment, Safety, Health, Quality, Safeguards, and Security Directorate

Environment Protection and Compliance – Compliance Programs Group

Quality Procedure

MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance

Hazard Grading: ☒ Low ☐ Moderate ☐ High/Complex

Usage Level: ☒ Reference ☐ UET ☐ Mixed: UET Sections: _____

Status: ☒ New ☐ Major Revision ☐ Minor Revision

☐ Review w/No Changes ☐ Other: _____

Safety Basis: ☒ N/A ☐ USQ ☐ USI Number: _____

Document Author/Subject Matter Expert:

Name:	Organization:	Signature:	Date:
Holly L. Wheeler	EPC-CP	Signature on File	1-6-2020

Derivative Classifier: ☒ **Unclassified or** ☐ _____

Name:	Organization:	Signature:	Date:
Steven E. Wolfel	EPC-CP	Signature on File	1-6-2020

Approval Signatures:

EPC-CP Reviewer:	Organization:	Signature:	Date:
Terrill W. Lemke, Team Leader	EPC-CP	Signature on File	1-7-2020
EPC-CP RLM:	Organization:	Signature:	Date:
Taunia Van Valkenburg, Group Leader	EPC-CP	Signature on File	1-7-2020

REVISION HISTORY

Document Number and Revision *[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]*
EPC-CP-QP-2110, Rev. 0	01/07/2020	New document

Table of Contents

1.0 INTRODUCTION

The Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP), also referred to as the Permit, contains specific requirements for industrial activities of Los Alamos National Laboratory (LANL) covered by the permit. One requirement is the preparation, maintenance, and routine revision of a Stormwater Pollution Prevention Plan (SWPPP).

1.1 Purpose

Active MSGP facilities must be included in a SWPPP. The SWPPP is intended to document the selection, design, and installation of control measures to meet permit effluent limits. Additional documentation required by the Permit is to be kept with the SWPPP (including inspection maintenance, monitoring, and corrective action) and is intended to document the implementation of permit requirements.

1.2 Scope

This procedure contains information and specific steps for preparing a SWPPP, and identifying and documenting conditions in order to meet Permit requirements. Part 5 of the Permit contains specific requirements for developing, maintaining, and revising a SWPPP for facilities with stormwater discharge associated with industrial activities permitted under an MSGP. Part 5.5 describes the additional documentation required to be kept with the SWPPP.

1.3 Applicability

This procedure applies to Environmental Protection and Compliance-Compliance Programs (EPC-CP) technical staff, Deployed Environmental Professionals (DEPs), and subcontractor personnel (as applicable) who develop and maintain SWPPPs at MSGP regulated LANL facilities operated by Triad, LLC.

2.0 PRECAUTIONS AND LIMITATIONS

The hazard rating for the activities described in this procedure is **LOW** and does not require an Integrated Work Document.

3.0 PREPARING AN MSGP STORMWATER POLLUTION PREVENTION PLAN

Part 5 of the Permit contains the specific requirements for developing, maintaining, and revising a SWPPP. At a minimum, the SWPPP must contain the following elements:

- Stormwater pollution prevention team (Stormwater PPT);
- Site description (including a site map);
- Summary of potential pollutant sources;
- Description of control measures;

- Schedules and procedures;
- Documentation to support eligibility considerations under other federal laws; and
- Signature requirements.

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

The template provided in Attachment 1, EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* contains the elements required in a LANL MSGP SWPPP. Contact the MSGP Program Lead for questions regarding content.

3.1 Gathering Information for the SWPPP

SWPPP Preparer

[1] Contact the MSGP Program Lead for a copy of the most current SWPPP template.

[2] Obtain a copy of the previous year's SWPPP for reference (if one is available).

[3] Review the SWPPP template.

[a] Identify information that will need to be included in the SWPPP (e.g., MSGP sector, operational areas, Pollution Prevention Team member names, etc.).

[b] Identify documents that will need to be attached to the SWPPP (e.g., certifications, memorandums, maps, data summaries, endangered species reports, etc.).

[4] Identify documents and/or reports that are provided by EPC-CP.

[a] Contact the MSGP Program Lead with a request for needed information.

[5] Obtain maps as specified in the SWPPP template.

[a] Request a new map or update to existing map from the MSGP Program Lead.

[b] Provide a draft or map markup with information as required in the Permit.

3.2 Preparing the SWPPP

SWPPP Preparer

[1] Use a copy of the most current SWPPP template.

[2] Add information to the relevant sections.

[3] Text highlighted in yellow indicate areas to be replaced with facility specific information.

[a] IF text is part of an instruction (e.g., Insert site description text here.)
THEN delete the entire line and replace with the appropriate information.

[b] IF text is embedded as part of the line,
THEN replace just the yellow highlighted text with appropriate information (e.g., delete *Sector XX-(Insert Sector Title)* and replace with *Sector P – Land Transportation & Warehousing)*.

[4] Delete attachments that are not applicable to the active facility specific SWPPP.

[5] Attach other documentation (e.g., Spill Prevention, Control and Countermeasure Plan, Environmental Management System, copies of relevant portions of documents) as necessary.

[6] Send the draft SWPPP to the EPC-CP MSGP Program Lead and request a review.

NOTE 1: The EPC-CP MSGP Program Lead may delegate the review to personnel in the Storm Water Permitting/Compliance Team.

MSGP Program Lead or Designee

[7] Review the SWPPP to ensure information required by the Permit is included.

[a] Encourage the use of the *MSGP SWPPP Review Guidance Checklist* as a best management practice to cross-check SWPPP content with the Permit. See checklist example in Attachment 2.

[b] Provide comments to the SWPPP Preparer.

SWPPP Preparer

[8] The Preparer must resolve review comments with the MSGP Program Lead.

[9] Obtain the signature of a duly authorized representative (refer to Appendix B, Subsection 11 of the Permit) on the certification statements associated with the SWPPP and attachments (refer to Attachment 9 of the *MSGP SWPPP Template* Example).

NOTE 2: The Review & Approval System for Scientific and Technical Information (RASSTI) system requires upload of only PDF documents. It is highly recommended that all final certifications obtained contain a written signature rather than electronic signature. The RASSTI system adds a cover page to the document containing the LA-UR number, which obviates all electronic signatures due to the document change.

4.0 MAINTAINING THE MSGP SWPPP

4.1 Availability of the MSGP SWPPP

A complete copy of the current SWPPP is required to be kept at the active facility in an accessible format. The SWPPP must be immediately available to facility employees, EPA, and other entities identified in the Permit. The SWPPP must also be made available to the public. LANL meets this requirement by posting SWPPPs to the Public Reading Room internet web page. Refer to Part 5.4 of the Permit for more information.

SWPPP Preparer

[1] Submit the final certified SWPPP in PDF format to the RASSTI system at *rassti.lanl.gov*.

[a] The SWPPP must be identified as Los Alamos Unlimited Release, or LA-UR, to be posted to the Public Reading Room.

[b] Identify a derivative classifier to review the document.

[c] Identify the document for a **full classification review**. The Designated Unclassified Subject Area, or DUSA, system may **NOT** be used.

[d] Identify a line manager for an approval signature.

[e] Identify the document for release to Public Reading Room.

[2] Add the cover page containing the LA-UR number generated by the RASSTI system to the SWPPP.

[3] Contact the RASSTI staff for questions and assistance using this system.

4.2 Additional Documentation Requirements

The Permit requires additional documentation to be kept with the SWPPP that together keep records complete and up-to-date, and demonstrate full compliance with the conditions of the Permit. Some documents may be generated when a SWPPP is first written (e.g., copy of the permit). Other documents may be generated on an ongoing basis throughout a calendar year (e.g., inspections). Refer to Part 5.5 of the Permit for additional information.

SWPPP Preparer or Owner

[1] IF any of the following documents are generated,

THEN add the document to the facility SWPPP as soon as the document is generated and finalized (i.e., all signatures have been obtained).

- A copy of the Notice of Intent to Discharge (NOI) submitted to EPA and correspondence exchanged between Triad, LLC and EPA specific to coverage under the permit;

NOTE: There may be several modifications to the NOI during a permit term. Ensure you coordinate with the MSGP Program Lead to confirm all modifications are included in the SWPPP.

- A copy of the acknowledgement received from the EPA assigning the NPDES permit identification number
- A copy of the permit;
- Documentation of maintenance and repairs of control measures (refer to Part 2.1.2.3 of the Permit);
- All inspections, including Routine Facility Inspections and Quarterly Visual Assessments (refer to Parts 3.1.2 and 3.2.2 of the Permit);
- Description of any deviations from the schedule for visual assessments and/or monitoring, and the reason for the deviations (refer to Parts 3.2.3 and 6.1.5 of the Permit);
- Corrective action documentation (refer to Part 4.4 of the Permit);
- Documentation of any benchmark exceedances and the type of response to the exceedance employed;
- Documentation to support any determination that pollutants of concern are not expected to be present above natural background levels if stormwater is discharged directly to impaired waters; and
- Documentation to support any claim that the facility has changed its status from active to inactive and unstaffed.

5.0 REVISING THE MSGP SWPPP

The Permit specifies conditions that trigger a SWPPP review to ensure numeric and non-numeric effluent limits are met and to determine if modifications to stormwater controls are necessary (refer to Parts 4.1 and 4.2 of the Permit).

The SWPPP must also be modified based on corrective actions and deadlines required under Part 4.3 of the Permit, and documented in accordance with Part 4.4 of the Permit.

At a minimum, the SWPPP must be reviewed and revised once per calendar year, and no later than 45 days after conducting the final routine facility inspection for the year.

SWPPP Preparer or Owner

[1] The Stormwater PPT will review the SWPPP for the following at a minimum.

- The selection, design, installation, and implementation of control measures.
- Sources of pollution.

- Spill and leak procedures.
- Non-stormwater discharges (as applicable).

[2] IF any of the following conditions occur or are detected during an inspection, monitoring or other means,

THEN the Stormwater PPT must **immediately** review the SWPPP as specified above.

- Unauthorized release or discharge (e.g., spill, leak, discharge of non-stormwater not authorized by the permit);
- A discharge violates a numeric effluent limit (refer to Table 2-1 of the Permit);
- Controls measures are not stringent enough for discharge to meet applicable water quality standards or the non-numeric effluent limits in the permit;
- A required control measure was never installed, installed incorrectly, or not in accordance with Parts 2 and/or 8, or is not properly operated or maintained;
- Whenever a visual assessment shows evidence of stormwater pollution (e.g., foam, oil sheen, etc.).
- Construction or a change in design, operation, or maintenance at the facility that significantly changes the nature of pollutants discharged in stormwater from the facility , or significantly increases the quantity of pollutants discharged;

  NOTE 1: Changes include building removal or replacement, BMP removal or installation, outfall removal or creating a new outfall, changing drainage pathways or the path of stormwater flow.

- The average of four quarterly sampling results exceeds an applicable benchmark.

  NOTE 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 this is considered a benchmark exceedance.

[3] The Stormwater PPT must determine the modification(s) to be made to implement or maintain control measures and/or take corrective action.

[4] The revision/modification(s) will be implemented at the facility.

[5] The SWPPP will be revised/modified within 14 days of completion of a modification or corrective action to reflect the modification(s) made.

[6] Obtain a signature and date from a duly authorized representative on all SWPPP revisions/modifications in accordance with Appendix B, Subsection 11 of the Permit.

6.0 TRAINING

The following personnel require training before implementing this procedure.

- Deployed Environment, Safety, and Health Group and Team Leaders
- EPC-CP MSGP stormwater compliance personnel
- DEPs
- Other LANL or subcontract personnel identified as being required to prepare and maintain MSGP SWPPPs as part of their job duties

All EPC-CP personnel that execute the activities specified in this procedure must meet the minimum qualification and training requirements for their position as identified EPC-CP-PIP-2101, NPDES Multi-Sector General Permit Program. This will include "self-study" (required reading) for this procedure as assigned and documented in accordance with ADSH-TPP-301, *ADESH Training Program Plan*. Other participating LANL groups may require training documentation pursuant to local procedures.

Contract personnel that execute the activities specified in this procedure will be qualified and trained as required by the Exhibit D and Exhibit F. In addition, contract personnel will be required to complete "self-study" (required reading) of this procedure.

7.0 RECORDS

MSGP SWPPPs are signed and certified by a duly authorized representative of the individual facilities. These completed documents are maintained at the permitted facility, managed by the facility's Records Management designated point-of-contact or document manager, and posted to the LANL public reading room. The MSGP team may retain a copy for reference purposes.

Below, are records generated as a result of implementing this procedure. Records generated are identified by title and type.

Record Title	QA Record	Non-QA Record
Stormwater Pollution Prevention Plan	☒	☐
MSGP SWPPP Review Guidance Checklist	N/A	N/A

8.0 DEFINITIONS AND ACRONYMS

8.1 Definitions

See LANL *Definition of Terms*.

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.

8.2 Acronyms

See LANL Acronym Master List.

EPA	Environmental Protection Agency
EPC-CP	Environmental Protection and Compliance-Compliance Programs
DEP	Deployed Environmental Professional
DUSA	Designated Unclassified Subject Area
LANL or the Laboratory	Los Alamos National Laboratory
LA UR	Los Alamos Unlimited Release
MSGP or Permit	Multi-Sector General Permit
NPDES	National Pollutant Discharge Elimination System
NOI	Notice of Intent to Discharge
SWPPP	Stormwater Pollution Prevention Plan
PDF	Portable Document Format
PPT	Pollution Prevention Team

9.0 REFERENCES

Unites States Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit for Stormwater Discharges Associated With Industrial Activity (MSGP)

Federal Register, Final National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Industrial Activities. Federal Register: June 16, 2015, Volume 80, Number 115

Clean Water Act, Title 33 U.S.C. 1251

10.0 ATTACHMENTS

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template* Example
Attachment 2: *MSGP SWPPP Review Guidance Checklist* Example

Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example

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MSGP Stormwater Pollution Prevention Plan

Insert Facility Name

Triad National Security, LLC

Los Alamos National Laboratory

XX/XX/XXXX

Revision X

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Insert Name of Facility
STORMWATER POLLUTION PREVENTION PLAN

PREFACE

This Stormwater Pollution Prevention Plan (SWPPP) was developed in accordance with the provisions of the Clean Water Act (33 U.S.C. §§1251 et seq., as amended), and the *United States Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP)* (U.S. EPA, June 2015) issued by EPA. The SWPPP uses the industry specific permit requirements for *Sector XX-(Insert Sector Title)* as a guide. The applicable stormwater discharge permit is EPA General Permit Identification Tracking Number NMR050013 [Triad National Security, LLC (Triad)]. Click here to view contents of the 2015 Multi-Sector General Permit.

This SWPPP applies to discharges of stormwater from the operational areas of (List the operational areas) at Los Alamos National Laboratory. Los Alamos National Laboratory (also referred to as LANL or the "Laboratory") is owned by the Department of Energy (DOE), and is operated by Triad. Throughout this document, the term "facility" refers to (Insert facility name). The current MSGP expires at midnight on June 4, 2020.

1.0 FACILITY DESCRIPTION

1.1 Facility Information

Name of Facility: (Insert facility name e.g., TA-3-22 Power and Steam Plant)		
Street: P.O. Box 1663		
City: Los Alamos	State: NM	ZIP Code: 87545
County: Los Alamos		
NPDES ID (i.e., permit tracking number): NMR050013		
Primary Industrial Activity SIC code, and Sector and Subsector (2015 MSGP, Appendix D and Part 8): SIC XXXX, Sector X, Subsector XX		
Estimated area of industrial activity at site exposed to stormwater: XX acres		
Discharge Information		
Name(s) of surface water(s)/segment that receives stormwater from your facility: Sandia Canyon (Sigma Canyon to NPDES outfall 001). Note: For Roads and Grounds also add "and Mortandad Canyon (within LANL)". Note: For Asphalt Batch Plant alone, delete Sandia Canyon information and insert only "Mortandad Canyon (within LANL)."		
Does this facility discharge industrial stormwater directly into any segment of an "impaired water" (see definition in 2015 MSGP, Appendix A)? ☒Yes No		
Pollutants causing the impairment: (Insert pollutants: list can be found in the Triad Notice of Intent (NOI)		

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Pollutants causing the impairment (see above) that may be present in industrial stormwater discharges from this Facility:
Are any of your stormwater discharges subject to effluent limitation guidelines (ELGs) (2015 MSGP Table 1-1)? ☐Yes ☒No If Yes, which guidelines apply? (Note: Asphalt Batch Plant is subject to ELGs) Not applicable.

1.2 Stormwater Pollution Prevention Team (PPT)

Insert a description of the team

The specific duties of individual team members of the PPT are listed in the table below.

Staff Names	Individual Responsibilities
Group Leader: Name Title, Organization	Responsible for the management of all environmental, safety, health, and quality programs for the yards, buildings and facilities within this Plan. This includes performing oversight and periodic walk downs to ensure implementation of the requirements of the MSGP and this SWPPP including overseeing the assigned duties of other PPT members. The Group Leader is responsible for ensuring problems noted during inspections are corrected. The Group Leader must also ensure adequate resources are obtained to ensure compliance requirements of the MSGP and this SWPPP are met.
Deployed Environmental Professional (DEP): Name Title, Organization	Responsible for the management of all environmental programs and issues for the yards, buildings and facilities listed within this Plan. The DEP is responsible for training, recordkeeping, and SWPPP revision. The DEP ensures documentation of inspections and other required MSGP records relative to the SWPPP are managed in accordance with the Permit and established document control procedures and that the SWPPP is kept current. The DEP provides technical and regulatory support to facility and operations personnel regarding implementation of the MSGP and this SWPPP. Lastly, the DEP conducts routine facility inspections and if necessary, visual assessments, in accordance with the Permit. Identified conditions requiring corrective actions from routine facility inspections are entered into the Environmental Protection and Compliance-Compliance Programs (EPC-CP) Corrective Action Report (CAR) database. The DEP is responsible for tracking and updating the status of corrective actions that cannot be implemented immediately.
Facility Operations Division (FOD) Manager: Name Title, Organization	Responsible for managing the maintenance and operation of all aspects of the yards, buildings and facilities listed within this Plan. The manager shall provide review and ensure coordination with core personnel and the PPT, as appropriate, when tenants within

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	the FOD propose new processes, operations, features, or a new site that may be subject to the MSGP.
EPC Core: Name Title, Organization	The MSGP Program Lead is responsible for managing and administering the MSGP Program for all industrial facilities operated by Triad within Los Alamos National Laboratory. The MSGP Program Lead advises and provides guidance to facility or operations personnel on NPDES MSGP regulations/requirements. The Program Lead also acts as the institutional point of contact for all interactions with the regulatory authority (EPA) and supervises personnel implementing stormwater monitoring requirements for the facility.
Operations Manager(s): Name Title, Organization	Responsible for day-to-day operations at the facility. Assists the DEP and EPC with inspections; spill reporting; implementing, installing and maintaining storm water controls (also known as Best Management Practices) (BMPs); and providing documentation as requested by other team members. The Operations Manager is key to ensuring adequate communication and coordination of issues regarding implementation of the MSGP and this Plan. Operations Managers also assist the DEP/EPC with SWPPP training and/or briefings, as requested.

1.3 Site Description

Insert text with site description. Include information on type of operation(s), industrial operating equipment (associated with the Asphalt Batch Plant and the TA-3-22 Power and Steam Plant), main structures, activities, outfalls, and substantially identical outfalls.

1.4 General Location Map

The general location map for the facility can be found in Figure A. Figure B-X (if you have more than one site map, list them all here) contains all site maps and identifies all receiving waters associated with stormwater discharges from the facility. X percent of the site flows to (Insert canyon name). The canyon at this location is a (Insert stream type e.g., perennial, ephemeral, intermittent) and eventually flows to the Rio Grande approximately X miles southeast of the site.

1.5 Site Map

The site map is provided as Figure B-X (if you have more than one site map, list them all here) and illustrates the facility's activities: including facility boundary, structures, impervious surfaces, industrial activity areas, spills, operational areas, drainage patterns, stormwater controls, monitoring locations, outfalls and nearby receiving streams.

As required by the 2015 MSGP, the following information specific to the facility is either shown on the site map or contained with additional information provided in this SWPPP.

- **Site boundaries and acreage.** The site covers approximately X acres.
- **Significant structures and impervious surfaces.** The site is X percent impervious, primarily structures and paved lots.

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- **Direction of stormwater flow and site drainage.** Direction of flow is indicated with arrows.
- **Locations of stormwater control measures.**
- **Locations of all receiving waters.** In the immediate vicinity of the facility, (Indicate if any of the waters are Impaired and, if so, whether the waters have TMDLs established for them. See paragraph below this list). Also, indicate if the receiving water includes a wetland. A map of nearby receiving waters is provided as Figure B-X.
- **Locations of all stormwater conveyances.** This includes all ditches, pipes, and swales.
- **Locations of potential pollutant sources.**
- **Locations of significant spills or leaks.**
- **Locations of all stormwater monitoring points.**
- **Locations of stormwater inlets and outfalls.** Of which each will require a unique identification code for each outfall (e.g., Outfall 005, etc.), indicating if you are treating one or more outfalls as "substantially identical" and an approximate outline of the areas draining to each outfall.
- This facility is not associated with a municipal separate storm sewer system (MS4).
- **Areas of designated critical habitat for endangered or threatened species.** There are (Insert "no areas" or a number of areas) in the direct vicinity of the facility. However, a map for threatened and endangered species within LANL property is included as Figure B-X.
- Locations of the following activities where such activities are exposed to precipitation:
  - Insert all facility activities exposed to stormwater (e.g., fueling locations; loading/unloading areas; locations used for the treatment, storage, or disposal of wastes; liquid storage tanks; processing and storage areas; machinery; location and sources of run-on to the site; transfer areas for substances in bulk; immediate access roads used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; and vehicle and equipment maintenance and/or cleaning areas. Only include the activity areas specific to the facility (for example, if you do not refuel within the active facility boundary, do not include "fueling locations" in this bulleted list). Use a secondary bullet list level in this section.

2.0 POTENTIAL POLLUTANT SOURCES

Industrial activities that could potentially result in releases to the environment are summarized in 2.1 below. The site map for the facility is provided in Figure B-1.

Insert text describing structures and industrial activities that could potentially result in a release to the environment. Include information on location (e.g. inside, outside), associated containment, protection (e.g., roofed areas or coverings), and other devices or practices to prevent or contain spills, prevent run-on and run-off.

2.1 Potential Pollutants Associated with Industrial Activity

List specific areas and activities that could potentially result is a release to the environment and the constituents that may be released. Include a list of any Solid Waste Management Units and Areas of Concern (also known as Consent Order Sites or Potential Release Sites) with a description of each and associated potential pollutants/contaminants.

2.2 Spills and Leaks

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Insert information on spill and leak history at the facility, if any. Text may be in table format as shown below.

Date	Description	Outfall(s) Affected

Insert information on areas where spills and leaks could occur at the facility. Text may be in table format as shown below.

Specific Equipment/Industrial Activity Areas and Location	Outfall(s) Affected

In the event of any future spill or leak at any of the facility areas, a spill report, documenting the occurrence and the nature of the spill or leak, will be completed. The spill report will be filed promptly upon completion and documentation of the spill clean-up, and will be summarized in this section of the SWPPP. In addition, spills within MSGP facility boundaries will be entered as conditions requiring corrective action in the MSGP CAR database and will be updated as corrective action occurs, in accordance with EPC-CP-QP-022, *MSGP Corrective Actions*.

The probability of spills or releases at the facility is minimized by (Insert information on how the facility will minimize spills and leaks).

2.3 Unauthorized Non-Stormwater Discharges

Insert information describing any NPDES permitted non-stormwater discharges, unpermitted outfalls, or unauthorized discharges associated with the facility. Describe any potential sources of non-stormwater discharges (e.g., testing of fire hydrants) and where wastewater drains to. Include a reference to the "Non-Stormwater Discharge Assessment and Certification" and indicate that it is provided in Attachment 3.

2.4 Salt Storage

Insert text describing salt storage areas at the facility, if present. If none exists, state salt is not stored at the facility.

2.5 Historical Data Summary

The following tables provide monitoring data at the facility for the past X years.

Permitted Facility: (insert facility name)

Calendar Year XXXX

Contact MSGP Program Lead to obtain this information formatted for insertion.

Note: This information will be updated every year during the annual SWPPP update, to include the 3 most current years of monitoring data.

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3.0 STORMWATER CONTROL MEASURES

Control measures at the facility are designed to minimize the potential release of pollutants that could adversely affect water quality. Insert text with stormwater control measure information.

3.1 Non-Numeric Technology-Based Effluent Limits

Insert text with non-numeric technology-based effluent limits information. Note: This is specific to Sectors A, AA, N, O and P.

3.1.1 Minimize Exposure

Insert text describing all structural controls (structures or covers) or practices used to minimize the exposure of industrial activities to precipitation. The SWPPP must describe where the controls or practices are being implemented at the facility. Examples of exposure-minimizing control measures include: location and extent of grading, berms, curbs used to contain contaminated stormwater or divert it around areas of industrial activity, materials stored within secondary containment, location of spill cleanup kits, schedule for employee spill abatement and cleanup training, procedure or practices for storage of leaky vehicles and equipment.

3.1.2 Good Housekeeping

Good housekeeping practices specifically applicable to the prevention of stormwater contamination include the following measures: Insert text describing any practices implemented to keep exposed areas at the facility clean. Describe where each practice is being implemented at the facility. Examples of good housekeeping control measures include how workspaces are maintained; routine inspections of heavy equipment, other equipment and waste containers; inspections of material storage areas; identifying specific personnel/positions responsible for empting drip pans, etc. Refer to Section 4.1 of this document for specific schedules for waste and recyclable material pickup and sweeping.

All site areas exposed to precipitation are walked down during daily operations and monthly routine facility inspections to ensure that the grounds are kept in an orderly condition. The outdoor metal storage areas are inspected to ensure all piping and metal raw material is off the ground on storage racks and covered, or stored inside buildings, sheds or transportable containers. Vehicle and forklift parking areas are inspected for leaks or spills as well as storage areas containing oil-filled equipment. The entire site, including loading areas and outfalls, are inspected for floatable debris, garbage, waste and all other potential pollutants. All dumpsters and roll-off bins are inspected to ensure they are closed.

3.1.3 Maintenance

Control measures at the facility will be kept in effective operating condition by the implementation of scheduled preventive maintenance, standard operating procedures (SOPs), engineering guidance, and manufacturer's specifications as applicable. If control measures need to be replaced or repaired to maintain compliance with the 2015 MSGP, necessary modifications will be made according to the timelines specified in the *Corrective Action and Deadlines* requirements of Section 6.0 of this SWPPP.

Deficient items identified during routine facility inspections, walk-downs, or by any other means of identification, will be documented on the routine facility inspection forms and entered into the MSGP CAR database. The condition requiring corrective action will remain open until proper maintenance or

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corrective action has been completed. CAR information, along with documentation of maintenance/repair of control measures, is in Attachment 9 of the SWPPP.

Insert text identifying how industrial equipment is maintained to avoid leaks or other releases. Also, include information on how site-specific control measures are maintained to ensure effective operating condition.

3.1.4 Spill Prevention and Response

Spills, leaks, or other releases will be prevented and minimized by (insert information on how the facility prevents and minimizes unauthorized releases).

Insert text describing the general facility approach to spill cleanup.

All spills or releases are reported to EPC-CP by using the spills pager (505) 664-7722. Although incidental spills may be cleaned up by facility personnel, all emergency spills or releases are reported to Emergency Management Division-Emergency Response (EMD-ER) and/or the Facility Duty Officer by calling 667-2400. If 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. In the event of a spill, EMD-ER will coordinate appropriate cleanup procedures and EPC-CP will notify the individuals or organizations responsible for completing spill reports and providing information needed to fulfill regulatory reporting requirements.

Unauthorized releases or discharges within industrial facility boundaries are entered into the MSGP Corrective Action Reporting database in accordance with EPC-CP-QP-022, *MSGP Corrective Actions*. In addition, the completion of an Unplanned Release Report is required in the event of a spill. The report will be submitted to EPC-CP personnel and handled according to internal spill record keeping procedures. Spills may be "reportable" (requiring external agency notification) depending on the nature of the spilled material and the location of the release. External agency notification may consist of verbal and/or written notification to the National Response Center, Environmental Protection Agency Region VI, or the New Mexico Environment Department (NMED). EMD-ER, the FOD and EPC-CP, in accordance with Laboratory and DOE policies and federal and state regulatory reporting requirements, will make the determination for the type of reporting required. EPC-DO-QP-101, *Environmental Reporting Requirements for Releases or Events* is used for this purpose (see Attachment 21).

Copies of internal spill reports are maintained by the responsible organization and in the EPC-CP database. The EPC-CP procedure for spill reporting and response, ENV-CP-QP-007, *Spill Investigations*, can be found in Attachment 22 of this SWPPP.

3.1.5 Erosion and Sediment Control

Insert text describing how erosion at the facility and sediment transport off the facility is prevented/minimized. Erosion control measures that prevent soil or sediment from becoming mobilized should be used as the primary line of defense. Sediment control measures that trap, infiltrate, or settle out mobilized sediments, should be used to back-up the erosion control measures.

3.1.6 Management of Runoff

Insert text describing how the facility manages stormwater runoff. This will include a description of controls used to divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff. Installed or utilized control measures may be listed with a description of their function at the facility.

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3.1.7 Salt Storage Piles or Piles Containing Salt

Insert text describing how the facility manages salt storage piles or piles containing salt. Offloading operations should occur within contained areas with appropriate measures in place to prevent off-site migration or track out of salt from the contained area. Installed or utilized control measures may be listed with a description of their function at the facility. If none exists, state salt is not stored at the facility.

3.1.8 Dust Generation and Vehicle Tracking of Industrial Materials

Insert text describing how the facility manages dust generation and vehicle tracking.

3.2 Numeric Effluent Limitations Based on Effluent Limitations Guidelines

Insert information identifying the facility as meeting or not meeting the industrial category requirements for effluent monitoring as listed in Part 2.1.3 (*Table 2-1 Applicable Effluent Limitation Guidelines*) of the 2015 MSGP and if benchmark monitoring is or is not required.

If the permit does identify sector-specific requirements for the facility, insert a description of specific controls implemented at the facility to ensure numeric effluent limits are met.

3.3 Water Quality-Based Effluent Limitations and Water Quality Standards

Impaired waters monitoring is performed annually at the facility as listed in Section 4.7 of this SWPPP. The pollutants monitored can change yearly based on the requirements of the MSGP. The table in Section 4.7 lists the current year monitoring requirements and standards.

Stormwater from (insert facility name) discharges to (insert canyon name). Insert information on canyon reaches identified as impaired waters, pollutants causing the impairment, and approved or established TMDLs for the canyon. Also, insert specific information relative to the controls measures used to ensure discharges from industrial activities meet the water quality standards.

Refer to Section 4.7 for specific actions that will be taken when a water quality standard is exceeded.

4.0 SCHEDULES AND PROCEDURES

Preventative maintenance of control measures used to comply with the Permit effluent limits can avoid situations that result in discharges to the environment. Part 5.2.5 of the 2015 MSGP specifies control measures will have a schedule or frequency for maintenance and procedures specifying how maintenance is conducted. Part 5.5 requires documentation of maintenance and repairs including the date(s) of regular maintenance. See Attachment 10 for the Scheduled Maintenance Log.

4.1 Good Housekeeping

Insert a schedule for housekeeping activities such as waste and recyclable material (scrap metal, wood tires) pickup, street sweeping, etc. and identify any procedures used to ensure this occurs.

4.2 Maintenance

Insert a discussion of and schedule for preventative or regular maintenance of equipment such as oil/water separators, culvert clean outs, other control measures, etc. Note: Industrial equipment will be

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maintained so that leaks and other releases are avoided. All control measures will be maintained in effective operation condition.

4.3 Spill Prevention and Response

Insert a discussion of and schedule for preventing and responding to spills and leaks such as regular maintenance of equipment, placing pans under heavy equipment, and maintaining spill kits. Also, specify cleanup equipment, procedures and spill logs, and identify how often employees are trained in spill response procedures, as appropriate.

4.4 Erosion and Sediment Control

Insert a discussion of and schedule for preventative or regular maintenance of erosion, sediment and velocity control measures. If polymers and/or other chemical treatments are used as erosion or sediment control measures, identify them and include a regular schedule for reapplication. Also, include a schedule for restocking these materials to ensure the facility does not run out.

4.5 Employee Training

Employee training is essential for effective implementation of the SWPPP and MSGP requirements. The goals for the training program are to ensure that employees: (1) are aware of what happens when pollutants come in contact with stormwater; (2) are familiar with and will implement the requirements of this SWPPP; (3) are capable of preventing spills; (4) respond safely and effectively to an accident when one occurs; (5) recognize when there is an issue with a control measure; (6) recognize when additional control measure are necessary; and (7) identify situations that could lead to stormwater contamination.

Per Part 2.1.2.8 of the 2015 MSGP, training relevant to the SWPPP and MSGP is required for all workers at the facility that work in areas where industrial materials or activities are exposed to stormwater (MSGP sites); workers, managers, and supervisors who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel); and all members of the PPT. Training is designed to ensure these personnel understand the MSGP and SWPPP requirements, as well as their specific responsibilities regarding these requirements.

Training provided and assigned to these personnel cover both the specific control measures used at the facility; along with monitoring, inspection, planning, reporting, and documentation requirements described in this SWPPP. Training will be conducted at least annually. The DEP, Deployed Environment Safety and Health (DESH) Group Leader and Pollution Prevention Team members are responsible for ensuring all appropriate personnel receive this training. It is suggested to add a list of job titles per facility that require training (e.g., Mechanics, Heavy Equipment Operators, PPT members, Operations Manager(s), etc.).

Training activities are documented in accordance with LANL's Training Standards. In cases where training is formalized enough to require specific curricula and reoccurrence, the training activity will be recorded in LANL's official U-TRAIN database. Informal briefings, such as those included in-group safety meetings are not typically recorded in U-TRAIN. Sign-in sheets are used to document attendance and will be kept on file in Attachment 11 of this SWPPP.

The topics in this SWPPP that are covered in the latest version of the facility-specific annual MSGP training (see Attachment 11) include the following:

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- Overview of the SWPPP contents;
- Spill response and cleanup procedures, good housekeeping, maintenance requirements, and material management practices to prevent stormwater pollution;
- The location of all controls on the site required by this permit and how they are 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.

4.6 Routine Facility Inspections and Quarterly Visual Assessments

Routine inspections at this facility are conducted and documented monthly in accordance with EPC-CP-QP-023, *MSGP Routine Facility Inspections* (Attachment 16).

Visual assessments are conducted in accordance with EPC-CP-QP-064, *MSGP Stormwater Visual Assessments* (Attachment 18).

4.6.1 Routine Facility Inspections

At least once each calendar year, the routine facility inspection is conducted during a period when a stormwater discharge is occurring. A qualified member of the PPT (typically the DEP, a representative from the EPC-CP Storm Water Permitting/Compliance Team or EPC-CP Program Lead) performs the inspection. The 2015 MSGP consolidates the different and separate documentation requirements in the Comprehensive Site Inspection Procedures and Routine Facility Inspection Procedures from the 2008 MSGP. EPC-CP will perform at least one routine inspection per year in order to evaluate corrective action status for the Annual Report requirements.

Routine inspections will evaluate the following areas, at a minimum:

- Areas where industrial materials or activities are exposed to stormwater;
- Areas identified in the SWPPP and those that are potential pollutant sources;
- Areas where spills and leaks have occurred in the last three years;
- Discharge points(outfalls/Substantially Identical Outfalls (SIOs); and
- Control measures used to comply with the effluent limits contained in this permit.
- Specific areas of the facility to be inspected are described in Section 2.1.

During routine inspections, the following must be examined and looked for:

- 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; and
- Control measures needing maintenance, repairs or replacement.

Inspections performed by the PPT member are documented by completing the routine facility inspection form, which identifies all conditions requiring corrective action and other potential stormwater pollution issues that were encountered. All conditions requiring corrective actions identified during the inspection are addressed in accordance with Section 6.0 *Corrective Actions and Deadlines* of this plan. Facility personnel or the DEP may also perform daily, weekly, or other periodic facility surveys (walk downs)

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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between monthly routine inspections to ensure compliance with the SWPPP and MSGP. Completed routine facility inspection forms are provided in Attachment 7 of this SWPPP and meet the requirements listed in the 2015 MSGP (Part 3.1.2.).

4.6.2 Quarterly Visual Assessments

Once each quarter, (April 1-May 31, June 1-July 31, August 1-September 30, October 1-November 30) a stormwater sample is obtained and visual assessment performed at each outfall, if a measureable storm event occurred. A qualified member of the PPT (DEP, EPC-CP field team member or MSGP Program Lead) conducts the visual assessment. The visual assessment will be:

- Of a sample in a clean, clear 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 or as soon as practicable thereafter. Alternatively, document why it was not possible to collect the sample within the first 30 minutes (i.e. adverse conditions, not enough flow, etc.); and
- Conducted at least 72 hours since the last storm event; or document that the 72-hour period is representative of local storm events during the sampling period.

Note: Snowmelt samples need only be collected during a period of measurable discharge.

The visual assessment will inspect 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.

Exceptions to visual assessments:

- Document rationale if a visual assessment is unable to be collected in a quarter (no precipitation event or adverse conditions, etc.);
- Perform an additional assessment during the next qualifying storm event if unable to perform in a particular quarter; and
- Perform one quarterly assessment during snowmelt discharge (taken during a measurable discharge from the site).

For facilities with substantially identical outfalls, quarterly visual assessments may be performed at only one of the outfalls, provided that you perform visual inspections on a rotating basis at each substantially identical outfall.

The PPT member performing the visual assessment documents potential stormwater pollution problems that were observed during the assessment on the quarterly visual assessment form. Any required corrective actions identified during the assessment are addressed in accordance with Section 6.0 *Corrective Actions and Deadlines* of this plan. Completed quarterly visual assessments are provided in Attachment 8 of this SWPPP and meet the requirements listed in the 2015 MSGP (Part 3.2.2).

4.7 Monitoring

Analytical monitoring comprised of Impaired Waters [insert Effluent Limitation Guideline monitoring for industrial activity identified in Tables 1-1 and 6-1 of the 2015 MSGP (for example the Asphalt Batch Plant)] monitoring is performed annually on stormwater discharges from the site. Benchmark constituents are monitored quarterly. Monitoring occurs when storm events result in an actual discharge from the site and follow the preceding measurable storm event by at least 72 hours (3 days), unless documented that the storm event is representative of local storm events during the sampling

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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period. For runoff from snowmelt, the monitoring is performed at a time when a measurable discharge from the site occurs.

Monitoring is conducted according to test procedures approved under 40 CFR Part 136. Runoff samples are collected by taking a minimum of one grab sample from a discharge, collected within the first 30 minutes of 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 is collected as soon as practicable after the first 30 minutes and documentation is kept with the SWPPP explaining why it was not possible.

LANL is located in a high elevation, semi-arid climate where the majority of rainfall occurs during a period between July and September. Freezing conditions that would prevent runoff from occurring for extended periods may also occur during the winter months. If adverse weather conditions prevent the collection of a sample according to the relevant monitoring schedule, a sample will be collected during the next qualifying storm event or as soon as practicable.

Monitoring occurs at automated sampling station **[insert automated sampler identifier (e.g., MSGP07501)]** as identified in Section 1.5. Discharge from the facility is (insert cardinal direction) to (insert canyon name) (impaired waters), which is a tributary of the Rio Grande located approximately X miles east of the facility.

Outfall (insert substantially identical outfall identification number) is "substantially identical" to Outfall (insert monitored outfall identification number) based on (insert the following information: industrial activities conducted in the drainage area, description of control measures implemented in the drainage area of each outfall, description of exposed material located in the drainage area of each outfall that are likely to be significant contributors of pollutants to stormwater discharges, and an estimate of the runoff coefficient of the drainage areas). Outfall locations are shown on the site map provided in Figure B-1. Note: Delete this paragraph if the facility has no substantially identical outfalls. If the facility has multiple maps, reference them all.

Monitoring will continue annually for constituents associated with impaired waters until a constituent is no longer detected in stormwater samples.

If the impaired water or benchmark constituent value exceeds the New Mexico Water Quality criterion (insert or ELG value is exceeded, if applicable), the Pollution Prevention Team will:

- Review the selection, design, installation, and implementation of control measures to determine if modifications are necessary to meet the effluent limits;
- Implement the necessary modifications within the timeframe specified for corrective action; and
- Continue benchmark or annual monitoring of the constituent (as required by Part 6.2 of the 2015 MSGP);
- If an ELG is exceeded, follow-up monitoring within 30 calendar days (or during the next qualifying runoff event) of implementing corrective action(s) is required. When follow-up monitoring exceeds the applicable effluent limitation, an exceedance report is submitted to EPA and monitoring continues at least quarterly, until the discharge complies with the effluent limit.

For each monitoring event, except snowmelt monitoring, the following information will be recorded and maintained through work orders, LANL database systems, and Discharge Monitoring Records:

- The date, exact place, and time of sampling or measurements;
- The date and duration (in hours) of the rainfall event
- Rainfall total (in inches) for that rainfall event

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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- The individual(s) who performed the sampling or measurements;
- The date(s) analyses were performed
- The individual(s) who performed the analyses;
- The analytical techniques or methods used; and
- The results of such analyses.

All records of monitoring information, including all calibration and maintenance records are maintained for a minimum period of at least three years from the date the permit expires.

Insert information on quarterly benchmark and annual Impaired Waters or Effluent Limitation Guideline monitoring required for facility and benchmark pollutants to be sampled.

LANL's applicable stormwater monitoring procedures can be found in the following Attachments:

- EPC-CP-QP-047, *Inspecting Stormwater Runoff Samplers and Retrieving Samples for the MSGP* (Attachment 19)
- EPC-CP-QP-2106, *Processing MSGP Stormwater Samples* (Attachment 20).

The table on the following page lists the current Summary of Monitoring Requirements. The monitoring values have been modified to reflect New Mexico water quality standards and are based on the most protective water quality standards from the Standards for Interstate and Intrastate Surface Waters (effective on February 28, 2018), 20.6.4.900 NMAC; and as set forth in Part 9.6.2.1 of the 2015 MSGP.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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Summary of Monitoring Requirements

Outfalls: (insert outfall numbers)

Contact MSGP Program Lead to obtain this information formatted for insertion.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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5.0 DOCUMENTATION FOR ELIGIBILITY CONSIDERATIONS UNDER OTHER FEDERAL LAWS

5.1 Endangered Species

The Final Site-Wide Environmental Impact Statement (EIS) for the Operation of Los Alamos National Laboratory (DOE/EIS-0380) was issued in May 2008, and a Record of Decision in September 2008. Stormwater issues and associated pollution prevention requirements and activities at LANL are analyzed in Chapters 4 and 5 of the 2008 Site-Wide EIS. These activities are integrated into environmental reviews on a project-specific level through LANL's Integrated Review Tool (IRT), which incorporates both the Excavation Permit (EX-ID) and Permit Requirements Identification (PR-ID) process. Stormwater issues are identified and pollution prevention activities are implemented during the design and construction phases of all LANL projects, and as part of facility operations, including routine maintenance. LANL staff monitors stormwater pollution prevention compliance at MSGP sites in accordance with Section 4.7 *Monitoring* of this plan. Corrective actions are taken as necessary as described in Section 6.0 *Corrective Actions and Deadlines* of this plan.

Part 5.2.2 of the 2015 MSGP requires areas of designated critical habitat for endangered or threatened species, as applicable, be included in the SWPPP. The *Threatened and Endangered Species Habitat Management Plan for Los Alamos National Laboratory* (LA-UR-17-29454) was last updated in October 2017 (see Attachment 13). This document provides a management strategy for the protection of threatened and endangered species and their habitats on LANL property. The MSGP IPaC Trust Resource Report (see Attachment 14) is also attached for informational purposes.

5.2 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 RANT

6.0 CORRECTIVE ACTIONS AND DEADLINES

When any of the following conditions occur or are detected during an inspection, monitoring or any other means, this SWPPP (e.g., sources of pollution; spill and leak procedures; non-stormwater discharges; the selection, design, installation and implementation of control measures) is reviewed and

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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revised (as appropriate). The purpose is to ensure effluent limits of the 2015 MSGP permit 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 the facility;
- A discharge violates a numeric effluent limit;
- Control measures are not stringent enough for the discharge to meet applicable water quality standards or non-numeric effluent limits;
- An inspection identifies that a required control measure was never installed, was installed incorrectly or is not being properly operated or maintained; and
- Whenever a visual assessment shows evidence of stormwater pollution.

When any of the following conditions occur, a review of the selection, design, installation, and implementation of control measures is performed to determine if modifications are necessary to meet the effluent limits in this permit:

- Construction or a change in design, operation, or maintenance at the facility significantly changes the nature of pollutants discharged in stormwater from the facility, or significantly increases the quantity of pollutants discharged; or
- The average of 4 quarterly sampling results exceeds an applicable benchmark. If less than 4 benchmark samples have been taken, but the results are such that an exceedance of the 4 quarter average is mathematically certain (i.e., if the sum of quarterly sample results to date is more than 4 times the benchmark level) this is considered a benchmark exceedance, triggering this review (see Section 4.7); or
- If an impaired water constituent exceeds the NM Water Quality criterion (see Section 4.7).

When the review identifies the need to modify the SWPPP, it will be revised within 14 calendar days of completion of the associated condition requiring corrective action.

6.1 Immediate Actions

When a condition requiring corrective action is identified, all reasonable steps necessary to minimize or prevent the discharge of pollutants are immediately taken (i.e. spill clean-up, scheduling repairs) until a permanent solution (if needed) can be implemented. Immediate action means all reasonable steps are taken the same workday or no later than the following workday (when it is too late in the day to take corrective action).

6.2 Subsequent Actions

When additional corrective actions are required (e.g. installing or making operational a new or modified control, completing repairs, ordering BMPs) they will be completed by the next storm event, if possible, or within 14 calendar days (from initial discovery). When it is determined that it is infeasible to complete corrective actions within 14 days, documentation of infeasibility and a schedule for completion of the work is documented in the CAR database, which will be completed no later than 45 days (from initial discovery). When it is determined that corrective actions will exceed 45 days, EPA is notified and provided justification of why actions will exceed the timeframe; and a minimal amount of additional time to complete the work may be approved.

6.3 Corrective Action Documentation

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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Upon discovery, conditions requiring corrective action are documented by the DEP or EPC-CP on a Routine Facility Inspection Form and/or entered into the CAR database. The action will be kept open in the database until the issue has been resolved. Documentation of maintenance and repairs of stormwater control measures (BMPs) will be kept in Attachment 10 of this SWPPP. Where corrective actions result in changes to procedures or controls documented in this SWPPP, modifications to the SWPPP are made accordingly within 14 calendar days of completing the corrective action(s). LANL procedure EPC-CP-QP-022, *MSGP Corrective Actions* can be found in Attachment 17.

7.0 ACRONYMS

BMP	Best Management Practice
CAR	Corrective Action Report
DEP	Deployed Environmental Professional
DESH	Deployed Environmental Safety and Health
DOE	Department of Energy
EIS	Environmental Impact Statement
ELG	Effluent Limitation Guidelines
EMD-ER	Emergency Management Division-Emergency Response
EPA	Environmental Protection Agency
EPC-CP	Environmental Protection and Compliance – Compliance Programs
FOD	Facility Operations Division
IPaC	Information for Planning and Consultation
LANL or the Laboratory	Los Alamos National Laboratory
MSGP or Permit	Multi-Sector General Permit
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
PPT	Pollution Prevention Team
SWPPP	Stormwater Pollution Prevention Plan
URL	Uniform Resource Locator

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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8.0 SWPPP CERTIFICATION

STORMWATER POLLUTION PREVENTION PLAN
(Insert Facility Name)
Los Alamos National Laboratory

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.

Signature_____ Date_____
(Insert Printed Name)
(Insert Title)

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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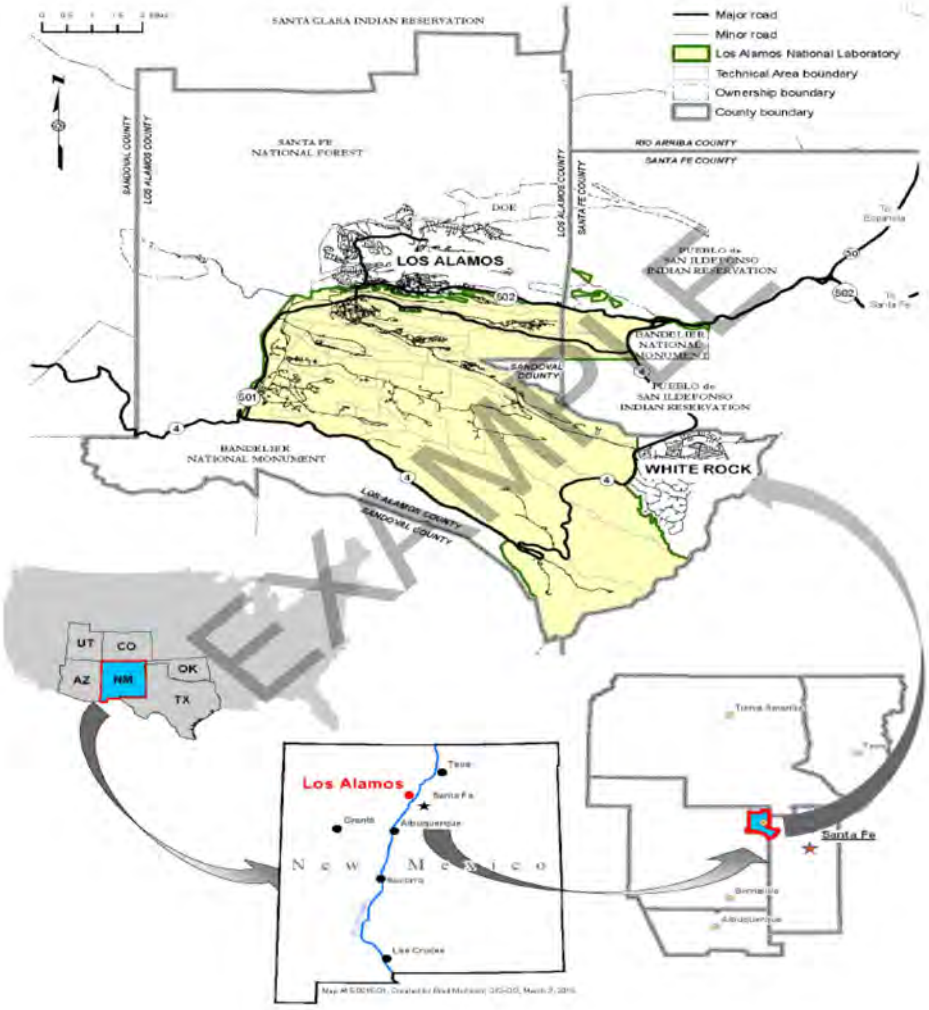
Insert Facility Name
MSGP Stormwater Pollution Prevention Plan
Document Reference Number
Revision X, Date

FIGURE A: GENERAL LOCATION MAP



Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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FIGURE B: MAP(S)

Label the figures as Figure B-1, Figure B-2, etc.

Insert maps in the following order:

- Facility specific site map(s),
- Receiving waters maps, and
- Threatened Endangered Species Map.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 1: NOTICE OF INTENT, SUPPORTING DOCUMENTATION, AND UPDATES

Insert the appropriate attachment. Note: There may be several "Change NOIs" submitted to EPA within a permit term. Contact the MSGP Program Lead to ensure all are included in this attachment.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 2: SWPPP AMENDMENTS

Insert text documenting all changes or updates made to the SWPPP. Text may be in table format as shown below.

Date	Plan Section	Reason for Amendment	Amendment

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 3: CERTIFICATION OF NO UNAUTHORIZED STORMWATER DISCHARGES

Insert the appropriate attachment.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 4: DULY AUTHORIZED SIGNATORY MEMORANDUM

Insert the appropriate attachment.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 5: DISCHARGE MONITORING REPORTS

Insert the discharge monitoring reports.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 6: ANNUAL REPORTS

Insert the annual reports. The MSGP Program Lead provides these.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 7: ROUTINE FACILITY INSPECTIONS

Insert completed Routine Facility Inspection forms.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 8: QUARTERLY VISUAL ASSESSMENTS

Insert completed Quarterly Visual Assessment forms. EPC-CP provides these by memorandum as they are produced.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 9: CORRECTIVE ACTION DOCUMENTATION AND CERTIFICATION

Contact the EPC-CP MSGP Program Lead for an excel spreadsheet of all corrective actions and a certification statement for signature.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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Insert Facility Name
MSGP Stormwater Pollution Prevention Plan
Document Reference Number
Revision X, Date

ATTACHMENT 10: SCHEDULED MAINTENANCE LOG

SCHEDULED MAINTENANCE LOG

Date	Control Measure or Equipment Description (include location where appropriate)	Action Taken/Comments	Action Taken By (printed name & Z no.)

Page 1 of X

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 11: TRAINING DOCUMENTATION

Insert the appropriate documentation.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 12: MSGP (OR ACTIVE URL)

Either insert a copy of the most current Permit, or insert the URL address (see example below).

A copy of the 2015 MSGP is kept on file with the SWPPP in hard copy.

The active URL for the permit is https://www.epa.gov/npdes/final-2015-msgp-documents

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 13: THREATENED AND ENDANGERED SPECIES HABITAT MANAGEMENT PLAN FOR LOS ALAMOS NATIONAL LABORATORY

Insert the most current revision of the management plan for LANL.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 14: MSGP IPAC TRUST RESOURCES REPORT

Contact the EPC-CP MSGP Program Lead for this information formatted for insertion.

NOTE: The Permit requires this information. However, LANL EPC-ES has completed consultation with U.S. Fish and Wildlife Service. Letters of Consultation are contained in the NOI (see Attachment 1). Refer to Attachment 13 for the species habitat management plan.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 15: EPC-CP-PIP-2101, *NPDES MULTI-SECTOR GENERAL PERMIT*

Insert the appropriate plan into this SWPPP. Ensure the most current revision of this plan is inserted.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 16: EPC-CP-QP-023, *MSGP ROUTINE FACILITY INSPECTIONS*

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. Ensure the most current revision of this procedure is inserted.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 17: EPC-CP-QP-022, *MSGP CORRECTIVE ACTIONS*

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. Ensure the most current revision of this procedure is inserted.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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Insert Facility Name
MSGP Stormwater Pollution Prevention Plan
Document Reference Number
Revision X, Date

ATTACHMENT 18: EPC-CP-QP-064, *MSGP STORMWATER VISUAL ASSESSMENTS*

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. Ensure the most current revision of this procedure is inserted.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 19: **EPC-CP-QP-047, *INSPECTING STORMWATER RUNOFF SAMPLERS AND RETRIEVING SAMPLES FOR THE MSGP***

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. Ensure the most current revision of this procedure is inserted.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 20: EPC-CP-QP-2106, *PROCESSING MSGP STORMWATER SAMPLES*

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. Ensure the most current revision of this procedure is inserted.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 21: **EPC-DO-QP-101, *ENVIRONMENTAL REPORTING REQUIREMENTS FOR RELEASES OR EVENTS***

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. Ensure the most current revision of this procedure is inserted.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 22: EPC-CP-QP-007, *SPILL INVESTIGATIONS*

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. Ensure the most current revision of this procedure is inserted.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 23: **EPC-CP-QP-2110, *MSGP STORMWATER POLLUTION PREVENTION PLAN PREPARATION AND MAINTENANCE***

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. Ensure the most current revision of this procedure is inserted.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 24: LOCAL PROCEDURE

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. If this section is used, ensure the most current revision of the attached procedure is inserted. Delete section if not needed.

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)

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ATTACHMENT 25: LOCAL PROCEDURE

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. If this section is used, ensure the most current revision of the attached procedure is inserted. Delete section if not needed.

Attachment 2: MSGP SWPPP Review Guidance Checklist Example
(Page 1 of 11)

MSGP SWPPP Review Guidance Checklist

SWPPP Title

REQUIREMENT	YES/NO	NOTES
Stormwater Pollution Prevention Team		
Is the SWPPP being developed or updated by a qualified person?		
Does the SWPPP list Stormwater Pollution Prevention Team members (by name or title) and each individual's responsibilities?		
Is a copy of the SWPPP immediately available at the site and on-line?		
Contents of the SWPPP		
If the SWPPP refers to procedures or other documents, are copies of the relevant portions of these procedures or documents present in the SWPPP?		
Site Description		
Does the SWPPP include the following information?		
• Identify a description of the nature of the industrial activities at the site		
Provide a general location map (e.g., U.S. Geological Survey (USGS) quadrangle map) with enough detail to identify the location of the site and all receiving waters for industrial stormwater discharges.		
Site map showing the following:		
• Boundaries of the property and size of the property in acres		
• Location and extent of significant structures and impervious surfaces		
• Direction(s) of stormwater flow (using arrows)		
• Locations of **all** stormwater control measures		
• Locations of all receiving waters, including wetlands, in the immediate vicinity of the site. Indicate which water bodies are listed as impaired and which are identified as Tier 2, Tier 2.5, or Tier 3 waters (for LANL, none)		
• Locations of all stormwater conveyances including ditches, pipes, and swales		
• Locations of potential pollutant sources associated with each industrial activity (see Part 5.2.3.2) that could be exposed to rainfall or snowmelt and could be discharged from the site.		
• Locations where significant spills or leaks have occurred (see Part 5.2.3.3)		
• Location(s) of all stormwater monitoring points		
• Location of each stormwater inlet and outfall, with a unique identification code for each outfall (i.e., 001, 002, 003, etc.), indicating if you are treating one or more outfalls as "substantially identical" (see Parts 3.2.3, 5.2.5.3, and 6.1.1)		
• If applicable, location of the MS4 and where your stormwater discharges to it. ***NOTE:*** Although LANL does not currently have an MS4, EPA has published a draft permit.		
• Areas of designated critical habitat for endangered or threatened species		
• Locations of the following activities where such activities are exposed to precipitation:		

Attachment 2: *MSGP SWPPP Review Guidance Checklist* Example (cont.)

(Page 2 of 11)

MSGP SWPPP Review Guidance Checklist

REQUIREMENT	YES/NO	NOTES
- Fueling station(s)		
- Vehicle and equipment maintenance and/or cleaning area		
- Loading/unloading areas		
- Locations used for the treatment, storage, or disposal of wastes		
- Liquid storage tanks		
- Processing and storage areas		
- Immediate access roads used by carriers of raw materials, manufactured products, waste material, or by-products used or created by the site		
- Transfer areas for substances in bulk		
- Machinery		
- Locations and sources of run-on to the site from adjacent property that contains significant quantities of pollutants		
Potential Pollutant Sources		
Are areas described in the SWPPP where industrial material or activities are exposed to stormwater or from which allowable non-stormwater discharges originate? ***NOTE 1:*** *Industrial material or activities* include material handling equipment or activities; industrial machinery; raw material; industrial production and processes; and intermediate products; by-products; final products, and waste products. *Material handling activities* include the storage, loading and unloading, transportation, disposal or conveyance of any raw material, intermediate product, final product or waste product.		
Are all pollutants or pollutant constituents (e.g., zinc, sulfuric acid, cleaning solvents, motor oil, diesel, gasoline, brake fluid, etc.) associated with each activity identified? ***NOTE 2:*** The list must include all pollutants/materials that have been handled, treated, stored, or disposed and that have been exposed to stormwater in the three years prior to the date the SWPPP is prepared or amended.		
Are areas 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 identified in the SWPPP?		
Are all significant spills and leaks of oil or toxic or hazardous substances identified that **actually occurred** at exposed areas, or that drained to a stormwater conveyance, in the three years prior to the date the SWPPP was prepared or amended?		
Has an evaluation for the presence of unauthorized non-stormwater discharges (see Part 1.1.3) been done and does it include the following information?		
• Date of the evaluation		
• A description of the evaluation criteria used		
• A list of the outfall or onsite drainages points that were directly observed during the evaluation		

Attachment 2: *MSGP SWPPP Review Guidance Checklist* Example (cont.)

(Page 3 of 11)

MSGP SWPPP Review Guidance Checklist

REQUIREMENT	YES/NO	NOTES
• The action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), or documentation that a floor drain was sealed, re-routed to sanitary, or an NPDES permit application was submitted for an unauthorized cooling water discharge.		
Is there documentation of the location of any salt storage piles used for deicing or other commercial or industrial purposes?		
Is all stormwater discharge sampling data collected at the site during the precious permit term summarized in a narrative description? This may include data tables and figures.		
Control Measures to Meet Effluent Limits		
Does the SWPPP indicate whether the following control measure selection and design criteria were considered?		
• 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 which may be more effective than using control measures in isolation for minimizing pollutants in 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 the facility and infiltrating runoff onsite (including bio-retention cells, green roofs, and impervious 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		
• Using treatment interceptors (e.g., swirl separators and sand filters) may be appropriate in some instances to minimize the discharge of pollutants.		
Does the SWPPP indicate how the control measure addresses the potential pollutant sources?		
Are the selection and design considerations for control measures to meet the following non-numeric technology-based effluent limits (see Part 2.1.2) identified in the SWPPP?		
• **Minimize Exposure:** All manufacturing, processing and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) must have controls that minimize exposure to pollutant discharges by either locating these industrial materials and activities inside or protecting them with storm resistant coverings.		
- Use grading, berming or curbing to prevent runoff of contaminated flows and divert run-on away from these areas;		

Attachment 2: *MSGP SWPPP Review Guidance Checklist* Example (cont.)

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MSGP SWPPP Review Guidance Checklist

REQUIREMENT	YES/NO	NOTES
- 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.		
• **Good housekeeping** (all areas where potential pollutants are exposed to stormwater must be kept clean).		
- Sweep or vacuum at regular intervals or wash down the area and collect and/or treat and properly dispose of the wash down 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). Part 1.1.3 of the permit does not authorize dry weather discharges from dumpsters or roll off boxes.*		
* You may include extra information, or you may just "cut-and-paste" the effluent limits verbatim into the SWPPP w/out providing additional documentation.		
- Minimize the potential for waste, garbage, and floatable debris to be discharged by keeping exposed areas free of such materials.		
• **Maintenance** (All industrial equipment, systems and control measures must be maintained in effective operating condition in order to minimize pollutant discharges).		
Perform 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 maintain non-structural control measures (e.g., keep spill response supplies available, and personnel appropriately trained).		
- Inspect and maintain 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 reached two thirds (2/3) of the sump depth and keeping the debris surface at least six inches below the lowest outlet pipe.*		
Does the SWPPP contain language indicating immediate action must be taken to minimize pollutant discharges if control measures need routine maintenance?		
Is there language in the SWPPP indicating in instances where control measures need repair or replacement that the facility (or associated representatives thereof) must immediately take all		

Attachment 2: *MSGP SWPPP Review Guidance Checklist* Example (cont.)

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MSGP SWPPP Review Guidance Checklist

REQUIREMENT	YES/NO	NOTES
reasonable steps (see Part 4.3.1 for definition) 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 timeframes established in Part 4.3 for corrective actions, i.e., within 14 days or, if that is infeasible, within 45 days.		
Is there language in the SWPPP indicating corrective action must be taken (in accordance with Part 4.0) if a control measure was never installed, was installed incorrectly or not in accordance with Parts 2 and/or 8, or isn't being properly operated or maintained?		
• **Spill Prevention and Response** - The potential for leaks, spills, and other release must be minimized by the development of plans for effective response to such spills if or when they occur in order to minimize pollutant discharges.		
- 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 use of secondary containment and barriers between material storage and traffic areas.		
- Develop training on the procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases as soon as possible.		
- Keep spill kits on-site, located near areas where spills may occur or where a rapid response can be made		
- 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 in accordance with the above referenced requirements as soon as you have knowledge of the discharge.		
- In the event of a spill, does the SWPPP indicate where the contact information is so that it is readily accessible and available?		
• **Erosion and Sediment Controls**		
- Does the SWPPP identify how exposed soils will be stabilized to minimize pollutant discharges?		
- Does the SWPPP identify flow velocity dissipation devices placed at discharge locations to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points?		
- Does the SWPPP identify structural and non-structural control measure to minimize the discharge of sediment?		

Attachment 2: *MSGP SWPPP Review Guidance Checklist* Example (cont.)
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MSGP SWPPP Review Guidance Checklist

REQUIREMENT	YES/NO	NOTES
- If polymers and/or other chemical treatments are used for dust control or stabilization, does the SWPPP must identify the polymers and/or chemicals used and the purpose?		
• **Management of Runoff** - Does the SWPPP identify how stormwater runoff is diverted, infiltrated, reused, contained, or otherwise reduced to minimize pollutants in the discharge?		
• **Salt Storage Piles or Piles Containing Salt** - Does the SWPPP identify how salt piles are enclosed or covered?		
- Are controls in place to minimize exposure to stormwater resulting from adding to or removing materials from the salt pile?		
• **Non-Stormwater Discharges** - Does the SWPPP indicate that personnel will evaluate the site for non-stormwater discharges not explicitly authorized in Part 1.1.3 or covered by another NPDES permit and eliminate the discharge?)		
• **Dust Generation and Vehicle Tracking of Industrial Materials** - Does the SWPPP indicate dust generation and off-site tracking of raw, final, or waste materials must be minimized in order to minimize pollutant discharges?)		
Control Measures to Meet Numeric Effluent Limitations Guidelines-Based Limits (see Part 2.1.3 and Part 8)		
Are effluent limitations identified for the Sector D facility (Asphalt Paving) (see Part 8.D.4)?		
Are effluent limitations identified for the Sector A facility (Timber Products) (see Part 8.A.7)?		
Control Measures to Meet Water Quality Based Effluent Limits (see Part 2.2 and Part 9.6.2)		
Are the benchmark values (i.e., the Lowest New Mexico Water Quality Standard) listed in MSGP Section 9.6.2.1 identified in the SWPPP?		
Schedules and Procedures - Control Measures		
Does the SWPPP contain a schedule or convention used for determining when pickup or disposal of waste materials occurs?		
Are preventative maintenance procedures (including regular inspections, testing, maintenance and repair) for all control measures included in the SWPPP to avoid situations that may result in leaks, spills, and other releases?		
Are backup practices in place should a runoff event occur while a control measure is off line?		
Is there a schedule or frequency for maintaining all control measures?		
Are procedures included in the SWPPP for preventing and responding to spills and leaks, including notification procedures?		
Are control measures for material handling and storage identified?		
Are clean-up equipment, procedures and spill logs (i.e., reportable and non-reportable spill reports and the MSGP Corrective Action Reporting database) identified?		
Schedules and Procedures - Employee Training		
Are the following employees identified as requiring training?		

Attachment 2: *MSGP SWPPP Review Guidance Checklist* Example (cont.)

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MSGP SWPPP Review Guidance Checklist

REQUIREMENT	YES/NO	NOTES
• 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		
• Personnel who are responsible for taking and documenting corrective actions.		
Are the following identified as elements of required training?		
• 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		
• When and how to conduct inspections, record applicable findings, and take corrective actions		
Are the following elements of the training plan documented in the SWPPP?		
• Content of the training		
• Frequency/schedule of training		
Are records of completed training kept in the SWPPP?		
Schedules and Procedures - Inspections and Assessments		
Is the procedure identified for conducting routine facility inspections?		
Is the procedure identified for conducting visual assessments?		
For each type of inspection performed (i.e., routine inspection and visual assessments) does the SWPPP identify the person (s) or positions of person(s) responsible for the inspection?		
Does the SWPPP contain an alternative schedule for conducting visual assessments in climates with irregular stormwater runoff discharges (see Part 3.2.3)?		
Are specific items to be covered by the inspection, including schedules for specific outfalls identified in the SWPPP?		
Is the facility claiming an exception as an inactive and unstaffed site? If yes, the facility must include information in the SWPPP that supports this claim as required by Parts 3.1.1, 3.2.3, 6.2.1.3 and 6.2.4.2. That is, the SWPPP must contain a signed certification indicating that there are no industrial materials or activities exposed to precipitation at the site and the NOI must be modified and re-certified.		
Schedules and Procedures - Monitoring		
Does the SWPPP contain documentation of procedures used to conduct benchmark, effluent limitations guidelines and impaired waters monitoring?		
Are locations where samples are collected, including any determination that two or more outfalls are substantially identical, in the SWPPPP?		
Are parameters for sampling and the frequency of sampling for each parameter listed?		

Attachment 2: *MSGP SWPPP Review Guidance Checklist* Example (cont.)

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MSGP SWPPP Review Guidance Checklist

REQUIREMENT	YES/NO	NOTES
Does the SWPPP contain schedules for monitoring at the facility, including a schedule for alternate monitoring periods for climates with irregular stormwater runoff (see Part 6.1.6)?		
Are numeric control values (benchmark, effluent limitations guidelines, water quality standards) applicable to discharges from each outfall identified?		
Does the SWPPP list procedures for gathering storm event data (see Part 6.1)?		
Schedules and Procedures - Substantially Identical Outfalls (SIOs)		
Does the SWPPP contain the following relative to SIOs?		
• 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 material 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%		
• Justification as to why the outfalls are expected to discharge substantially identical effluents		
Do Substantially Identical Outfalls identified on the SWPPP map match those identified in MDMRs?		
Is there language indicating quarterly visual assessments of substantially identical outfalls will be performed on a rotating basis throughout the permit term?		
Is there language indicating quarterly visual assessment of the discharge at one SIO will also apply to the other SIOs?		
Corrective Action Documentation - If an event triggering corrective action is associated with an SIO, did the review of the need for action encompass all related substantially identical outfalls?		
Documentation		
Does the SWPPP contain the following up-to-date and complete inspection, monitoring, and certification records?		
• Copy of NOI submitted to EPA along with any correspondence exchanged between the facility and EPA specific to coverage under this permit.		
• Copy of the acknowledgement you receive from the EPA assigning your NPDES ID.		
• Copy of the MSGP 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).		

Attachment 2: *MSGP SWPPP Review Guidance Checklist* Example (cont.)

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MSGP SWPPP Review Guidance Checklist

REQUIREMENT	YES/NO	NOTES
• 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 (see Part 4.4)		
• Documentation of any benchmark exceedances and the type of response to the exceedance employed including the following:		
- 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)		
• Documentation supporting that 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 Endangered Species Act (see Part 1.1.4.5).		
• Documentation supporting the determination that stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities meet one of the eligibility criteria for historic property preservation (Criterion A, B, C or D) (see Part 1.1.4.6).		
• All Discharge Monitoring Reports and Annual Reports		
• Support for claim that facility has changed its status from active to inactive and is unstaffed with respect to the requirements to conduct routine facility inspections, quarterly visual assessments, benchmark monitoring, and/or impaired waters monitoring.		
Is the SWPPP signed and dated by a duly authorized representative (per Part B.11)?		
Is the Annual Report signed by a duly authorized representative (per Part B.11)?		
SWPPP Modifications		
Where a corrective action triggers a change in any of the control measures or procedures, has the SWPPP been updated within 14 calendar days of completing the corrective action (see Part 4.4)?		
Are SWPPP modifications signed and dated by a duly authorized representative?		
Has the SWPPP been reviewed and does documentation exist as to the modifications made or why none were needed under the following circumstances?		

Attachment 2: *MSGP SWPPP Review Guidance Checklist* Example (cont.)

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MSGP SWPPP Review Guidance Checklist

REQUIREMENT	YES/NO	NOTES
• 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 the sector specific requirements.		
• The 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).		
• Construction or a change in design, operation, or maintenance at your facility that significantly changes the nature of pollutants discharged in stormwater from the 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., the sum of quarterly sample results to date is more than four times the benchmark level) this is considered a benchmark exceedance.		
Public Accessibility of SWPPP		
Is your SWPPP uploaded to the URL provided in the NOI?		
Are subsequent SWPPP modifications (updates), records and all other reporting elements required for the previous year updated no later than 45 days after conducting the final routine facility inspection for the year?		
If you did not upload your SWPPPs to a URL, was the following information provided in the NOI and documented in the SWPPP?		
• 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 employed 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. If polymers and/or other chemical treatments are used as controls, these must be identified and the purpose explained.		
• The schedule for good housekeeping, maintenance, and schedule for all inspections required in Part 3.		

Attachment 2: *MSGP SWPPP Review Guidance Checklist* Example (cont.)

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MSGP SWPPP Review Guidance Checklist

REQUIREMENT	YES/NO	NOTES
Are modifications to the SWPPP information required in the four bullets above submitted on a "Change NOI" form no later than 45 days after conducting the final routine facility inspection for the year?		
Corrective Actions		
Are corrective actions documented within 24 hours of becoming aware of such condition?		
Is the condition triggering the need for the corrective action identified?		
Is the date the corrective action was identified captured?		
Was immediate action taken to minimize or prevent the discharge of pollutants?		
In the case of leaks and spills, were response actions, date/time of clean up, notification, etc. documented?		

ATTACHMENT 24: WFO-IWD-00016, *SPILL RESPONSE AND CLEAN UP IN WEAPONS FACILITIES OPERATIONS (WFO) AREAS*

WEAPONS FACILITIES OPERATIONS
LOS ALAMOS NATIONAL LABORATORY

Document Number:	WFO-IWD-0016
Revision:	G

Spill Response and Clean Up in Weapons Facilities Operations (WFO) Areas

Effective Date: 10/28/2020			**Expiration Date** *(Maximum 3 years)*: 10/28/2023
Hazard Category	☐ High/Complex	☒ Moderate	☐ Low
Standing IWD?	☒ Yes *(one Pre-Job Brief. If High/Complex hazard, Pre-Job brief required for each evolution)*		☐ No
R&D IWDs Only **Annual REVIEW DUE DATE**		**DATE ANNUAL REVIEW CONDUCTED:**	

Reviewed and Approved for Use By:

	Printed Name	Z#	Org	Signature	Date
Person in Charge (PIC)	Kelkenny Bileen	178009	EPC-CP	Kelkenny Bileen	
Peer Reviewer	Bruce Dahlquist	234968	OSH-DS	Bruce Dahlquist	9/28/2020
Responsible Line Manager	Taunia S. Valkenburg	145666	EPC-CP		10/26/2020
Operations Manager	John Branch	232120	WFO-HE	JOHN BRANCH (Affiliate)	Digitally signed by JOHN BRANCH (Affiliate) Date: 2020.10.27 12:03:20 -06'00'

The Facility Operations Director (FOD) approval indicates that the work is appropriate to be conducted in the facility, the work is bounded by the facility authorization basis, that facility safety basis, aggregate hazards, and co-located hazards will be managed, and that the facility entry, training and coordination requirements are fully captured within this document. Unless otherwise indicated, approval indicates work release (i.e., no signature required on Part 3).

☐ If Checked, FOD Signature is Required on Part 3

	Printed Name	Z#	Org	Signature	Date
Facility Operations Director (FOD)	Derek Clark	332752	WFO-DO	PETER RICE (Affiliate)	Digitally signed by PETER RICE (Affiliate) Date: 2020.10.28 09:14:19 -06'00'

For Document Control Team Reference:
☒ USQ *(applicable to WETF)* ☒ USI *(applicable to DARHT)* ☐ N/A

Users are responsible for verifying that they are working to the most current revision of a document

Spill Response and Clean Up in Weapons Facilities Operations (WFO) Areas

Document No.: WFO-IWD-0016
Revision: G

Effective Date: 10/28/2020

Revision	Effective Date	Action	Description
A (0)	11/19/2008	New Procedure	Initial release.
A	11/20/2014	EXT1	60-day extension to allow time to review and revise.
B	02/25/2015	Minor Revision	Minor revision. Added TA-49 to list of applicable buildings, updated references. Renumbered document from IWD-WFO-99-999-999-0016 to WFO-IWD-0016 to reflect current WFO numbering convention. This document supersedes IWD-WFO-99-999-999-0016, Rev A; this is not a new document but a revision to an existing document; revision starts at B as document type did not change.
C	12/21/2016	Minor Revision	Minor revision: • Updated approvals on cover page • Updated SMEs and Alternate PICs on Page 6 • Added Course # 22956 for HAZCOM Training on Page 7 through 9 • Updated reference documents on Page 13 • Updated POC from Brian Watkins to Thomas Sisneros on Pages 13 and 14. Replaced 2102 forms with 2101 forms.
C	11/30/2017	EXT1	60-day extension to allow time to review and revise.
D	02/28/2018	Major Revision	Major revision. Updated cover page format. Updated approvals on cover page. Added Note in Section 1.3 to clarify that EPC-CP must be notified of all spills (inside or outside). Replaced 2101 and 2103 forms. Added 2102 form.
D	05/22/2018	RAC	RAC. Added new page 47 with additional worker signature (Paul Gonzales, Z# 169004) to Form 2103, Part 3 Validation and Work Release.
D	10/01/2018	EXT1	30-day extension to review and revise.
E	10/15/2018	Minor Revision	Minor revision. Inserted 2101s for WETF, DARHT and 2102s for WFO BOP with updated expiration dates for CY 2019. Updated acronym EO to read SEO throughout. Updated references to organization ENV-CP to EPC-CP throughout.
E	09/27/2019	EXT1	30-day extension until 10/30/2019 requested to allow time for final signatures and USQ/USI reviews for Revision F.
F	10/02/2019	Major Revision	Updated acronym SEO to read EOSC and updated phone number from 667-6211 to 667-2400 in Sections 1.1, 1.2, 1.3 and 1.6. Attachment A: Removed references to WFO-PLAN-035 and replaced with WFO-BEP-378. Removed references to WFO-PRO-FI-1084 and WFO-PRO-FI-1086 and replaced with WFO-AP-263.
F	09/28/2020	EXT1	Extension to allow time to review and revise.
G	10/28/2020	Major Revision	Updated approvals on cover page. Updated Application of Micro Blaze work steps. Inserted Opening and Securing of Waste Containers work step. Inserted 2101s for WETF, DARHT and 2102s for WFO BOP with updated expiration dates for CY 2021.

Spill Response and Clean Up in Weapons Facilities Operations (WFO) Areas

Document No.: WFO-IWD-0016
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Effective Date: 10/28/2020

Table of Contents

Spill Response and Clean Up in Weapons Facilities Operations (WFO) Areas

Document No.: WFO-IWD-0016
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1.0 Introduction

1.1 Purpose

This procedure describes clean up of spills following notification to the Duty Officer. The objective of this task is spill response and the cleanup of spills deemed a non-emergency by EOSC or EPC-CP.

1.2 Scope

This IWD is to be implemented for the clean up of spills following notification to the Duty Officer. The objective of this task is spill response and the cleanup of spills deemed a non-emergency by EOSC or EPC-CP. These spills could occur at or within any WFO-FOD facility including TAs,6, 8, -9, 11, 14, 15, 16, 22, 36, 37, 39, 40, and 49. Depending on the location of the spill, additional contaminants such as heavy metals, beryllium, trace amounts of or nonhazardous amounts of HE or DU could also exist in the soil and therefore the waste stream. WFO's waste management coordinators will make waste determinations and manage the wastes per P409, *Waste Management*.

Note: In the event that an item is encountered within an HE area that cannot be immediately identified as normal firing site debris work shall be paused and an explosives SME will be contacted to identify the item in question.

Note: In active HE areas a person with site specific knowledge will be consulted to identify any hazards prior to the start of work"

1.3 Applicability

This document applies to WFO workers at TAs,6, 8, 9, 11, 14, 15, 16, 22, 36, 37, 39, 40, and 49.who are performing spill clean up activities as described in 1.2 Scope. There are two types of spills:

- simple spills (incidental release), which can be cleaned up by knowledgeable chemical workers (workers with knowledge of the chemical, appropriate training, materials and PPE needed to clean the spill). A simple spill shall be defined as one that:
  1. Does not spread rapidly
  2. Does not endanger people or property (except by direct contact)
  3. Does not endanger the environment
  4. Does not involve fire or an explosive condition or the potential for such. All others are complex spills.
- complex spills (significant spills), which require outside assistance (Emergency Operations Support Center(EOSC)).

NOTE: All spills (both outside or indoors) must be reported to EPC-CP to ensure each incident is evaluated, documented and remediated. EPC-CP is responsible for fulfilling any required external notifications associated with the release. Contact the EPC-CP Spills Pager (664-7722) to promptly notify EPC-CP of any spills. Contact EOSC (667-2400) in the event of an emergency.

1.4 Definitions and Acronyms

None.

1.5 Hazard Analysis

Hazard Analysis (HA) Method Used: ☐ Brainstorming ☒ Other:
List Names of HA Team (Attach sheet if necessary): DESHF-WFO Industrial Hygiene Team Date HA Performed: 11/03/2014.

1.6 Site Emergency Contacts

- Weapons Duty Officer: 664-2926
- Trit-HE Duty Operation Page; 664-6679
- WETF On-Call pager: 664-3426
- EOSC 667-2400
- EPC-CP Spills Pager:664-7722

2.0 Procedural Steps

See procedural steps, hazards, and controls in Attachment A.

3.0 Forms

Number	Title
2100	Integrated Work Document (IWD) Part 1, Activity Specific Information
2101	Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls, Non-Tenant Activity Form
2102	Integrated Work Document (IWD) Part 2, FOD Requirements and Approval for Entry and Area Hazards and Controls, Tenant Activity Form
2103	Integrated Work Document (IWD) Part 3, Validation and Work Release
2104	Integrated Work Document (IWD) Part 4, Post Job Review

4.0 Attachments

Forms 2100, 2101, 2102, 2103, 2104.

Attachment A
Integrated Work Document (IWD) Part 1, Activity Specific Information

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 Personal Protective Equipment [PPE], Tamper Indicating Devices [TIDs], alarms, safes, recycle, waste minimization).	**Reference Documents** List permits, operating manuals, security plans, and other reference procedures.	**Training** List training and qualification requirements. (P300, Integrated Work Management, Section 6.1)
Spill Response				
Assess site for hazards	Previously unknown hazards or changed conditions	• Perform windshield survey of the area • Interview workers knowledgeable of the spill • Identify hazards • Determine source, type and quantity of spilled material • Walk down site prior to activity • Communicate hazards to other workers	WFO-BEP-378, *WFO Building Emergency Plan*	HAZCOM, Course 22956 Item # 27205, *WFO (FOD-3 Building Emergency Plan*
	Slips, trips and falls	• Avoid stepping in spilled material • Be aware of footing and surroundings at all times. Identify hazards prior to initiating work. • Use caution and be observant while moving in areas with potential slip, trip or fall hazards. • Implement good housekeeping practices. • No open-toed shoes	None	None
Control site Access	Previously unknown hazards or changed conditions	• Administratively control area • Barriers: tape, rope	None	HAZCOM, Course 22956

Attachment A
Integrated Work Document (IWD) Part 1 Activity Specific Information (cont'd)

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 Personal Protective Equipment [PPE], Tamper Indicating Devices [TIDs], alarms, safes, recycle, waste minimization).	**Reference Documents** List permits, operating manuals, security plans, and other reference procedures.	**Training** List training and qualification requirements. (P300, Integrated Work Management, Section 6.1)
Deploy Spill control measures (loose absorbents, pads and booms)	Incompatible materials	• Determine type of spilled material • Select proper spill control material	• Manufacturer instructions • MSDS	HAZCOM, Course 22956
	Inhalation hazards	• Minimize time in the vicinity of the spilled material • Position personnel up wind of plume	• Manufacturer instructions • MSDS	HAZCOM, Course 22956
	Contact with spilled material	• Proper PPE **Hands:** Compatible gloves. **Eyes:** Safety glasses with side shields for all operations **Body:** Long pants and sleeved shirt • When caustics are present, ensure the availability of eyewash station within 100 feet or 10 seconds with unobstructed access	• Consult with the WFO Industrial Hygienist (IH), • MSDS	HAZCOM, Course 22956

Attachment A
Integrated Work Document (IWD) Part 1 Activity Specific Information (cont'd)

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 Personal Protective Equipment [PPE], Tamper Indicating Devices [TIDs], alarms, safes, recycle, waste minimization).	**Reference Documents** List permits, operating manuals, security plans, and other reference procedures.	**Training** List training and qualification requirements. (P300, Integrated Work Management, Section 6.1)
Clean up of absorbent material (loose absorbents, pads and booms)	Inhalation hazards	• Minimize generation of dust or splash • Minimize time in the vicinity of the spilled material • Position personnel up wind of spill	• Manufacturer instructions • MSDS	HAZCOM, Course 22956
	Contact with spilled material	• Proper PPE **Hands:** Compatible gloves. **Eyes:** Safety glasses with side shields for all operations. spills **Body:** Long pants and sleeved shirt • When caustics are present, ensure the availability of eyewash station within 100 feet or 10 seconds with unobstructed access	• Consult with the WFO Industrial Hygienist (IH), • MSDS	HAZCOM, Course 22956
Application of Micro Blaze Emergency Liquid Spill Control.	Contact with Micro Blaze Be upwind when applied	• Proper PPE: • **Eyes:** Safety glasses with side shields for all operations • Do not direct spray towards personnel • Instruct personnel to be upwind when Micro Blaze is applied.	• Manufacturer instructions • MSDS	HAZCOM, Course 22956
	Low pressure (<100 psi)	• Follow sprayer manufacturers instructions	• Manufacturer instructions	None
	Slippery surfaces (when applied to asphalt or concrete)	• Avoid stepping in treated area • If necessary, spray treated area with clean water after 15 minutes	• None	None

Attachment A
Integrated Work Document (IWD) Part 1 Activity Specific Information (cont'd)

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 Personal Protective Equipment [PPE], Tamper Indicating Devices [TIDs], alarms, safes, recycle, waste minimization).	**Reference Documents** List permits, operating manuals, security plans, and other reference procedures.	**Training** List training and qualification requirements. (P300, Integrated Work Management, Section 6.1)
Recharge of sprayer with Micro Blaze Emergency Liquid Spill Control	Contact with Micro Blaze Compressed Air: Low pressure (<100 psi)	• Proper PPE Eyes: Safety glasses with side shields for all operations. • Follow manufactures instructions • Proper PPE: **Eyes:** Safety glasses with side shields for all operations • Hand tighten nozzle assembly onto canister • Do not charge sprayer over 100 psi	• MSDS • Manufacturer Instructions	HAZCOM, Course 22956 None

Attachment A
Integrated Work Document (IWD) Part 1 Activity Specific Information (cont'd)

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 Personal Protective Equipment [PPE], Tamper Indicating Devices [TIDs], alarms, safes, recycle, waste minimization).	**Reference Documents** List permits, operating manuals, security plans, and other reference procedures.	**Training** List training and qualification requirements. (P300, Integrated Work Management, Section 6.1)
Excavation of Contaminated Soil				
Excavation of soil stained with spilled material.	Excavation hazards associated with underground utilities: electrocution, explosion	• Excavation Permit as required	• P101-17 Excavation/Fill /Soil Disturbance	None
	Use of hand tools: Pinch points, mashing fingers and/or toes	• All hand tools will be inspected for integrity before use. Personnel will be instructed to use hand tools in the intended manner. • Proper PPE: **Eyes:** Safety glasses with side shields **Hands:** Work gloves **Foot:** safety shoes	None	None
	Use of Heavy Equipment: Workers struck or crushed by equipment, Rollover	• Only qualified equipment operators are allowed to operate heavy equipment. • Equipment shall be inspected daily or before each use • Heavy equipment shall be inspected for engineering controls • Persons on the ground are instructed to get and maintain eye contact with heavy equipment operators with pre-established hand signals.	• Subparts O of 29 CFR 1926 and 29 CFR 1910	None

Attachment A
Integrated Work Document (IWD) Part 1 Activity Specific Information (cont'd)

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 Personal Protective Equipment [PPE], Tamper Indicating Devices [TIDs], alarms, safes, recycle, waste minimization).	**Reference Documents** List permits, operating manuals, security plans, and other reference procedures.	**Training** List training and qualification requirements. (P300, Integrated Work Management, Section 6.1)
Excavation of soil stained with spilled material., **cont'd**	Potential for historical site contaminants, SWMUs: DU, HE, Beryllium, Lead	• Signs and postings • Consult with Industrial Hygienist (IH), RCTs and HE Operations Team Leader • Consult EPC-CP and WES-DO • Have soil surveyed by an RCT prior to and as excavated, as necessary. • Additional PPE as required by IH and RCT ***Note:*** In the event that an item is encountered within an HE area that cannot be immediately identified as normal firing site debris work shall be paused and an explosives SME will be contacted to identify the item in question. ***Note:*** In active HE areas a person with site specific knowledge will be consulted to identify any hazards prior to the start of work.	• WFO-AP-263, *WFO Access Requirements for Knowledgeable Persons* • P 101-17 Excavation/Fill/ Soil Disturbance • Decision Support Application (DSA)	
	Heavy Lifting.	• Proper lifting techniques • Lift only what you are capable of but not more than 50 pounds. • Use two or more people to lift heavy or awkward loads • Position load to be lifted directly in front of body. Bend knees and grasp load underneath with both hands and raise load using legs (not back). • Do not lift and twist	None	None

Attachment A
Integrated Work Document (IWD) Part 1 Activity Specific Information (cont'd)

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 Personal Protective Equipment [PPE], Tamper Indicating Devices [TIDs], alarms, safes, recycle, waste minimization).	**Reference Documents** List permits, operating manuals, security plans, and other reference procedures.	**Training** List training and qualification requirements. (P300, Integrated Work Management, Section 6.1)
Containerize wastes				
Containerize waste absorbent material, excavated soil and other waste	Pinch points, mashing fingers and/or toes	• Keep hands away from pinch points. • Proper PPE: **Eyes:** Safety glasses with side shields **Hands:** Work gloves **Foot:** safety shoes	None	None
	Use of hand tools: Pinch points, mashing fingers and/or toes	• All hand tools will be inspected for integrity before use. Personnel will be instructed to use hand tools in the intended manner. • Proper PPE: **Eyes:** Safety glasses with side shields **Hands:** Work gloves **Foot:** safety shoes	None	None
	Heavy Lifting.	• Proper lifting techniques • Lift only what you are capable of but not more than 50 pounds. • Use two or more people to lift heavy or awkward loads • Position load to be lifted directly in front of body. Bend knees and grasp load underneath with both hands and raise load using legs (not back). • Do not lift and twist	None	None
	Incorrect waste determination and management	• WMC determines waste type • WMC will label waste container • WMC will manage wastes	P-409 Waste Management	Waste Generator Overview

Attachment A
Integrated Work Document (IWD) Part 1 Activity Specific Information (cont'd)

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 Personal Protective Equipment [PPE], Tamper Indicating Devices [TIDs], alarms, safes, recycle, waste minimization).	**Reference Documents** List permits, operating manuals, security plans, and other reference procedures.	**Training** List training and qualification requirements. (P300, Integrated Work Management, Section 6.1)
Opening and Securing of Waste Containers				
	Do not use or open drums with apparent bulging; even empty drums may be pressurized.	• Inspect before opening; even empty drums may be pressurized.	P-409 Waste Management	Waste Generator Overview
Transport fo Waste Containers				
Waste Management Coordinator (WMC) transports waste containers to designated waste storage area	Operation of lift gate: Pinch points, mashing fingers and/or toes	• Advise nearby workers that the lift gate is being operated • Kept clear of lift gate swing radius • Proper PPE: **Eyes:** Safety glasses with side shields **Hands:** Work gloves	Manufacturer instructions	None
	Heavy Lifting	• Proper lifting techniques • Lift only what you are capable of but not more than 50 pounds. • Use two or more people to lift heavy or awkward loads • Position load to be lifted directly in front of body. Bend knees and grasp load underneath with both hands and raise load using legs (not back). • Do not lift and twist	None	None
	Shifting loads	• Secure loads in truck bed	None	None

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant)

Form 2101

Los Alamos NATIONAL LABORATORY

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.: WFO-IWD-0016 Revision #: G

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
3	16	205	100, 100A, 101, 102, 103, 104, 104A, 106, 110	
FOD Designated Facility Point-of-Contact	Name: Don Hyatt Mel Ortiz Byron Denny Jamie Vongphachan	Phone: 7-7619 7-5419 5-5339 4-0842	Pager: 4-6314 4-3070 4-6586 4-6284	Email: hyatt@lanl.gov mortiz@lanl.gov byron@lanl.gov jvongphachan@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)
WTEF is a Category II Nuclear Facility. Check in with the WETF Duty Operator, 7-2060, 16-205-110, prior to start of work. The WETF work control process must be followed. Security Requirements: No 2-way pagers or personal cell phones. Blackberries are allowed except in the "Closed Area". Government issued cell phones must have the battery removed. "Q" clearance and be complete on all WETF and Lab-Wide requirements for WETF access unless escorted. "L" clearance and Un-Cleared personnel must be escorted at all times.

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Avoid using the same Part 2, Form 2101 for multiple facilities. Ensure that work area hazards, specific to the facility or work location are identified and controlled. 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, Integrated Work Management, Section F.1)
☐ No Work Area Hazards				

Form 2101 (12/17) Page 1

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd)

ES/HS&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, Integrated Work Management, Section 6.1)
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			

Form 2101 (12/17) Page 2

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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 (P 300, Integrated Work Management, Section 6.1)
Security Requirements **Specify:**	☒ Yes ☐ No	G or L Clearance or Escorted	P202-1 Security Areas, Property Protection Areas, and General Access Areas	U-Train 1425 Annual Security Refresher
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] 12572 9/2/21

Date Approval Expires: **September 30, 2021**

Form 2101 (12/17) Page 3

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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.: WFO-IWD-0016 Revision #: G

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
3	16	205	112, 114, 115, 116, 100B, 120, 122, 124, 126	

FOD Designated Facility Point-of-Contact	Name	Phone	Pager	Email
	Don Hyatt	7-7519	4-6314	hyatt@lanl.gov
	Mel Ortiz	7-5419	4-5070	mortiz@lanl.gov
	Byron Denny	5-5339	4-6586	byron@lanl.gov
	Jamie Vongphachan	4-0842	4-6254	jvongphachan@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)
WTEF is a Category II Nuclear Facility. Check in with the WETF Duty Operator, 7-2083, 16-205-110, prior to start of work. The WETF work control process must be followed. Security Requirements: No 2-way pagers or personal cell phones. Blackberries are allowed except in the "Closed Area". Government issued cell phones must have the battery removed. "Q" clearance and be complete on all WETF and Lab-Wide requirements for WETF access unless escorted. "L" clearance and Un-Cleared personnel must be escorted at all times.

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Avoid using the same Part 2, Form 2101 for multiple facilities. Ensure that work area hazards, specific to the facility or work location are identified and controlled. 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 (P330, Integrated Work Management, Section 6.1)
☐ No Work Area Hazards				

Form 2101 (12/17) Page 1

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

ES&H/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, Integrated Work Management, Section 6.1)
Ionizing Radiation Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices. **Specify Hazard:** Work in posted radiological areas, work with radioactive materials, or work on or near radiation producing devices.	☒ Yes ☐ No	Facility and job-specific pre-job briefing, facility postings	Job specific RWPs and work package instructions and WETF-AP-FRPR-34 Facility Radiation Protection Requirements Weapons Engineering Tritium Facility	RAD Worker II and Facility Access Training unless escorted
Worker Exposure Working near non-ionizing radiation, beryllium, noise, chemicals, hazardous biological materials, lead, asbestos, temperature/humidity extremes, or high explosives. **Specify Hazards: Nitrogren/Beryllium in Room 120 cabinet and Room 126 drums**	☒ Yes ☐ No	Facility and job-specific pre-job briefing. Oxygen monitors are present throughout areas with potential for low oxygen concentration • If accessing the Be cabinet in room 120, contact IH for Beryllium evaluation and controls. • If accessing the drums or handling beryllium articles or items from the drums in room 126, contact IH for evaluation and controls.	P101-5 Cryogens P101-21 Chronic Beryllium Disease Prevention Program	Facility Briefing by Duty Operator Beryllium Awareness Training Course 28340
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			

Form 2301 (12/17) Page 2

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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, Integrated Work Management, Section 6.1)
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	Q or L Clearance or Escorted	P202-1 Security Areas, Property Protection Areas, and General Access Areas	U-Train 1425 Annual Security Refresher
Other Hazards **Specify:**	☐ Yes ☒ No			

I have verified that the hazards identified above adequately identify the area hazards and that the IWD process has been applied appropriately.

FOD or Representative (Signature/Z #/Date) **Approval Required** [signature] 9/3/24

Date Approval Expires: **September 30, 2021**

Form 2101 (12/17)

Page 3

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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.: WFO-IWD-0016 Revision #: G

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
3	16	265	UPS and Equipment Rooms	Roof
FOD Designated Facility Point-of-Contact	Name: Don Hyatt Mel Ortiz Byron Domry Jamie Vongphachan	Phone: 7-7510 7-0419 5-5330 4-0842	Pager: 4-6314 4-3070 4-6588 4-6254	Email: hyatt@lanl.gov mortiz@lanl.gov byron@lanl.gov jvongphachan@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)
WETF is a Category II Nuclear Facility. Check in with the WETF Duty Operator, 7-2060, 16-205-110, prior to start of work. The WETF work control process must be followed. Security Requirements: No 2-way pagers or personal cell phones. Blackberries are allowed except in the "Closed Area". Government issued cell phones must have the battery removed. "Q" / "L" clearance required for access into UPS and Equipment Rooms. Un-Cleared personnel must be escorted at all times.

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Avoid using the same Part 2, Form 2101 for multiple facilities. Ensure that work area hazards, specific to the facility or work location are identified and controlled. 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 (E300, Integrated Work Management, Section 6.1)
☐ No Work Area Hazards				

Form 2101 (12/17) Page 1

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

ES&H/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, Integrated Work Management, Section 8.1)
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:** Potential for low oxygen concentration due to liquid nitrogen system.	☒ Yes ☐ No	Facility and job-specific pre-job briefing oxygen monitors are present throughout areas with potential for low oxygen concentration	P101-5 Cryogens	Facility Briefing by Duty Operator
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			

Form 2101 (12/17) Page 2

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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 (E300, Integrated Work Management, Section 5.1)
Security Requirements **Specify:**	☒ Yes ☐ No	Q or L Clearance or Escorted	P202-1 Security Areas, Property Protection Areas, and General Access Areas	U-Train 1425 Annual Security Refresher
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 Date Approval Expires: **September 30, 2021**				

Form 2101 (12/17) Page 3

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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: WFO-IWD-0016 Revision #: G

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
3	16	205/450	Exterior Areas	
FOD Designated Facility Point-of-Contact	Name	Phone	Pager	Email
	Don Hyatt	7-7510	4-6314	hyatt@lanl.gov
	Mel Ortiz	7-5419	4-3070	mortiz@lanl.gov
	Byron Denny	5-5339	4-6686	byron@lanl.gov
	Jenne Vongphachan	4-0842	4-6254	jvongphachan@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)
WTEF is a Category II Nuclear Facility. Check in with the WETF Duty Operator, 7-2060. 16-205-110, prior to start of work. The WETF work control process must be followed. Security Requirements: No 2-way pagers or personal cell phones. Blackberries are allowed except in the "Closed Area". Government issued cell phones must have the battery removed. "Q" / "L" clearance required for all exterior areas of WETF. Un-Cleared personnel must be escorted at all times.

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Avoid using the same Part 2, Form 2101 for multiple facilities. Ensure that work area hazards, specific to the facility or work location are identified and controlled. 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, Integrated Work Management, Section 6.1)
☐ No Work Area Hazards				

Form 2101 (12/17) Page 1

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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 (P200, Integrated Work Management, Section 6.1)
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			

Form 2101 (12/17) Page 2

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd)

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, Integrated Work Management, Section C.1)
Security Requirements Specify:	☒ Yes ☐ No	G or L Clearance or Escorted	P202-1 Security Areas, Property Protection Areas, and General Access Areas	U-Train 1425 Annual Security Refresher
Other Hazards Specify:	☐ Yes ☒ No			
I have verified that the hazards identified above adequately identify the area hazards and that the WPM process has been applied appropriately. FOD or Representative (Signature/Z #/Date) Approval Required _____ 9/3/20 Date Approval Expires: September 30, 2021				

Form 2101 (12/17) Page 3

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

Los Alamos NATIONAL LABORATORY

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: WFO-IWD-0016 Revision #: G

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
3	16	329	All	

FOD Designated Facility Point-of-Contact	Name:	Phone:	Pager:	Email:
	Don Hyatt	7-7516	4-5314	hyatt@lanl.gov
	Mel Ortiz	7-5419	4-3070	msortiz@lanl.gov
	Byron Denny	5-5330	4-8586	byron@lanl.gov
	Jamie Vongphachan	4-0642	4-8254	jvongphachan@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)
WTEF is a Category II Nuclear Facility. Check in with the WETF Duty Operator, 7-2060, 16-205-110, prior to start of work. The WETF work control process must be followed. Security Requirements: No 2-way pagers or personal cell phones. Blackberries are allowed except in the "Closed Area". Government issued cell phones must have the battery removed. "Q" / "L" clearance required for access. Un-cleared personnel must be escorted at all times.

Instructions: In the block below, identify work area hazards that could potentially affect the worker(s) or others. Avoid using the same Part 2, Form 2101 for multiple facilities. Ensure that work area hazards, specific to the facility or work location are identified and controlled. 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, Integrated Work Management, Section 6.1)
☐ No Work Area Hazards				

Form 2101 (12/17) Page 1

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

ES&H/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, Integrated Work Management, Section 6.1)
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			

Form 2101 (12/17) Page 2

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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 (P350, Integrated Work Management, Section 6.1)
Security Requirements **Specify:**	☒ Yes ☐ No	Q or L Clearance or Escorted	P202-1 Security Areas, Property Protection Areas, and General Access Areas	U-Train 1425 Annual Security Refresher
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] 138547 9/3/20 Date Approval Expires: **September 30, 2021**				

Form 2101 (12/17) Page 3

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

Los Alamos NATIONAL LABORATORY EST.1943

Form 2101
Non-Tenant Activity Form

Integrated Work Document (IWD) Part 2,
FOD Requirements and Approval for Entry and Area Hazards and Controls

IWD No./Work Request No: WFO-IWD-0016 Revision #: G

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
3	16	450	160, 161, 162, 163 Equip. Rooms	Roof
FOD Designated Facility Point-of-Contact	Name: Don Hyatt Mel Ortiz Byron Denny Jamie Vongphachan	Phone: 7-7516 7-5418 5-5330 4-0542	Pager: 4-8514 4-3070 4-6586 4-8254	Email: hyatt@lanl.gov mseriz@lanl.gov byron@lanl.gov jvongphachan@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)
WTEF is a Category II Nuclear Facility. Check in with the WETF Duty Operator, 7-2060, 16-205-110, prior to start of work. The WETF work control process must be followed. Security Requirements: No 2-way pagers or personal cell phones. Blackberries are allowed except in the "Closed Area". Government issued cell phones must have the battery removed. "Q" / "L" clearance required for access into Equipment Rooms and roof. Un-Cleared personnel must be escorted at all times.

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Avoid using the same Part 2, Form 2101 for multiple facilities. Ensure that work area hazards, specific to the facility or work location are identified and controlled. 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, Integrated Work Management, Section 6.1)
☐ No Work Area Hazards				

Form 2101 (12/17) Page 1

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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, Integrated Work Management, Section 9.1)
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			

Form 2101 (12/17) Page 2

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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 (P 330, Integrated Work Management, Section 6.1)
Security Requirements **Specify:**	☒ Yes ☐ No	Q or L Clearance or Escorted	P202-1 Security Areas, Property Protection Areas, and General Access Areas	GJ Train 1425 Annual Security Refresher
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] 9/3/20

Date Approval Expires: **September 30, 2021**

Form 2101 (12/17) Page 3

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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.: WFO-IWD-0016 Revision #: G

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
3	16	450	All	

FOD Designated Facility Point-of-Contact	Name:	Phone:	Pager:	Email:
	Don Hyatt	7-7519	4-6314	hyatt@lanl.gov
	Mel Ortiz	7-5419	4-3070	msortiz@lanl.gov
	Byron Denny	5-5339	4-6586	byron@lanl.gov
	Jamie Vongphachan	4-0642	4-5234	jvongphachan@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)
WTEF is a Category II Nuclear Facility. Check in with the WETF Duty Operator, 7-2056, 15-205-110, prior to start of work. The WETF work control process must be followed. Security Requirements: No 2-way pagers or personal cell phones. Blackberries are allowed except in the "Closed Area". Government issued cell phones must have the battery removed. "Q" clearance and be complete on all WETF and Lab-Wide requirements for WETF access unless escorted. "L" clearance and Un-Cleared personnel must be escorted at all times.

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Avoid using the same Part 2, Form 2101 for multiple facilities. Ensure that work area hazards, specific to the facility or work location are identified and controlled. 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 (P409, Integrated Work Management, Section 5.1)
☐ No Work Area Hazards				

Form 2101 (12/17) Page 1

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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, Integrated Work Management, Section 6.1)
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/humicity 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			

Form 2101 (12/17) Page 2

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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 (P409, Integrated Work Management, Section 6.1)
Security Requirements Specify:	☒ Yes ☐ No	Q or L Clearance or Escorted	P202-1 Security Areas, Property Protection Areas, and General Access Areas	U-Train 1426 Annual Security Refresher
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] 9/3/23 Date Approval Expires: **September 30, 2021**				

Form 2301 (12/17) Page 3

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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: WFO-IWD-0016 Revision #: G

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
3	16	324	All	
FOD Designated Facility Point-of-Contact	Name: Don Hyatt Mel Ortiz Byron Denny Jamie Vongphachan	Phone: 7-7519 7-5419 5-5339 4-0842	Pager: 4-6314 4-3070 4-6586 4-6254	Email: hyatt@lanl.gov msortiz@lanl.gov byron@lanl.gov jvongphachan@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)
WTEF is a Category II Nuclear Facility. Check in with the WETF Duty Operator, 7-2080, 16-205-110, prior to start of work. The WETF work control process must be followed. Security Requirements: No 2-way pagers or personal cell phones. Blackberries are allowed except in the "Closed Area". Government issued cell phones must have the battery removed. "Q" clearance required for access. "L" clearance and Un-Cleared personnel must be escorted at all times.

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Avoid using the same Part 2, Form 2101 for multiple facilities. Ensure that work area hazards, specific to the facility or work location are identified and controlled. 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.

ES&H/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, Integrated Work Management, Section 6.1)
☐ No Work Area Hazards				

Form 2101 (12/17) Page 1

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

ES/H/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, Integrated Work Management, Section 6.1)
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			

Form 2101 (12/17) Page 2

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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, Integrated Work Management, Section 6.1)
Security Requirements Specify:	☒ Yes ☐ No	Q or L Clearance or Escorted	P200-1 Security Areas, Property Protection Areas, and General Access Areas	U-Train 1425 Annual Security Refresher
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 _____ 12/5/17 9/1/20 Date Approval Expires: September 30, 2021				

Form 2101 (12/17) Page 3

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

NOTE: Use these buttons to print or save the form. DO NOT use the browser tool bar. SAVE PRINT

Form 2101

Los Alamos NATIONAL LABORATORY

~~EWO-IWD-0016~~

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 #: G

The 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 specific activity location.

FOD	TA	Bldg	Room	Other Location
WFO	13	312	All Interior Spaces	
FOD Designated Facility Point-of-Contact	Name: Edward Jacquez	Phone: 7-8170	Pager: 4-6188	Email: ebj@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☒ Check in at Start of Work
- ☐ Work-Area Training Required
- ☒ Security Clearance Requirements
- ☒ Work must be Scheduled
- ☒ Check in Daily
- ☐ Co-located Hazards/Concerns
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Check out at End of Work
- ☐ Quality Issues
- ☐ Check out Daily
- ☐ Escort Required
- ☐ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☐ Other Bounding Conditions: ____

Additional Comments

All work at DARHT must be approved on the DARHT Plan of the Day (POD). Workers must check/sign in and out on a daily basis.

This IWD Part 2 does not address any activities that require

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Avoid using the same Part 2, Form 2101 for multiple facilities. Ensure that work area hazards, specific to the facility or work location are identified and controlled. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the work area hazards, and also 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, Integrated Work Management, Section B.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	Accelerator Halls are exclusion areas during accelerator operations. These areas will be locked. In addition, engineered controls are in		

Form 2101 (12/17) SAVE PRINT CLEAR FORM Page 1 of 2

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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 (P330, Integrated Work Management, Section E.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	Q-Cleared or escorted		
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** EDWARD JACQUEZ (Affiliate) Digitally signed by EDWARD JACQUEZ (Affiliate) Date: 2020.10.22 08:56:15 -06'00'

Date Approval Expires: 12/30/21

Form 2101 (12/17) SAVE PRINT CLEAR FORM Page 2 of 2

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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Form 2101

Los Alamos NATIONAL LABORATORY EST. 1943

WFO-IWD-0016

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 #: G

The 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 specific activity location.

FOD WFO	TA 15	Bldg. 312	Room N/A	Other Location Firing Point, to include berm and other exterior area
FOD Designated Facility Point-of-Contact	Name Edward Jacquez	Phone 7-8170	Pager 4-6188	Email ebj@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*)

- ☐ No Entry/Coordination Requirements
- ☐ FOD-designated facility Point-of-Contact must sign IWD Part 3
- ☒ Plan of the Day/Plan of the Week (POTD/POTW)
- ☒ Check in at Start of Work
- ☐ Work-Area Training Required
- ☒ Security Clearance Requirements
- ☒ Work must be Scheduled
- ☒ Check in Daily
- ☐ Co-located Hazards/Concerns
- ☐ Other Security Requirements (ex.: Cellphone, No Foreign Nationals, etc.)
- ☐ Check out at End of Work
- ☐ Quality Issues
- ☐ Check out Daily
- ☐ Escort Required
- ☐ Review under Authorization Basis (AB)/Safety Basis/Unreviewed Safety Question (USQ)
- ☐ Other Bounding Conditions: ____

Additional Comments

All work at DARHT must be approved on the DARHT Plan of the Day (POD). Workers must check/sign in and out on a daily basis.

This IWD Part 2 does not address any activities that occupy:

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Avoid using the same Part 2, Form 2101 for multiple facilities. Ensure that work area hazards, specific to the facility or work location are identified and controlled. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the work area hazards, and also 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 (P360, Integrated 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	Accelerator Halls are exclusion areas during accelerator operations. These areas will be locked. In addition, engineered controls are in		

Form 2101 (12/17) SAVE PRINT CLEAR FORM Page 1 of 2

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

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 (P330, Integrated Work Management, Section 5.1)
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	Q-Cleared or escorted		
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** EDWARD JACQUEZ (Affiliate)

Date Approval Expires: 12/30/21

Form 2101 (12/17) SAVE PRINT CLEAR FORM Page 2 of 2

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

NOTE: Use these buttons to print or save the form. DO NOT use the browser tool bar. SAVE PRINT

Form 2101

Los Alamos NATIONAL LABORATORY

Integrated Work Document (IWD) Part 2,
FOD Requirements and Approval for Entry and Area Hazards and Controls

Non-Tenant Activity Form

WFO-IWD-0016

IWD No./Work Request No. ____ Revision #: G

The 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 specific activity location.

FOD WFO	TA 15	Bldg. 662	Room	Other Location
FOD Designated Facility Point-of-Contact	Name Edward Jacques	Phone 7-8170	Pager 4-6188	Email ehj@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

All work at DARHT must be on the approved DARHT Plan of the Day(POD). Workers must sign in, and out on a daily basis.

This IWD Part 2 does not address any activities that require

Instructions: In the block below, identify work-area hazards that could potentially affect the worker(s) or others. Avoid using the same Part 2, Form 2101 for multiple facilities. Ensure that work area hazards, specific to the facility or work location are identified and controlled. Specify the facility controls and preventive measures that must be implemented by the worker(s) to protect against the work area hazards, and also 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 (DOE, Integrated Work Management, Section 5.1)
☐ 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	The Weather Enclosure is within the DARHT Firing Point. The Firing Point is an exclusion area during Accelerator Mode 2.		

Form 2101 (12/17) SAVE PRINT CLEAR FORM Page 1 of 2

Attachment B
Integrated Work Document (IWD) Part 2 (Non Tenant) (cont'd

IWD No./Work Request No: ____ Revision #: ____

ES/HS&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 (FY20, Integrated 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	Q-cleared, or escorted		
Other Hazards **Specify:** HE during HE operations	☒ Yes ☐ No	Exclusion area locked with engineered controls		

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 EDWARD JACQUEZ (Affiliate) [illegible]

Date Approval Expires: 12/31/21

Form 2101 (12/17) SAVE PRINT CLEAR FORM Page 2 of 2

Attachment C Integrated Work Document (IWD) Part 2 (Tenant)

Form 2102

Los Alamos NATIONAL LABORATORY EST. 1943

Integrated Work Document (IWD) Part 2,
FOD Requirements and Approval for Entry and Area Hazards and Controls

Tenant Activity Form

IWD No./Work Request No: WFO-IWD-0016, Spill Response and Clean Up in Weapons Facilities Operations (WFO) Areas Revision #: G

FOD must determine the facility entry and coordination requirements and identify the ESH/S&S hazards and controls associated with the activity location.

FOD	TA	Bldg.	Room	Other Location
3	6, 8, 9, 11, 14, 15, 16, 22, 36, 37, 39, 40, 49, 67, 68	All except WETF & DARHT	All	N/A
FOD Designated Facility Point-of-Contact	Name John Branch, WFO OM Designee Erlinda Gonzales, WFO OM Designee Rianne Campbell, WFO OM Designee	Phone 412-9696 412-8133 500-7878	Pager	Email jbranch@lanl.gov elmedina@lanl.gov rfarmer@lanl.gov

Entry and Coordination Requirements (*Check one or more of the following*):

☐ No Entry/Coordination Requirements	☐ FOD designated facility point-of-contact must sign IWD Part 3		
☐ POTD/POTW	☒ Check in at Start of Work	☒ Work Area Training Required	☒ Security Clearance Requirements
☐ Work must be Scheduled	☐ Check in Daily	☐ Escort Required	☐ Other Security Requirements
☒ Co-located Hazards/Concerns	☒ Check out at End of Work	☐ Quality Issues	
☐ Review under AB/Safety Basis/USQ this 2102.	☐ Check out Daily	☒ Other Bounding Conditions CAUTION: NO ENTRY to Confined Spaces under	

Instructions: In the block below, provide facility or work area information needed by the workers on this activity. (Things to consider include specific work-area hazards and controls, potential conflicts with co-located activities, or any facility restrictions on the activity.) Identify relevant reference documents and any training required.

Facility/Work-Area Information Relevant to this Activity

Work within VTRs requires check-in first with appropriate Access Control Office and coordination with respective Program Office to ensure coordination with programmatic activities.

Follow ALL Postings:

TA-6
ACCESS CONTROL: Work within TA-6 requires check-in first with TA-40-1 ACO for access to fire roads, canyons, etc. Inform ACO what locations and routes will be taken while on site (use a map of area if possible).

Form 2102 (4/12) Page ___ of ___

Attachment C Integrated Work Document (IWD) Part 2 (Tenant) (cont'd)

Specify Hazards: PRS, sensitive species-e.g. spotted owl, historical/archeological sites, and waste generation.
- PRS exists. Notify WFO Environmental Generalist, if required.
- Archeological sites exist within open areas. Do not disturb any marked archeological sites. If entry into any area required contact Environmental Stewardship Group.
- Work during threatened and endangered species seasons will restricts outdoor activities.
- Excavation Permit for soil disturbance activities

TA-8
ACCESS CONTROL: Must check-in with TA-8-21 Access Control to sign in locally and receive a briefing on site hazards AND to inform ACO what locations and routes will be taken while on site (use a map of area if possible).
CAUTION: This area uses Radiography equipment – specifically Buildings TA-8-22, TA-8-23, TA-8-70, and TA-8-120. Work group shall adhere to all local ACO instructions as to where access is allowed and where it is restricted, e.g. areas around buildings performing radiography.

Specify Hazards: Radiography Activities, High Explosives Area, PRS, sensitive species-e.g. spotted owl, historical/archeological sites, and waste generation.
- PRS exists. Notify WFO Environmental Generalist, if required.
- Archeological sites exist within open areas. Do not disturb any marked archeological sites. If entry into any area required contact Environmental Stewardship Group.
- Work during threatened and endangered species seasons will restricts outdoor activities.
- Excavation Permit for soil disturbance activities

TA-9
ACCESS CONTROL: Work within TA-9 requires check-in first with TA-9 ACO for access.
CAUTION: This area is a HE Area. Work group shall adhere to all TA-9 local ACO instructions as to where access is allowed and where it is restricted, e.g. areas around HE facilities and magazines.

Specify Hazards: High Explosives Area, PRS, sensitive species-e.g. spotted owl, historical/archeological sites, and waste generation.
- PRS exists. Notify WFO Environmental Generalist, if required.
- Work during threatened and endangered species seasons restricts outdoor activities.
- Excavation Permit for soil disturbance activities

TA-11
ACCESS CONTROL: Work within TA-11 requires check-in first with TA-16 ACO for access to fire roads, canyons, etc. AND to inform ACO what locations and routes will be taken while on site (use a map of area if possible).
CAUTION: This area has resumed High Explosive Operations. Work group shall adhere to all local ACO instructions and posted area as to where access is allowed and where it is restricted.

ESH CONCERNS: Entry into HE and DU contaminated areas may be required. Notify the TA-16 ACO prior to accessing areas to ensure area is safe for activities and to coordinate RCT support.

Specify Hazards: High Explosives Area, PRS, sensitive species-e.g. spotted owl, historical/archeological sites, and waste generation.
- Follow all postings
- PRS exists. Notify WFO Environmental Generalist, if required.
- Archeological sites exist within open areas. Do not disturb any marked archeological sites. If entry into any area required contact Environmental Stewardship Group.

Form 2102 (4/12) Page ___ of ___

Attachment C Integrated Work Document (IWD) Part 2 (Tenant) (cont'd)

- Work during threatened and endangered species seasons will restricts outdoor activities.
- Excavation Permit for soil disturbance activities

TA-14
ACCESS CONTROL: Work within TA-14 requires check-in first with TA-15 ACO for access to fire roads, canyons, etc. AND to inform ACO what locations and routes will be taken while on site (use a map of area if possible).
CAUTION: This area is a HE Firing Site Area. Work group shall adhere to all local ACO instructions as to where access is allowed and where it is restricted, e.g. areas around firing sites.

ESH CONCERNS: Entry into HE and DU contaminated areas may be required. Notify the TA-15 ACO and area Group office prior to accessing area to ensure area is safe for activities and to coordinate RCT support.
- Follow all postings
- Contact applicable SME as needed: IH, RCT, ExSO

Specify Hazards: High Explosives Area, PRS, sensitive species-e.g. spotted owl, historical/archeological sites, and waste generation.
- PRS exists. Notify WFO Environmental Generalist, if required.
- Archeological sites exist within open areas. Do not disturb any marked archeological sites. If entry into any area required contact Environmental Stewardship Group.
- Work during threatened and endangered species seasons will restricts outdoor activities.
- Excavation Permit for soil disturbance activities

TA-15
ACCESS CONTROL: Work within TA-15 requires check-in first with TA-15 ACO for access to fire roads, canyons, etc. and to get a radio AND to inform ACO what locations and routes will be taken while on site (use a map of area if possible).
CAUTION: This area is a HE Firing Site Area. Work group shall adhere to all local ACO instructions as to where access is allowed and where it is restricted, e.g. areas around firing sites.

ESH CONCERNS: Entry into HE, beryllium, and DU contaminated areas may be required. Notify the TA-15 ACO and area Group office prior to accessing area to ensure area is safe for activities and to coordinate RCT support.

Specify Hazards: High Explosives Area, PRS, sensitive species-e.g. spotted owl, historical/archeological sites, and waste generation.
- PRS exists. Notify WFO Environmental Generalist, if required.
- Archeological sites exist within open areas. Do not disturb any marked archeological sites. If entry into any area required contact Environmental Stewardship Group.
- Work during threatened and endangered species seasons will restricts outdoor activities.
- Excavation Permit for soil disturbance activities

TA-16
ACCESS CONTROL: Work within TA-16 requires check-in first with TA-16 ACO for access to fire roads, canyons, etc. and to get a radio AND to inform ACO what locations and routes will be taken while on site (use a map of area if possible).
CAUTION: This area is a High Explosives Area. Work group shall adhere to all local ACO instructions as to where access is allowed and where it is restricted, e.g. areas around firing sites.

Specify Hazards: High Explosives Area, PRS, sensitive species-e.g. spotted owl, historical/archeological sites, and waste generation.
- PRS exists. Notify WFO Environmental Generalist, if required.

Form 2102 (4/12) Page ___ of ___

Attachment C Integrated Work Document (IWD) Part 2 (Tenant) (cont'd)

- Archeological sites exist within open areas. Do not disturb any marked archeological sites. If entry into any area required contact Environmental Stewardship Group.
- Work during threatened and endangered species seasons will restricts outdoor activities.
- Excavation Permit for soil disturbance activities

TA-22
ACCESS CONTROL: Work within TA-22 requires check-in first with TA-22 ACO for access to fire roads, canyons, etc. and to get a radio AND to inform ACO what locations and routes will be taken while on site (use a map of area if possible).
CAUTION: This area is a High Explosives Area. Work group shall adhere to all local ACO insructions as to where access is allowed and where it is restricted, e.g. areas around HE facilites and magazines.

Specify Hazards: High Explosives Area, PRS, sensitive species-e.g. spotted owl, historical/archeological sites, and waste generation.
- PRS exists. Notify WFO Environmental Generalist, if required.
- Archeological sites exist within open areas. Do not disturb any marked archeological sites. If entry into any area required contact Environmental Stewardship Group.
- Work during threatened and endangered species seasons will restricts outdoor activities.
- Excavation Permit for soil disturbance activities

TA-36
ACCESS CONTROL: Work within TA-36 requires check-in first with TA-15 ACO for access to fire roads, canyons, etc. and to get a radio AND to inform ACO what locations and routes will be taken while on site (use a map of area if possible).
CAUTION: This area is a Firing Site Area. Work group shall adhere to all local ACO insructions as to where access is allowed and where it is restricted, e.g. areas around firing sites.

ESH CONCERNS: Entry into HE, beryllium, and DU contaminated areas may be required. Notify the TA-15 ACO prior to accessing area to ensure area is safe for activities and to coordinate SME support (ExSO, IH, RCT).

Specify Hazards: High Explosives Area, PRS, sensitive species-e.g. spotted owl, historical/archeological sites, and waste generation.
- PRS exists. Notify WFO Environmental Generalist, if required.
- Archeological sites exist within open areas. Do not disturb any marked archeological sites. If entry into any area required contact Environmental Stewardship Group.
- Work during threatened and endangered species seasons will restricts outdoor activities.
- Excavation Permit for soil disturbance activities

TA-37
ACCESS CONTROL: Work within TA-37 requires check-in first with TA-16 ACO for access to fire roads, canyons, etc. and to get a radio AND to inform ACO what locations and routes will be taken while on site (use a map of area if possible).
CAUTION: This area is a High Explosives Magazine Area

Specify Hazards: High Explosives Area, PRS, sensitive species-e.g. spotted owl, historical/archeological sites, and waste generation.
- PRS exists. Notify WFO Environmental Generalist, if required.
- Archeological sites exist within open areas. Do not disturb any marked archeological sites. If entry into any area required contact Environmental Stewardship Group.

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Attachment C Integrated Work Document (IWD) Part 2 (Tenant) (cont'd)

- Work during threatened and endangered species seasons will restricts outdoor activities.
- Excavation Permit for soil disturbance activities

TA-39
ACCESS CONTROL: Work within TA-39 requires check-in first with TA-39 ACO for access to fire roads, canyons, etc. and to get a radio AND to inform ACO what locations and routes will be taken while on site (use a map of area if possible).
CAUTION: This area is a HE Firing Site Area. Work group shall adhere to all local ACO instructions as to where access is allowed and where it is restricted, e.g. areas around firing sites.

ESH CONCERNS: Entry into HE and DU contaminated areas (off-road) may be required. Notify the TA-39 ACO and area Group office prior to accessing area to ensure area is safe for activities and to coordinate RCT support.

Specify Hazards: High Explosives Area, PRS, sensitive species-e.g. spotted owl, historical/archeological sites, and waste generation.
- PRS exists. Notify WFO Environmental Generalist, if required.
- Archeological sites exist within open areas. Do not disturb any marked archeological sites. If entry into any area required contact Environmental Stewardship Group.
- Work during threatened and endangered species seasons will restricts outdoor activities.
- Excavation Permit for soil disturbance activities

TA-40
ACCESS CONTROL: Work within TA-40 requires check-in first with TA-40 ACO for access to fire roads, canyons, etc. and to get a radio AND to inform ACO what locations and routes will be taken while on site (use a map of area if possible).
CAUTION: This area is a HE Firing Site Area – specifically buildings TA-40-5, TA-40-8, TA-40-9, and TA-40-15. Work group shall adhere to all local ACO instructions as to where access is allowed and where it is restricted, e.g. areas around firing sites.

Specify Hazards: Designated/Posted Contamination Areas: Beryllium, Depleted Uranium, High Explosive Area, PRS, sensitive species-e.g. spotted owl, historical/archeological sites, and waste generation.
- Follow all postings
- PRS exists. Notify WFO Environmental Generalist, if required.
- Archeological sites exist within open areas. Do not disturb any marked archeological sites. If entry into any area required contact Environmental Stewardship Group.
- Work during threatened and endangered species seasons will restricts outdoor activities.
- Excavation Permit for soil disturbance activities

TA-49
ACCESS CONTROL: Work within TA-49 requires check-in first with TA-16 ACO for access to fire roads, canyons, etc. and to get a radio AND to inform ACO what locations and routes will be taken while on site (use a map of area if possible).
Accessing the HE Area within TA-49 also requires check in at TA-49-113.

Specify Hazards: Designated/Posted Contamination Areas: Beryllium, Depleted Uranium, High Explosive Area, PRS, sensitive species-e.g. spotted owl, historical/archeological sites, and waste generation.
- Follow all postings
- PRS exists. Notify WFO Environmental Generalist, if required.

Form 2102 (4/12) Page ___ of ___

Attachment C Integrated Work Document (IWD) Part 2 (Tenant) (cont'd)

- Archeological sites exist within open areas. Do not disturb any marked archeological sites. If entry into any area required contact Environmental Stewardship Group.
- Work during threatened and endangered species seasons will restricts outdoor activities.
- Excavation Permit for soil disturbance activities

TA-67
ACCESS CONTROL: Work within TA-67 requires check-in first with TA-15 ACO for access to fire roads, canyons, etc. and to get a radio AND to inform ACO what locations and routes will be taken while on site (use a map of area if possible).
CAUTION: This area is near a Firing Site Area. Work group shall adhere to all local ACO insructions as to where access is allowed and where it is restricted, e.g. areas around firing sites.

Specify Hazards: Designated/Posted Contamination Areas: Beryllium, Depleted Uranium, High Explosive, PRS, sensitive species-e.g. spotted owl, historical/archeological sites, and waste generation.
- Follow all postings
- PRS exists. Notify WFO Environmental Generalist, if required.
- Archeological sites exist within open areas. Do not disturb any marked archeological sites. If entry into any area required contact Environmental Stewardship Group.
- Work during threatened and endangered species seasons will restricts outdoor activities.
- Excavation Permit for soil disturbance activities

TA-68
ACCESS CONTROL: Work within TA-68 requires check-in first with TA-15 ACO for access to fire roads, canyons, etc. and to get a radio AND to inform ACO what locations and routes will be taken while on site (use a map of area if possible).
CAUTION: This area is near a Firing Site Area. Work group shall adhere to all local ACO insructions as to where access is allowed and where it is restricted, e.g. areas around firing sites.

Specify Hazards: Designated/Posted Contamination Areas: Beryllium, Depleted Uranium, High Explosive, PRS, sensitive species-e.g. spotted owl, historical/archeological sites, and waste generation.
- Follow all postings
- Contact applicable SME as needed: IH, RCT, ExSO
- PRS exists. Notify WFO Environmental Generalist, if required.
- Archeological sites exist within open areas. Do not disturb any marked archeological sites. If entry into any area required contact Environmental Stewardship Group.
- Work during threatened and endangered species seasons will restricts outdoor activities.
- Excavation Permit for soil disturbance activities

ABNORMAL EVENTS: Any injury, accident, spill, off normal occurrence, etc. MUST be reported immediately to the WFO-FOD Duty Officer @ 664-2926 AND the Access Control Office.

Reference Documents: P101-8, Explosives Safety; P121 Radiation Safety; P101-21 Chronic Beryllium Disease Prevention Program, WFO-OP-1137 WFO Lightning Threat Actions, WFO-BEP-378 WFO Building Emergency Plan

Training Requirements: Per: WFO-IWD-0016, Spill Response and Clean Up in Weapons Facilities Operations (WFO) Areas, Site Specific Training for ALL areas

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Spill Response and Clean Up in Weapons Facilities Operations (WFO) Areas

Document No.: WFO-IWD-00016
Revision: G
Effective Date: 10/28/2020

Attachment D Integrated Work Document (IWD) Part 3 Validation and Work Release
Validation and Work Release

Form 2103

Los Alamos NATIONAL LABORATORY EST 1943

Integrated Work Document (IWD) Part 3, Validation and Work Release

- **IWD #WFO-IWD-0016** **Revision #:G** Work Release

By signing below, I verify this activity is compatible with current facility configuration and operating conditions.
FOD designated Operations Manager or other facility point-of-contact for work area

Signature/Z#/Date **(If required by FOD)**: JOHN BRANCH (Affiliate) Digitally signed by JOHN BRANCH (Affiliate) Date: 2020.10.27 12:03:47 -06'00'

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, and that required initial conditions and other prerequisites are in place.
- The assigned workers are authorized and are competent 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).

PIC (Signature/Z#/Date) **Required:** _____

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:** _____

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?

* "Critical steps occur anytime human performance involves a substantial transfer of energy, or movement of solids, liquids, and gases, or the transmission of data and information that , if not performed under control, could cause serious harm to one or more important assets." (Performance Improvement, vol. 53, no. 9, October 2014)

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Spill Response and Clean Up in Weapons Facilities Operations (WFO) Areas

Document No.: WFO-IWD-00016
Revision: G
Effective Date: 10/28/2020

IWD #WFO-IWD-0016 Revision #:G Work Release

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)
Worker (Signature/Z#/Date)	**Worker** (Signature/Z#/Date)
Worker (Signature/Z#/Date)	**Worker** (Signature/Z#/Date)
Worker (Signature/Z#/Date)	**Worker** (Signature/Z#/Date)
Worker (Signature/Z#/Date)	**Worker** (Signature/Z#/Date)
Worker (Signature/Z#/Date)	**Worker** (Signature/Z#/Date)
Worker (Signature/Z#/Date)	**Worker** (Signature/Z#/Date)

Form 2103 (7/17)

Spill Response and Clean Up in Weapons Facilities Operations (WFO) Areas

Document No.: WFO-IWD-0016
Revision: G
Effective Date: 10/28/2020

Attachment E
Integrated Work Document (IWD) Part 4, (Feedback/Post Job Reviews)

IWD #: WFO-IWD-0016 **Revision #:** G

Feedback of ongoing activities/post job review with the workers and Person in Charge (PIC) should include the following:

- identify inefficiencies, problems during the activity, coordination issues, unanticipated conditions, near misses; and
- develop recommendations for improvement.

A post-job review with the workers and PIC should include the following:

- verify that the activity is complete and make notifications in accordance with Facility Operations Director (FOD) requirements; and
- ensure that follow-through actions (e.g., clean-up, recycle, waste disposal, equipment removal, and secure storage) are completed.

Lessons learned; safety, security, and environmental issues; coordination issues; and unexpected conditions.
Suggested improvements to enter into the Job Hazard Analysis (JHA) Tool, FootPrints, or other Integrated Work Control data bases supported by Lessons Learned.
Other recommendations for improvements to performing this activity. State the positive attributes of this activity.

Completion Statement

Name (print) of PIC/Z #:	Signature	Date

ATTACHMENT 25: SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN FOR THE LOG-HERG REFUELING TRUCKS

SPCC-PLN-60-03	Revision: **0**	Los Alamos NATIONAL LABORATORY EST.1943
Effective Date: 10/12/2020	Next Review Date: 10/12/2025	

Los Alamos National Laboratory

Spill Prevention Control and Countermeasures Plan

LOG-HERG REFUELING TRUCKS & TA-60-1 HEAVY EQUIPMENT SHOP

Hazard Grading: ☒ Low ☐ Moderate ☐ High/Complex

Usage Level: ☒ Reference ☐ UET ☐ Mixed: UET Sections: _____

Status: ☐ New ☒ Major Revision ☐ Minor Revision

☐ Review w/No Changes ☐ Other: _____

Safety Basis: ☒ N/A ☐ USQ ☐ USI Number: _____

Document Author/Subject Matter Expert:

Name:	Organization:	Signature:	Date:
William Foley	EPC-CP	WILLIAM FOLEY (Affiliate) Digitally signed by WILLIAM FOLEY (Affiliate) Date: 2020.10.13 17:05:41 -06'00'	10-13-20

Derivative Classifier: ☒ **Unclassified or** ☐ _____

Name:	Organization:	Signature:	Date:
Steve Wolfel	EPC-CP		10/19/20

Approval Signatures:

EPC-CP Reviewer: Jacob Knight	Organization: EPC-CP	Signature: JACOB KNIGHT (Affiliate) Digitally signed by JACOB KNIGHT (Affiliate) Date: 2020.10.15 10:24:42 -06'00'	Date: 10-15-20
EPC-CP Program Lead: Steve Pearson	Organization: EPC-CP	Signature: STEVEN PEARSON (Affiliate) Digitally signed by STEVEN PEARSON (Affiliate) Date: 2020.10.16 11:55:01 -06'00'	Date: 10-15-20

General Requirements Cross Reference

Final SPCC Rule	Description of Section	SPCC Section
Subpart A. Applicability, Definitions, and General Requirements for All Facilities and All Types of Oils: 40 CFR 112.1 – 7		
§ 112.7	General requirements for SPCC Plans for all facilities and all oil types.	General Requirements Cross Reference, certification and management approval pages
§112.7(a.1, 2)	Discussion of facility's conformance with rule requirements; deviations from Plan requirements.	Section 1.1. Conformance
§112.7(a.3.i, iii)	Facility characteristics that must be described in the Plan; facility diagram.	Section 2. Facility Information, Appendix B
§112.7(a.3.ii, iv, v, vi; a.4; a.5)	Spill prevention, response and reporting information in the Plan; emergency procedures.	Section 5. Spill Prevention and Control, Section 2.3.2 Refuelers and Oil Transfer Equipment/Operations, Appendix E
§ 112.7(b)	Fault analysis.	Section 4. Potential Spill Volumes and Rates
§ 112.7(c)	Secondary containment/diversionary structures.	Section 2. Facility Information, Appendix C
§ 112.7(d)	Contingency planning.	N/A
§ 112.7(e)	Inspections, tests, and records.	Section 6. Inspections, Section 7. Recordkeeping, Appendix D
§ 112.7(f)	Employee training and discharge prevention procedures.	Section 9. Training, Appendix G
§ 112.7(g)	Security (excluding oil production facilities).	Section 5.3. Security
§ 112.7(h)	Loading/unloading (excluding offshore facilities).	Section 2.3.2. Refuelers and Oil Transfer Equipment/Operations
§ 112.7(i)	Brittle fracture evaluation requirements.	N/A
§ 112.7(j)	Conformance with State requirements.	Section 1.1. Conformance
Subpart B. Requirements for Petroleum Oils and Non-Petroleum Oils, Except Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils (including Oils from Seeds, Nuts, Fruits, and Kernels): 40 CFR 112.8 – 11		
§ 112.8	Requirements for onshore facilities (excluding production facilities).	Throughout Plan
§ 112.8(a)	General and specific requirements.	Throughout Plan
§ 112.8(b)	Facility drainage.	Section 2.2. Site Assessment/Location, Section 2.3. Description
§ 112.8(c.1)	Bulk storage containers - compatibility.	Section 2.3.1. Tanks
§ 112.8(c.2, 3)	Bulk storage containers – containment, drainage.	Section 1.1. Conformance, Section 2.3. Description
§ 112.8(c.6)	Bulk storage containers – testing.	Section 2.3.1. Tanks, Section 6 Inspections
§ 112.8(c.4, 5, 7)	Bulk storage containers – buried tanks, leakage.	N/A
§ 112.8(c. 9)	Bulk storage containers – effluent treatment.	Section 2.3.2 Refuelers and Oil Transfer Equipment/Operations, Section 6 Inspections
§ 112.8(c.8)	Bulk storage containers – installation.	Section 1.1 Conformance, Section 2.3. Description
§ 112.8(c.10, 11)	Bulk storage containers – discharges, discharge prevention.	Section 1.1. Conformance, Section 2.3. Description, Section 5. Spill Prevention and Control, Section 6. Inspections
§ 112.8(d.1)	Facility transfer operations, pumping, and facility process – buried piping.	N/A
§ 112.8(d.2)	Facility transfer operations, pumping, and facility process - connections.	Section 1.1. Conformance, Section 2.3.2. Oil

		Transfer Equipment/Operations
§ 112.8(d.3)	Facility transfer operations, pumping, and facility process - supports.	N/A
§ 112.8(d.4)	Facility transfer operations, pumping, and facility process - inspections.	Section 6. Inspections
§ 112.8(d.5)	Facility transfer operations, pumping, and facility process - warnings	Section 2.3. Description, Section 5.3. Security
§ 112.9, § 112.10, § 112.11	Requirements for: (1) onshore production facilities, oil drilling and workover facilities; and (2) offshore oil drilling, production, or workover facilities.	N/A
Subpart C. Requirements for Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and for Vegetable Oils, including Oils from Seeds, Nuts, Fruits, and Kernels: 40 CFR 112.12 – 15		
§ 112.12, § 112.13, § 112.14, § 112.15	All portions	N/A

CERTIFICATION

This Plan was developed pursuant to provisions of the federal regulation for oil pollution prevention, 40 CFR Part 112. Its purpose is to provide spill prevention and response measures to prevent the pollution of navigable waters from oil related spills.

In accordance with 40 CFR Part 112.3 (d), this Plan has been reviewed and certified by a Registered Professional Engineer (PE). By means of this certification, the engineer, having examined the facility or having an agent examine the facility, and being familiar with the provisions of this regulation, attests that the Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of Part 112. Procedures for required inspections and testing have been established and this Plan is adequate for the facility.

Certified by: _____ Date: 10/13/20

William Joseph Foley
Registered Professional Engineer
New Mexico License No. 12703

10/13/20

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MANAGEMENT APPROVAL

This Plan has the full approval of management at a level with authority to commit the necessary resources. The owner/operator will fully implement this Plan in accordance with the requirements of 40 CFR Part 112.

Facility Owner/Operator Approval:

Approved by:_____ Date:_____

Brian Watkins
Logistics Division Leader
Los Alamos National Laboratory

REVISION HISTORY

Document Number and Revision *[Include revision number, beginning with Revision 0]*	**Effective Date** *[Document Control Coordinator inserts effective date]*	**Professional Engineer Certification Required**	**Description of Changes** *[List specific changes made since the previous revision]*
SPCC – MSS-HERG Refueling Trucks, Rev. 0	March 2010	Yes (see file)	Initial Issue
SPCC – MSS-HERG Refueling Trucks, Rev. 1	April 2015	Yes (see file)	Plan Renewal
SPCC-PLAN-60-03, Rev 0	August 2020	Yes (see Appendix B)	Document reformat/numbering, 5-year Review/Update, Remove TA-54 refueler/four 125-gallon storage tank/one-240-gallon storage tank/four 55-gallon drums, Add seven 500-gallon storage tanks

Table of Contents

List of Tables

1.0 INTRODUCTION

This Spill Prevention Control and Countermeasure (SPCC) Plan is a requirement of the Environmental Protection Agency (EPA) Oil Pollution Prevention Regulation in accordance with Title 40 of the Code of Federal Regulation Part 112 (40 CFR 112). This Plan has been revised to comply with requirements of the regulations published in August 2002 and all Amendments. 40 CFR 112.1(d)(2)(ii) requires that facilities that have an aggregate aboveground storage capacity of 1,320 gallons or greater of oil, including all containers 55 gallons or greater, maintain and implement a SPCC Plan. The intent of the SPCC Plan is to prevent oil related spills from polluting natural resources belonging to the United States (U.S.) through the implementation of adequate prevention and response measures. With regard to Los Alamos National Laboratory (LANL or Laboratory), natural resources include drainages to and/or navigable waters of the State of New Mexico (NM) and/or U.S. which include all canyons, arroyos, streams, and rivers within and surrounding LANL Technical Areas (TAs).

Due to LANL's diverse activities and changing conditions, a single Plan incorporating all LANL facilities subject to SPCC requirements is impractical. SPCC locations are addressed according to specific Facility boundaries within LANL as determined by management and funding organization. The Facility Operations Director (FOD) or the facility tenant with approval from LANL Environmental Protection and Compliance Division's Compliance Programs Group (EPC-CP), develops, implements, and maintains SPCC Plans for the specific SPCC location(s) within their stewardship.

This SPCC Plan addresses the TA-60-1 Heavy Equipment Shop (HES) and refueling trucks (Refuelers) operated by the Logistics Heavy Equipment, Roads & Grounds (LOG-HERG) division at LANL. Eight 55-gallon containers for new oil and fuel waste storage inside TA-60-1 and seven 500-gallon above ground double walled storage tanks for new/waste oils are included in this SPCC Plan revision compared with the last SPCC Plan revision. Four of the new 500-gallon above ground double walled storage tanks for new and waste oil will be brought into the HES to replace four 55-gallon containers, three 125-gallon tanks, and one 240-gallon tank during the effective period of this SPCC Plan. When the new tanks are brought into service the old tanks will be taken out of service and no longer used for oil storage. In addition, the TA-54 refueling truck included in the previous SPCC Plan is being removed. The tank has been removed from the truck and salvaged while the truck has been re-purposed as a work-truck with no refueling capacity. These changes result in a net increase to facility oil storage of 1,820 gallons compared to the previous SPCC Plan revision. Additional details related to these seven tanks are provided below in Section 2.3.1.

1.1 Conformance

This SPCC Plan and facility conform to the requirements of 40 CFR Part 112 to the fullest extent possible. The facility has appropriate spill prevention, reporting, and response measures, secondary containment is appropriate for the materials stored, and there is adequate security. Procedures for inspections, testing, loading and unloading, record keeping, spill response, and training have been developed. Work at this facility is performed using LANL's five step Integrated Safety Management approach, which evaluates a task and identifies potential hazards such as a spill event to achieve effective spill response training for employees. Deviations from regulatory requirements include:

- LOG-HERG may provide refueling services to construction vehicles and equipment located at construction sites that are regulated by 40 CFR 112 or 40 CFR 122. Such sites regulated by a SPCC Plan or Construction Storm Water Pollution Prevention Plan (SWPPP) are considered approved refueling sites based on regulatory requirements and will not be updated in this Plan. SPCC and SWPPP requirements include proper best management practices for ensuring that oil pollution prevention measures are administered during refueling activities. Facility maps and site specific pollution prevention requirements are available at the various SPCC and SWPPP regulated construction sites

Current and future activities at the facility to ensure compliance with regulatory requirements include:

- Train refueling personnel to respond to an incidental spill on an on-going basis.
- Continue utilization of the Remote Refueling Checklist form found in Appendix D.
- Train refueling personnel to identify adjacent storm drains and ditches and to choose and install temporary best management practices (BMPs) if needed.
- Perform refueling only at designated locations. If refueling must occur at an undesignated location, the location will be inspected for adjacent storm drains and ditches. Temporary BMPs will be installed if required.
- If temporary BMPs are specified for a location, fueling will not occur unless the temporary BMPs have been installed by the facility or refueler team.
- Refueling will not occur during precipitation events in areas exposed to storm water.
- Storage tanks will not be filled over 90% unless the tank is equipped with a 95% overfill prevention valve. The facility should determine the current level of fuel in the tank and request the specific amount to be delivered to not overfill their tank. It is strongly encouraged that all storage tanks be equipped with a level gage visible to refuelers. Vehicles can be filled until the dispensing nozzle shutoff is activated.
- Seven 500-gallon double walled above ground storage tanks will be brought into the HES. Three of these tanks will each store up to 500 gallons each of motor oil. Two of these tanks will each store up to 500 gallons of hydraulic oil. Two tanks will store up to 500 gallons of waste oil. Since these are double walled, the outer shell will provide secondary containment for each tank. Additional details related to these tanks are provided in Section 2.3.1 of this SPCC Plan.
- Upgrade current oil storage by removing three 125-gallon, one 240-gallon, and four 55-gallon oil storage containers from service concurrent with placing the 500-gallon above ground storage tanks into service as previously described.

In addition to Federal regulations, this Plan complies with the New Mexico Environment Department (NMED) regulations for Ground and Surface Water Protection found in the New Mexico Administrative Code (NMAC) 20.6.2. State water quality standards are considered when

determining procedures for secondary containment drainage. These tanks do not fall under the NMED Petroleum Storage Tank Regulations (NMAC 20.5.1-17).

The Certification of the Applicability of Substantial Harm Criteria is included in Appendix A. A self-selection process outlined in Section 112.3 of 40 CFR 112 was applied and it was determined that the facility does not fall under the "substantial harm" category. Therefore, the facility is not required to prepare and submit a Facility Response Plan.

1.2 Scope

The Logistics (LOG) Division within the Facilities & Operations Directorate (ALDFO) is accountable for SPCC requirements applicable to their facility and has responsibility for developing, implementing, enforcing, and maintaining the SPCC Plan requirements. The Division Leader may also delegate authority and responsibility to other members of LOG Division to ensure that the record keeping, Plan amendments, training, spill response and reporting, and inspections are properly completed and submitted to them for approval. The complete SPCC Plan with original signatures of the Division Leader is located in TA-60-1 HES or during updates will be located at the Deployed Environmental Professional (DEP) office (TA-3-1437).

Table 1. SPCC Responsibilities

Topic Area	*Specific Item*	*Responsible Entity*	
		EPC-CP	*LOG*
General	*Prepare SPCC to meet regulatory requirements*	*X*	*X*
	Approve SPCC	*X*	
	Implement SPCC		*X*
	Approve physical changes needed to implement SPCC	*X*	
	Provide oversight	*X*	
	Leak and spill cleanup and disposal, provide spill information to EPC-CP, update spill log in Plan		*X*
	Spill reporting to state and federal regulators	*X*	*X*
Inspections	*Provide qualified personnel to perform and write monthly SPCC walk around inspections*		*X*
	Ensure annual physical inspections of tanks are performed.		*X*
	Provide qualified personnel to perform and write annual SPCC inspections	*X*	
	Implement corrective actions noted in inspections		*X*
Recordkeeping	*Maintain inspections in onsite SPCC*		*X*
	Maintain onsite training records for periodic briefings or Lessons Learned		*X*
	Update spill tracking form		*X*
	Track discharges/spills (planned and unplanned)	*X*	*X*

Table 1. SPCC Responsibilities			
Topic Area	*Specific Item*	*Responsible Entity*	
		EPC-CP	*LOG*
	Review SPCC every five years	*X*	*X*
Training	*Provide annual training that meets SPCC regulatory requirements*	*X*	
	Provide site-specific SPCC Training (Facility Owner/Operator)		*X*
	Ensure all oil handling personnel and designated persons accountable for discharge prevention attend annual training	*X*	*X*
Plan Amendment	*Provide information on changes to design, construction, operation or maintenance*		*X*
	Amend Plan when spill or other change in facility occurs		*X*
	Approve physical changes needed and plan amendments to SPCC, if engineer certification is required	*X*	
	Implement changes to plan within 6 months of change to facility		*X*

1.3 Plan Amendment

This SPCC Plan will be amended whenever there is a change in facility design, construction, operation or maintenance that materially affects the facility's potential for discharge of oil into or upon LANL natural resources including canyons, arroyos, streams, and rivers as described previously. The Plan will also be amended as necessary if a spill causes a change in design, construction, operation, or maintenance. Such amendments shall be fully implemented as soon as possible, but not later than six months after such change occurs. Amendments to the Plan will be recorded in the Amendment Log, Appendix B.

In addition, in accordance with 40 CFR 112.5(b), a complete review and evaluation of this SPCC Plan will be conducted at least once every five years by the operating group(s) and/or Facility Operations Director, and by EPC-CP. As a result of this review and evaluation, the SPCC Plan will be amended within six months of the review to include more effective spill prevention and control technology, if such technology will significantly reduce the likelihood of a spill event from the facility, and if such technology has been field proven at the time of review.

The last item identified as underway in Section 1.1 Conformance related to the seven new 500-gallon tanks (5 for new oil and 2 for waste oil) will need to be verified by a Professional Engineer prior to placing them into service. If all information is consistent with the information contained in this SPCC Plan related to these tanks this change will not require certification by a Professional Engineer (PE). If different tanks, even equivalent tanks, or other information requires modification related to these tanks, their locations, or contingency information differs the SPCC Plan will require certification by a PE.

Changes to the contact lists and the addition of records to the Plan do not require certification by a PE. All amendments that address technical changes that may change the facility's ability to discharge oil will be certified by a PE.

2.0 FACILITY INFORMATION

2.1 Name, Address, Owner, Contacts

The TA-60-1 HES, LOG-HERG Refuelers, and associated equipment is owned by the LANL LOG Division and operated by the LOG-HERG Group. The owner and operator for the facility are:

Facility Owner/Operator

LOG-DO Division
Heavy Equipment, Roads & Grounds (LOG-HERG) Group
Triad National Security LLC (Triad)
Los Alamos National Laboratory
Los Alamos, NM 87545

Contacts

Name	Phone	Title
Brian L. Watkins	667-0562	LOG Division Leader
Larry Velasquez	665-2644	LOG-HERG Group Leader
Chris Sena	667-5113	LOG-HERG Heavy Equipment Shop Superintendent
Dana Parrett	664-0883	LOG-HERG Superintendent
Bob Lechel	665-6912	DEP Team Leader
Jacob L. Knight	665-5880	EPC-CP DEP

2.2 Site Assessment/Location

The following provides site assessment/location for both the HES and the refuelers.

- The HES sits on the Sigma Mesa fully within the Laboratory boundary and within the Sandia watershed. Drainage from the facility flows in a general easterly direction prior to leaving the mesa top and entering Sandia Canyon via a surface drainage feature on the mesa top via either a National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP) discharge location or sheet flow via surface flow within the facility. The primary Sandia Canyon drainage is located over 500 feet from the NPDES MSGP discharge location. The primary Sandia Canyon drainage eventually drains into the Rio Grande.
- All refuelers are typically parked/stored in the southeast "upper lot" area of TA-60-1 (when not being used in the field). The trucks pick up fuel offsite. The truck parking/storage area is located approximately 1000 feet from the primary Sandia

Canyon drainage. Drainage from this area flows in a general easterly direction prior to leaving the mesa top via a surface drainage feature on the mesa top via a storm drain fitted with an insert that filters for oil via surface flow within the facility.

2.3 Description

LOG is a multidisciplinary organization whose primary mission is to provide the Laboratory with safe, reliable, and efficient infrastructure, maintenance and utilities support. LOG customers reside within 43 square miles involving approximately 1,400 building facilities. The LOG-HERG group provides heavy equipment (including refueling), and roads and grounds services throughout the Laboratory. The

TA-60-1 HES provides vehicle maintenance and repair services for LANL's heavy equipment and other General Services Administration (GSA) vehicles. Refuelers are used to refuel generators, fuel storage tanks, and vehicles around the Laboratory. A list of designated refuelers and refueling locations are included in Section 2.3.2, and in addition, some refueling may occur in undesignated or remote locations for emergency vehicles and portable emergency generators.

2.3.1 Tanks

Tanks containing oil covered by this SPCC within the TA-60-1 HES are listed below. It should be noted the TA-60-1 HES is also covered under a separate MSGP SWPPP.

525-gallon Plastic Used Oil Tank

There is a 525-gallon plastic used oil tank located in the northeast section of the building outside of the lower east bays, Photograph 1. The tank is located within a fiberglass containment unit that collects incidental spills for cleanup when oil is poured into the manway top. The secondary containment has a volume of 724 gallons (before displacement by tank itself). Drainage from this location flows to the oil/water separator just down gradient of the tank. The oil water separator discharges to the Laboratory sanitary waste water collection system. In addition, the unit is covered by a metal canopy so it will not be exposed to storm water.

Photograph 1: 525-Gallon Used Oil Tank Located In Northeast Section of TA-60-1

125-gallon Plastic Used Oil Tank

An enclosed 125-gallon plastic used oil tank is located in the southeast section of the building and is used by the shops in the upper south bays, Photograph 2. The oil tank sits on a "Save-A-Spill" containment pad with an approximate volume of 90 gallons. Drainage from this locations flows to the concrete surface in the yard and would be contained by shop personnel with spill kit materials. This tank will be removed from service and replaced with a new 500-gallon STI UL 142 rating double wall tank. Information related to the new tank is provided at the bottom of Section 2.3.1 in this SPCC Plan.

Photograph 2: 125-Gallon Used Oil Tank Located In Southeast Section of TA-60-1

Poly-storage Containment Unit

There is also an enclosed, three-section poly-storage containment unit on the east side of the building just south of the lower bays, Photograph 3. This storage is used for drums containing hydraulic fluid, diesel exhaust fluid, antifreeze and washer fluid. The concrete secondary containment unit these units sit inside of is equipped with a locking drainage valve and has a volume of 120 gallons. Each enclosed section on a spill pallet has a secondary containment volume of 66 gallons. Drainage from this location flows to a trench drain and then to oil/water separator which discharges to the sanitary wastewater collection system.

Photograph 3: Poly-storage Containment Unit Located On East Side of TA-60-1

Oil Storage Within Concrete Secondary Containment

There are several drums with oil and other petroleum products stored outside at the southeast corner of the building. Photograph 4. The drums are kept stored within a concrete-bermed secondary containment unit with a locking drainage valve. The secondary containment has a volume of approximately 1,150 gallons. Within the last 5 years there have been only 3 or less 55-gallon drums stored in this containment and additional drum storage is not expected. If additional oil drums are stored a maximum of 12 shall be stored within the secondary containment. Drainage from this location flows to the concrete surface just outside of the bay door where it could be contained by shop personnel. This area drains to the NPDES MSGP outfall which is fitted with a PetroBarrier™ prior to entering an existing conveyance to Sandia Canyon.

Photograph 4: Various Oil Storage on Southeast Side of TA-60-1 Within Concrete

Bulk Oil Drums Within TA-60-1

There is one 55-gallon drum for unleaded fuel waste and one 55-gallon drum for diesel fuel waste in both the upper and lower shops for a total of four total fuel waste drums in the building. There are two 55-gallon drums with new hydraulic oil and two 55-gallon drums with motor oil in the lower shop There is also a bulk 240-gallon motor oil tank in the upper shop, and three bulk 125-gallon tanks for motor and hydraulic oil in the lower shop that are used for servicing vehicles with new motor oil and hydraulic fluid, Photographs 5 and 6. Oil storage at the facility will be upgraded by replacing the 240-galllon, 125-gallon tanks, and all new motor oil and hydraulic oil drums with three 500-gallon tanks described in later in Section 2.3.1 of this SPCC Plan. Drainage from the locations of oil storage tanks is to existing floor drains throughout the building. These floor drains connect to the oil/water separator for the facility. The oil/water separator discharges to the sanitary wastewater collection system. Any oil accumulation (mainly from vehicle washing) is pumped and removed every 3 weeks along with all other stored waste oil. Bulk oil and drums sit on spill pallets capable of containing catastrophic releases.

Photograph 5: 240-gallon Oil Storage Tank in TA-60-1 Upper Shop

Photograph 6: Three 120-gallon Oil Storage Tank in TA-60-1 Lower Shop

Oil Filter Crushing Operations

Oil filter crushing operations take place within the building at the lower northeast bay and upper southeast bay, Photograph 7. As filters are crushed any oil released is contained in 5 gallon buckets and transferred to the nearest used oil tank or drum. The crushed filters are placed into a drum for recycle. Drainage from oil filter crushing operations is to existing floor drains throughout the building. These floor drains connect to the oil/water separator for the facility. The oil/water separator discharges to the sanitary wastewater collection system.

Photograph 7: Oil Filter Crushing Operations in TA-60-1

500-Gallon Above Ground Oil Storage Tanks

Seven 500-gallon double walled above ground storage tanks (Photographs 8 and 9) will be used in the HES. Photograph 8 shows the dispensing tanks for new product. The waste oil tanks are identical except they are not fitted with dispensing equipment. Details related to these seven tanks are as follows:

- These tanks are compatible with the contents to be stored:
    - motor oil (three tanks);
    - hydraulic oil (two tanks);
    - waste oil (two tanks).
- Tank details:
    - Double walled outer shell on each tank provide sufficient volume to contain the entire contents of each tank.
    - Listed by Southwest Research Institute (SWRI) as built in accordance with Underwriters Laboratories (UL) 142 rating (Photograph 9).
    - Each tank has a lockable fill cap with vent, a level gage
    - Dimensions: 46-in wide, 46-in tall, and 60-in long

The locations of these tanks are as follows:

- One 500-gallon waste oil tank located adjacent to southeast section of building where existing 125-gallon waste oil tank (Photograph 2) will be removed.
- One 500-gallon motor oil tank in upper shop where existing 240-gallon motor oil tank (Photograph 5) will be removed.
- One 500-gallon motor oil (Photograph 6) and one 500-gallon hydraulic oil tank in lower shop where two existing 120-gallon motor oil and one existing 120-gallon hydraulic oil tank will be removed in addition to four 55-gallon containers.
- Within the outside storage shed located east of the building, one 500-gallon motor oil, one 500-gallon hydraulic oil, and one 500-gallon waste oil tank will be installed.

There will be a net increase in oil storage of 2,320 gallons as a result of removing the four stationary tanks and four 55-gallon containers within the building as described above.

Drainage from the four tanks being placed within TA-60-1 is to existing floor drains throughout the building. These floor drains connect to the oil/water separator for the facility. The oil/water separator discharges to the sanitary wastewater collection system. Drainage from the three tanks being placed in the outside storage sheds is to the east toward the existing NPDES MSGP outfall. This outfall discharges to an existing conveyance into Sandia Canyon as described in Section 2.2 of this SPCC Plan. A Facility Diagram showing the location of these tanks is provided in Appendix C.

Photograph 8: 500-Gallon Oil Tanks for Hydraulic Oil and Motor Oil Storage At TA-60-1

Photograph 9: 500-Gallon Oil Tanks Manufacturer Information for Hydraulic Oil, and Motor Oil Storage At TA-60-1

2.3.2 Refuelers and Oil Transfer Equipment/Operations

2.3.2.1 Refuelers

The SPCC amendments streamline requirements for mobile refuelers. Mobile refuelers are exempted from the sized secondary containment requirements. However, the general secondary containment requirements still apply. General secondary containment addresses the most likely discharge from the container and from oil transfers into and from the mobile refueler. General secondary requirements do not prescribe a size for a secondary containment structure but require that the containment system prevent the spilled oil from escaping the system prior to clean up occurring and that appropriate containment and/or diversionary structures or equipment to prevent a discharge to navigable waters or adjoining shorelines. Usage of the Remote Refueling Checklist found in Appendix D will identify the type of general secondary containment to be provided during refueling operations and to ensure that it is properly implemented.

Refuelers pick up fuel offsite. The refuelers parking/storage area is located in the southeast "upper lot" are of TA-60-1 (when not being used in the field). Currently the area drains to a storm drain insert (Photograph 10) that filters for oil. Oil absorbing PetroBarriers™ units (Appendix H) have been installed in the storm drain inlets at the southeast corner of the paved lot. The PetroBarriers™ are designed to allow to water to flow through while capturing small amounts of oil (oil sheens) from the water. They are also designed to completely stop the flow of all liquid if a release of oil or fuel were to flow into the storm drain. The following refuelers are utilized under this SPCC Plan.

All of the refuelers are in compliance with Department of Transportation (DOT) standards and maintain current certifications. The tank truck fuel levels are checked by sticking the tanks once a week, the hoses are equipped with meters to track the amount dispensed. Each truck is equipped with a spill kit. The PetroBarriers ™ specification sheet can be found in Appendix H of this SPCC Plan.

Photograph 10: TA-60-1 parking area storm drains equipped with PetroBarriers™

G82 0134S Fueling Truck

This truck, Photograph 11, has a 2,000-gallon capacity diesel dispensing tank and a 1,000-gallon gasoline dispensing tank. The dispensing hoses are equipped with automatic overfill shutoffs and a manual emergency shut off valve at the truck. This truck was previously licensed under G82-0479S but the tank was placed on a new chassis, G82-0134S, in 2018.

Photograph 11: TA-60 G82 0134S (formerly G82 047S) Fueling Truck

E304640 Refueling Truck:

This truck, Photograph 12, is a Kenworth Chassis with a 4,400-gallon combined capacity Trans-Tech Tanker. It has a 2,000-gallon capacity for diesel, 1,000-gallon capacity for unleaded gasoline, 700-gallon capacity for E85, and a 700-gallon capacity B20 BIO diesel/reserve tank. The fuel dispensing hoses are equipped with automatic over-fill shutoffs and there is a manual emergency shut off valve at the truck. This truck replaced G82 01079 in 2016.

Photograph 12: TA-60 E304640 Fueling Truck (replacement for G82 01079)

E29904 Fueling Truck

The 2,800-gallon truck, Photograph 13, has a 2,000-gallon E85 dispensing tank and an 800-gallon gasoline dispensing tank. The dispensing hoses are equipped with automatic overfill shutoffs and a manual emergency shut off valve at the truck.

Photograph 13: TA-60 E29904 Fueling Truck

G82 0672D Service Truck

The service truck, Photograph 14, supplies oil, antifreeze, and grease on an on-call basis to undesignated or remote areas via onboard pumps. The truck is equipped with skid mounted tanks with reel-mounted dispensing hoses that have automatic overfill shutoffs. There are four 55-gallon polyethylene tanks and a 120 lb grease container all of which are skid mounted on the truck bed. The truck has pumps for dispensing liquids and grease through hose reels located on a fixed shelf on a lube skid that allows them to be accessed from the rear of the load-bed area.

Photograph 14: TA-60 G82 0672D Service Truck

2.3.2.2 Oil Transfer Equipment/Operations

There is no transfer piping associated with this plan. National Fire Protection Association (NFPA) 385 Tank vehicles for Flammable and Combustible Liquids, Section 9.2.1, states that loading and unloading of tank vehicles shall be done only in approved locations. Filling of the tank trucks is performed offsite. The Laboratory's Emergency Operations Center (EOC) tanks are fueled by an outside operator. All refueling operations completed by LOG-HERG staff across Laboratory facilities are covered under this SPCC Plan. Facility specific SPCC Plans may require additional site specific fueling procedures that must be followed. There are several facilities at the Laboratory where refueling occurs but the oil capacity is under the threshold to require a SPCC. In general, the areas where refueling operations will take place do not have dikes, oil catch basins, or a diversion system. General secondary containment requirements apply and active containment measures will be used. Specific spill prevention and containment measures for facility transfer operations are listed below, and the table shows the methods to be used at each site.

- The delivery system is equipped with an automatic overfill shutoff nozzle and a manual safety valve at the tank to shut off fuel flow.
- Utilize and properly follow the Remote Refueling Checklist (Appendix D).
- Refueling operations are monitored by personnel at all times and emergency spill absorbent materials are located on each truck in service for immediate use if needed.
- The refueling activity will occur in a designated area that would prevent a spill from entering a watercourse before the spill could be cleaned up. The area should be a flat gravel lot or asphalt area with temporary storm drain protection or temporary berms installed as needed. If temporary BMPs are specified for a location, fueling will not occur unless the temporary BMP has been installed by the facility or refueler team.
- If refueling must occur at an undesignated location, the location will be inspected for adjacent storm drains and ditches. Temporary BMPs will be installed if required.
- Refueling will not occur during precipitation events in areas exposed to storm water.
- Storage tanks will not be filled over 90% unless the tank is equipped with a 95% overfill prevention valve. The facility must determine the current level of fuel in the tank and request the specific amount to be delivered to not overfill their tank.
- Storage tanks should be equipped with a level gage visible to refuelers. It is recommended that tanks be equipped with failsafe devices to prevent overfilling.
- Vehicles must not be filled past the point when the dispensing nozzle shutoff is activated, i.e., tanks must not be topped off with additional fuel.
- Future improvements may include installation of sight levels on tanks.

Stationary facilities with SPCC plans must describe facility transfer operations and appropriate procedures and containment. Table 2 identifies these facilities at the Laboratory where transfer operations are covered under a different SPCC Plan than this one. Table 2 also identifies the SPCC Plan where the associated procedures can be found. Table 3 identifies stationary facilities which are covered under this SPCC Plan.

Table 2. Stationary Facilities At LANL With Possible Fuel Transfer Operations Covered Under a Separate SPCC Plan

Designated Fueling Locations SPCC Regulated Facilities: Stationary Equipment	Site Specific Filling Procedure	General Secondary Containment Method (for refueling area)
TA-16 WETF Generator	described in facility SPCC Plan	• Temporary berms • Spill kit • Absorbent pads under nozzle
TA-50 Artic Generator	described in facility SPCC Plan	• Drain cover • Spill kit • Absorbent pads under nozzle

Table 2. Stationary Facilities At LANL With Possible Fuel Transfer Operations Covered Under a Separate SPCC Plan

Designated Fueling Locations SPCC Regulated Facilities: Stationary Equipment	Site Specific Filling Procedure	General Secondary Containment Method (for refueling area)
TA-3 Power Plant Emergency Generator	described in facility SPCC Plan and UOI 66-20-170	• Spill container under refueling hose and absorbent pads • Attended by two personnel
TA-60 Emergency Generator Trailer (stored at TA-60 Electrical yard but location will change when in use)	described in facility SPCC Plan	• If required at deployed location: temporary berms • Spill kit • Absorbent pads under nozzle • Attended by two personnel
TA-33 Generator	described in facility SPCC Plan	• Spill kit • Absorbent pads under nozzle • Attended by two personnel
TA-3 SAS	described in facility SPCC Plan	• Spill kit • Absorbent pads under nozzle • Attended by two personnel
TA-48-270 Generator	described in facility SPCC Plan	• Spill kit • Absorbent pads under nozzle • Attended by two personnel
TA-48-271 Generator	described in facility SPCC Plan	• Spill kit • Absorbent pads under nozzle • Attended by two personnel
TA-55 PF8 Generator	described in facility SPCC Plan	• Spill kit • Absorbent pads under nozzle • Attended by two personnel
TA-55-362 CAS	described in facility SPCC Plan	• Spill kit • Absorbent pads under nozzle • Attended by two personnel
TA-55-364 Facility Emergency Generator	described in facility SPCC Plan	• Spill kit • Absorbent pads under nozzle • Attended by two personnel
TA-55 Facility Tanks in Sumps	described in facility SPCC Plan	• Spill kit • Absorbent pads under nozzle • Attended by two personnel
TA-55-551 Utility Building	described in facility SPCC Plan	• Spill kit • Absorbent pads under nozzle • Attended by two personnel
TA-55-583, 584, 585 RLUOB Generators	described in facility SPCC Plan	• Spill kit • Absorbent pads under nozzle • Attended by two personnel
TA-55 Vehicle Refueling	described in facility SPCC Plan	• Spill kit • Absorbent pads under nozzle • Attended by two personnel

Table 2. Stationary Facilities At LANL With Possible Fuel Transfer Operations Covered Under a Separate SPCC Plan

Designated Fueling Locations SPCC Regulated Facilities: Stationary Equipment	Site Specific Filling Procedure	General Secondary Containment Method (for refueling area)
TA-3 Power Plant Vehicle Refueling	described in this SPCC Plan	• Spill kit • Absorbent pads under nozzle • Attended by two personnel
TA-53 "Orange Box" Vehicle Fueling	described in this SPCC Plan	• Spill kit • Absorbent pads under nozzle • Attended by two personnel

Table 3. Stationary Facilities At LANL With Possible Fuel Transfer Operations Covered Under This SPCC Plan

Designated Fueling Locations: Stationary Equipment	General Secondary Containment Method
TA-3-1400 generator	• Attended by two people • Spill kit • Absorbent pads under nozzle
TA-3-1498 LDCC generator	• Attended by two people • Spill kit • Absorbent pads under nozzle
TA-35-88 generator	• Attended by two people • Spill kit • Absorbent pads under nozzle
TA-35-27 generator	• Attended by two people • Spill kit • Absorbent pads under nozzle
TA-3-40 generator	• Attended by two people • Spill kit • Absorbent pads under nozzle
TA-16-218 generator	• Attended by two people • Spill kit • Absorbent pads under nozzle
43-1 generator	• Attended by two people • Spill kit • Absorbent pads under nozzle
59-1 generator	• Attended by two people • Spill kit • Absorbent pads under nozzle
64-1 generator	• Attended by two people • Spill kit • Absorbent pads under nozzle
73-1 generator	• Attended by two people • Spill kit • Absorbent pads under nozzle

TA-33 portable generators	• Attended by two people • Spill kit • Absorbent pads under nozzle

Refueling activities will be performed only at designated locations whenever possible. If on-call refueling of snowplows, lawnmowers etc. is required, it must be done at one of the designated locations throughout the lab identified in Table 4. If refueling must occur at an undesignated location, the location will be inspected for adjacent storm drains and ditches, and the Remote Refueling Checklist (Appendix D) will be followed in addition to implementing the required temporary BMPs. Procedures are discussed in earlier in this Section.

Table 4. On-Call Refueling Locations At LANL

Designated Fueling Locations: Vehicles and Mobile Equipment	General Secondary Containment Method
Heavy Equipment Shop TA-60-1	• Attended by two people • Spill kit
PTLA vehicle fueling TA-64	• Attended by two people • Spill kit
Utilities and Infrastructure Vehicles (TA-3-223, TA-46 SWSC)	• Attended by two people • Spill kit
TA-16 HE area	• Attended by two people • Spill kit
TA-54 fueling truck parking area TA-54 truck: (heavy equipment refueling area at end of Mesita del Buey road in Area G and at 54-315 access control to Area G)	• Spill kit
TA-60-250 Roads and Grounds	• Attended by two people • Spill kit
Unplanned locations: Emergency operations, remote well sites, etc.	• Attended by two people • Spill kit • Temporary BMPs will be installed if location requires.

2.3.3 Secondary Containment Drainage Options

A description of the secondary containment provided for stationary locations is provided in Section 2.3.1. The poly-storage containment unit and the concrete secondary containment for oil storage contain drains which may be opened. These two locations are covered which minimize potential accumulation of precipitation. Precipitation which does occur within the secondary containment units is usually small and is allowed to evaporate. However, if it is necessary to drain secondary containment to ensure sufficient storage capacity valves exist. These valves must be maintained in a closed position unless the containment is being drained of standing water. If precipitation will be drained, follow the process delineated in the following paragraph.

Prior to any discharge, storm water accumulations must meet Federal and State water quality standards. To ensure compliance with these standards, the following steps will be used for secondary containment unit discharge operations:

- Visually inspect accumulation to ensure that the water does not possess oil sheen, odor, or other constituents that could result in a harmful discharge.
- Take a pH reading.
- Note: The pH reading must be between 6 and 9.
- Notify facility DEP prior to a discharge.
- When necessary, notify EPC-CP to obtain authorization for release and for testing of contaminates other than pH.
- After authorization is received open the valve and allow the containment to drain via gravity.
- This is a manned process and at no time should the drain valve be left unmanned while the drain valves is in the open position.
- Close drain valve when storm water has drained or if the drain valve will be left unmanned while in the unopened position.
- Complete the Liquid Discharge Form (Appendix F) with the help of the DEP. The DEP will submit a copy to EPC-CP and retain a copy with the SPCC Plan.

The remaining units either have integral secondary containment for the tanks or the building provides secondary containment.

3.0 SPILL HISTORY

There have been no reportable spills at facilities covered under this SPCC Plan. There have been unreportable spills at facilities covered under this SPCC Plan. Appendix E provides this information in action to containing the current spill tracking log.

4.0 POTENTIAL SPILL VOLUMES AND RATES

The following sections provide information on the potential for spill events at the facility while Section 5 provides information on the established procedures to be implemented in the event of a spill. The Operating Group Line Management is the person accountable for discharge prevention and reporting to facility management.

4.1 Potential Event, Volume Release, Rate of Release

Table 5. Potential for Spills at TA-60-1 HES and Refueling Trucks

Location	Volume Release (gallons)	Type of failure (discharge scenario)	Secondary containment/method/capacity and response measures
Poly-storage containment unit	55 gallons	Catastrophic	• Secondary containment provided in excess of 100% capacity of largest storage container. • Spill control kits are on-site for minor spills.
Oil storage within secondary containment	55 gallons	Catastrophic	• Secondary containment provided in excess of 100% capacity of largest storage container. • Spill control kits are on-site for minor spills.
525-gallon tank in northeast section of TA-60-1 outside of lower east bay	525 gallons	Catastrophic	• Secondary containment provided in excess of 100% capacity of container. • Flows to oil water separator for oil recovery with discharge to sanitary wastewater collection system. • Spill control kits are on-site for minor spills. • Spill operations have personnel present which would minimize quantity of release.
All oil storage within TA-60-1 including four 500-gallon tanks located within TA-60-1	500 gallons	Catastrophic	• Tanks are double walled. • Building TA-60-1 provides secondary containment in excess of 100% capacity of volume. • Spill control kits are on-site for minor spills. • Spill operations have personnel present which would minimize quantity of release.
Three 500-gallon tanks located in outside storage shed	500 gallons	Catastrophic	• Tanks are double walled. • Spill control kits are on-site for minor spills. • Flows to oil water separator for oil recovery with discharge to sanitary wastewater collection system. • Spill operations have personnel present which would minimize quantity of release.
Spill/leaks outside of containment area	55 gallons	Spill	• Spill operations have personnel present which would minimize quantity of release. • Spill control kits are on-site and adequately stocked.
Tank Trucks	2,000 gallons	Catastrophic	• PetroBarrier™ protected storm drain in truck storage area.
Product Transfer Areas	5 gallons	Spill	• Oil spill contingency plan. • Temporary berms, depends on location, see table in Section 2.4.

4.2 Potential Spill Discharge Flow and Nearest Watercourse

Table 6. Potential Spill Discharge Flow and Nearest Watercourse

Potential Event	How/Where Spill Could Flow	Nearest Watercourse
All Oil Storage in TA-60-1 HES	Oil inside facility would flow to drains that discharges to an oil/water separator which discharges to the sanitary wastewater collection system.	Sandia Canyon main drainage via surface drainage of approximately 1000 feet from storm drain outlets which are also NPDES MSGP permitted outfalls with additional controls.
All Oil Storage outside TA-60-1 HES	Oil inside facility would flow to either: (1) trench drains that discharge to an oil/water separator which discharges to the sanitary wastewater collection system or (2) sheet flow toward a NPDES MSGP permitted outfall.	Sandia Canyon main drainage via surface drainage of approximately 1000 feet from storm drain outlets which are also NPDES MSGP permitted outfalls with additional controls.
Refueling Trucks Storage Area at TA-60-1 Area	Sheet flow to a storm drain fitted with a PetroBarrier™ followed by sheet flow east towards Sandia Canyon.	Sandia Canyon main drainage via surface drainage of approximately 1000 feet from storm drain outlets which are also NPDES MSGP permitted outfalls with additional controls.
Product Transfer Areas	Spills during refueling operations / spills	Multiple dependent upon location, refer to Appendix E.

5.0 SPILL PREVENTION AND CONTROL

5.1 Spill Prevention Features and Practices

Work at this facility is performed using LANL's five step Integrated Safety Management approach, which evaluates a task and identifies potential hazards such as a spill event to achieve effective spill response training for employees. Personnel involved with facility operations are instructed on safety precautions, initial spill response procedures, and how to use available spill cleanup material. The DEP for the facility is the designated person responsible for spill prevention, reporting and maintenance of the spill control equipment at the Facility. EPC-CP is responsible for providing available training programs. In addition to annual training, periodic spill prevention briefings may be conducted as necessary to inform operating personnel about spill events or failures, malfunctioning components, recently developed precautionary measures, or other SPCC-related issues.

- *Additional procedures for early detection and timely notification of an oil discharge* - Two personnel are present to monitor the refueling operations. The parking area is visited daily on work days. Notifications will occur as identified in Table 5.

Spill Control Equipment: Each oil storage areas within TA-60-1 has a spill kit in close proximity to the storage area. Each of the refuelers is equipped with a spill kit which is present during all refueling operations and when the truck is not in used and parked in the areas identified in this SPCC Plan. Spill kits that contains adequate universal sorbent or spill control pillows to handle minor spills and remove any oil or sheen from storm water collected in the secondary containments, as appropriate. Each spill kit also contains goggles, gloves, bags, ties, scoop and labels and shovels. Spill control material storage areas shall be inventoried regularly to assure that the proper materials are available in sufficient quantity and of sufficient quality to minimize the spread of oil products in the case of a spill prior to the arrival of response teams.

Spill Reporting: Spill reporting is accomplished through SPCC Plan documentation, Emergency Management Division-Emergency Response (EMD-ER) notification, and EPC-CP procedures. EPC-CP will complete required state, and federal reporting, including federal reporting of spills in excess of 1,000 gallons or two combined spills greater than 42 gallons in 12 months in accordance with Laboratory and Department of Energy (DOE) policies and federal and state regulatory reporting requirements per P322-3, *Performance Improvement from Abnormal Events*. https://int.lanl.gov/policy/documents/P322-3.pdf.

Table 7. Definition of authorities, responsibilities, and duties of all entities involved in oil removal operations

Authorities	Spill Reporting Responsibilities	Response Duties
Onsite workers	**Contact** EMD-ER at 667-2400 (non-emergencies) or 911 (emergencies), if necessary. Notify DEP. If spill occurs after hours or on a weekend, please call the Spill Pager (664-7722) and EPC-CP on-call staff will respond	Qualified workers may, but are not required to, clean up simple/small spills
Facility Spill Team	Notify DEP	Qualified workers may clean up simple/small spills and manage waste per LANL procedures above.
EMD-ER	If EMD-ER is notified of a spill event, they will contact all additional applicable parties including EPC-CP	Respond per contingency plan
DEP	Complete appropriate forms, notify EPC-CP, and document spill in SPCC Plan in accordance with Section 1.3.2	For small spills, contact the appropriate Waste Generator and Waste Management Coordinator for disposal.
EPC-CP Water Quality	Completion of spill reports that are reportable to federal and state agencies. Provide oversight for spill mitigation activities.	Provide information to federal and state agencies.

5.2 Oil Spill Contingency Plan

All spills require response. Any spills that have the potential to enter a drain or water course, require immediate response and must be reported immediately to LANL EMD-ER office and EPC-CP.

Small incidental releases (e.g., vehicle oil, grease, fuel drip spots) and spills into the secondary containment will be addressed as part of good housekeeping and be cleaned up and properly disposed as soon as possible (usually on the day the spill was discovered). The cleanup will be conducted by properly trained personnel. It is the responsibility of the FOD to provide access to an appropriate Waste Generator and Waste Management Coordinator who is properly trained to dispose of spill materials.

All other spills will be reported to the Principal Facility Operator who will notify the Facility Manager, who then notifies the Utilities Operations Manager. The Operations Manager is responsible for notifying LANL EMD-ER and the FOD. If neither manager is available the principal operator will notify EMD-ER directly. The principal operator will address, if no health hazards exits, the cause of the spill and contain as much of the spill as possible until the EMD-ER team arrives.

The EMD-ER will determine to what level LANL's EMD-ER plan will be activated. In addition, appropriate cleanup procedures will be followed and the appropriate individuals or organizations responsible for the completion of appropriate spill reports will be notified.

Table 8. Spill Contact Information
If fire or explosion is present, or if the potential for such exists, the situation must be reported by dialing 911 or activating a fire pull box if available at the facility.

LANL 24- hr. Emergency Operations Support Center (EOSC) Number: 667-2400.

Name	Title	Work	Pager	Cell
Andrew Erickson	FOD, Utilities & Infrastructure – Division Office	665-0106	664-5913	695-4122
Brian Watkins	LOG Division Leader	667-0562	664-5921	412-7882
Larry Velasquez	LOG-HERG Group Leader	665-2644		695-6949
Chris Sena	LOG-HERG Heavy Equipment Shop Superintendent	667-5113		551-4803
Robert Lechel	DSESH-EPC-CP Team Lead	665-6912	664-4383	699-7558
EM&R	24 hour emergency contact	667-2400		
Jacob Knight	DEP	665-5880		257-8985

5.3 Security

TA-60-1 HES, TA-60-1 truck storage areas, and TA-54 are presently access-controlled areas. These areas are fenced and have gates, which are locked when the facility is unattended after 5 PM

weekdays and on weekends. Lighting at the facility is adequate to detect potential night spills and to deter vandals.

6.0 INSPECTIONS

Inspections include monthly inspections, annual SPCC walk around inspections, and certified inspections. Procedures for each are detailed below. Records of each are kept in accordance with Section 7.0, Record Keeping. In the event of a problem, the deficiency is documented on the applicable inspection form and corrective action will be taken. Any identified leaks or problems associated with the system will be promptly corrected, and any oil accumulations will be removed.

Table 9. Inspection Summary

Type	Frequency	Inspector
Periodic Inspections	Monthly	DEP
Annual SPCC	Annual	EPC-CP
Certified - DOT	Annual	Outside Contractor
Brittle Failure	Not applicable	N/A

Various inspections are conducted at the units. These inspections include a daily inspection (checklist 41-20-001.1 R0) performed by the principal operator, monthly walk-around inspection by the DEP and an annual EPC-CP SPCC inspection. Records of each inspection are kept as described in Section 7.0 (Record Keeping) or in another appropriate folder or box. Completed Inspection Reports are filed as part of this SPCC Plan in Appendix D. Monthly and refueling operations inspection checklists are kept in a separate binder. A sample of the monthly and refueling operations inspection checklists are included in Appendix D. All of this information is kept in the Principal Operator's trailer located at the facility.

In the event that a problem or concern is identified during an inspection or checklist walk-around, the inspector documents the deficiency or concern on the applicable form. All corrective actions should be planned, implemented and documented. The FOD or his representative would be directly involved with implementing these corrective actions. A record of the Corrective Actions will be kept in Appendix D. All identified leaks or problems associated with the units will be promptly corrected, and any oil accumulations will be removed. Records of these types of problems will be kept on file as part of the SPCC plan according to Section 3.0 (Spill History, and recorded in the spill log in Appendix E).

7.0 RECORDKEEPING

Table 10. Record Location within SPCC Plan

Record Type	Location in SPCC Plan

Certification of the Applicability of the Substantial Harm Criteria	Appendix A
Amendment Log	Appendix B
Inspections (Daily, Monthly, Annual, and State)	Appendix D
Corrective Actions Records	Appendix D
Spill Reports/Spill Tracking Form	Appendix E
Storm Water Discharge	Appendix F
Training Records	Appendix G

These inspection reports identify the date the inspection was performed, facility structural conditions, identified deficiencies; and contain the signature of the inspector.

In the event of a spill, the spill tracking form in Appendix E will be used to describe the spill, corrective action taken, and plans for preventing recurrence. Filled out forms are also maintained in Appendix E. Any discharge of storm water from any of the secondary containment units will be identified through completion of the form in Appendix F. A copy of the completed form will also be sent to EPC-CP and also maintained in Appendix F.

As required by 40 CFR 112.3(e), the SPCC Plan is to be maintained at the facility since the facility is manned at least 4 hours a day. Additionally, inspection procedures, signed inspections, drainage records, and spill reports will be retained as part of this SPCC Plan at the facility for a minimum period of three years. Following completion of the three-year period, the records will be forwarded to the EPC-CP Records Management Team to be retained in accordance with DOE requirements.

8.0 MAINTENANCE INSPECTIONS

Daily Inspection (Good Housekeeping) Walk-Around Checklist: Per DOT requirements the tanker trucks are inspected daily while in operation. Records are kept with the vehicles.

Monthly Visual Inspection: A monthly walk-around inspection of the facility will be performed by a DEP and a facility representative. The inspection form and inspection reports are filed in Appendix D. The inspection form identifies the inspector, inspection date, and identifies facility areas inspected. As part of these inspections, the tanks and refuelers (including tanker attachments and appurtenances) are visually inspected for leaks and for physical condition, including but not limited to rust, corrosion, or bulging. The secondary containment area(s) are inspected to determine if any leaks or spills have occurred, to ensure that the containment is free of storm water, to ensure that there are no physical defects in the containment that could cause it to fail, and to ensure that the containment drain valve is in good condition and locked. Leaks or potential problems will be brought to the attention of the Principal Operator and steps to address these problems through corrective action will be discussed. The inspector will sign the inspection form and place it in Appendix D in a timely manner. The monthly inspection form will be modified if changes in the SPCC regulations are not reflected in the current version.

Annual Inspections: EPC-CP staff performs annual SPCC inspections to access compliance with all aspects of the SPCC Plan including but not limited to recordkeeping, changes to the facility, the condition of the refuelers, storage containers, piping and associated equipment, and the secondary containment unit. This inspection also covers all requirements of the SPCC regulations. An inspection report is sent to the appropriate facility FOD and representatives in a timely manner. Completed annual inspection reports are maintained in Appendix D.

Certified Inspections: The tanker trucks are inspected annually per DOT requirements. All of the other storage tanks and portable containers that are part of this plan are less than 1100 gallons and per STI SP001 only require a periodic inspection as described above

Integrity, Brittle Failure and Catastrophe Inspections: Regulations require an evaluation for risk of discharge or failure due to brittle fracture or other catastrophe for field constructed ASTs that undergo a repair, alteration, reconstruction, or a change in service that might affect the risk of a discharge or failure. There are no field constructed oil storage ASTs at this facility. This evaluation does not apply

9.0 TRAINING

40 CFR Part 112.7 (f) (1) states, ”Train your oil-handling personnel in the operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and, the contents of the facility SPCC Plan.”

Oil handling personnel and personnel that will have SPCC training at this facility include the:

- DEPs,
- Resource Manager,
- Principle Operator, and
- Personnel who conduct re-filling operations.

Required trainings include:

- An online training program (Course: #30441) has been developed that covers spill procedure protocols; applicable pollution control laws, rules, and regulations; and lessons learned - information on known spill events or failures, SPCC Plan elements, and spill response procedures. This self-study course is required at least once yearly for oil-handling personnel at this facility.
- Oil-handling personnel at this facility shall review this SPCC Plan annually and documentation of the training maintained in Appendix G of this SPCC Plan. Additional spill prevention briefings and information on known spill events or failures, malfunctioning equipment, and recently developed precautionary measures is provided to oil handling personnel through a request to EPC-CP or through periodic facility briefings on small spills.
- Site specific training is completed by required reading of this SPCC Plan and is documented in Appendix G.

In addition to the above training, spill response personnel at LANL receive HAZWOPER training that covers spill prevention, control, and cleanup procedures.

The FOD or their representative(s) is responsible for ensuring that oil-handling personnel are properly instructed in the operation and maintenance of equipment at this facility to prevent the discharge of oil. Employee training programs must instill in oil-handling personnel, at all levels of responsibility, a complete understanding of the following:

- Contents of facility SPCC Plan
- General facility operations and maintenance of equipment
- The SPCC program
- Procedures for operator observation inspections
- Site safety hazards
- Practices for preventing spills
- Procedures for responding properly and rapidly to spills
- Protocol used to report spills
- Spill events or failures, malfunctioning components, and recently developed precautionary measures
- Additional applicable pollution control laws, rules, and regulations

Prior to the initiation of work, oil-handling personnel also receive LANL Hazard Communications (HAZCOM) training which covers spill prevention, control, and cleanup methods. Additional spill prevention briefings and information on known spill events or failures, malfunctioning equipment, and recently developed precautionary measures is provided to oil handling personnel through the Operating Experience OPEX/Lessons Learned Program, including PD323, LANL Operating Experience Program and P323-1, Operating Experience and Lessons Learned Process (http://int.lanl.gov/org/ddops/aldeshqss/quality-performance-assurance/performance-assurance/opex.shtml), or through periodic facility briefings on small spills. Lessons learned for oil spills will follow the normal lessons learned process for UI.

10.0 DEFINITIONS AND ACRONYMS

10.1 Definitions

See LANL *Definition of Terms*.

"Active" Secondary Containment: Secondary containment features that require deployment or other specific action by the owner/operator (e.g., portable barrier, spill kit, spill response team, a valve that must be closed).

Oil: *Oil* of any kind or in any form, including, but not limited to: fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, or kernels; and,

other oils and greases, including petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil.

Oil-Filled Operational Equipment: Equipment that includes an oil storage container (or multiple containers) in which the oil is present solely to support the function of the apparatus or the device. Oil-filled operational equipment is not considered a bulk storage container, and does not include oil-filled manufacturing equipment (flow-through process). Examples of oil-filled operational equipment include, but are not limited to, hydraulic systems, lubricating systems (*e.g.*, those for pumps, compressors and other rotating equipment, including pump jack lubrication systems), gear boxes, machining coolant systems, heat transfer systems, transformers, circuit breakers, electrical switches, and other systems containing oil solely to enable the operation of the device.

"Passive" Secondary Containment: Permanent installations that do not require deployment or action or the owner/operator (e.g., vault, containment structure, dike)

Spill Prevention, Control, and Countermeasure Plan: The document required by 40 CFR 112.3 that details the equipment, workforce, procedures, and steps to prevent, control, and provide adequate countermeasures to a discharge.

Sufficiently Impervious: 40 CFR 112.7(c) states that the entire secondary containment system, "including walls and floor, must be capable of containing oil and must be constructed so that any discharge from a primary containment system will not escape containment before cleanup occurs."

10.2 Acronyms

See LANL Acronym Master List.

ALDFO	Facilities & Operations Directorate
BMP	Best Management Practice
CFR	Code of Federal Regulations
DEP	Deployed Environmental Professional
DOE	Department of Energy
DOT	Department of Transportation
EMD-ER	Emergency Management Division-Emergency Response
EOC	Emergency Operations Support Center
EPA	Environmental Protection Agency
EPC-CP	Environmental Protection and Compliance-Compliance Programs Group
FOD	Facility Operations Director
GSA	General Services Administration
HAZCOM	Hazard Communications
HES	Heavy Equipment Shop
LANL or the Laboratory	Los Alamos National Laboratory
LOG	Logistics Division

LOG-HERG	Logistics Operations-Heavy Equipment/Roads & Grounds Group
MSGP	Multi-Sector General Permit
NFPA	National Fire Protection Association
NM	New Mexico
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NPDES	National Pollutant Discharge Elimination System
PE	Professional Engineer
Refuelers	Refueling Trucks
SPCC	Spill Prevention Control and Countermeasures
SWPPP	Construction Storm Water Pollution Prevention Plan
SWRI	Southwest Research Institute
TA	Technical Area
Triad	Triad National Security, LLC
UL	Underwriters Laboratories
U.S.	United States

11.0 REFERENCES

- 40 CFR 112
- 20.5 NMAC

12.0 APPENDICES

Appendix A: Certification of the Applicability of the Substantial Harm Criteria
Appendix B: Amendment Log
Appendix C: Site Map and Photograph of Typical Stationary Equipment
Appendix D: Inspection Forms, Inspection Records, and Corrective Action Records
Appendix E: Spill Tracking Log, Notifications, and Spill Reports
Appendix F: Storm Water Discharge Forms
Appendix G: Training Records
Appendix H: PetroBarriers ™ Specification Sheet

Appendix A: Certification of the Applicability of the Substantial Harm Criteria

CERTIFICATION OF THE APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA

Facility Name: TA-60-1 Heavy Equipment Shop, LOG-HERG Refueling Facility and MSS-EWMO TA-54 Refueling Truck
Facility Address: TA-60 and TA-54, LANL, Los Alamos, NM

Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?
Yes _____ No __X__

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?
Yes _____ No __X__

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in accordance with EPA 40 CFR 112, App. C) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?

For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's ''Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments'' and the applicable Area Contingency Plan.

Yes _____ No __X__

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in accordance with EPA 40 CFR 112, App. C) such that a discharge from the facility would shut down a public drinking water intake 2?
Yes _____ No __X__

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a re-portable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?
Yes _____ No __X__

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Brian Watkins	Logistics Division Leader
Name (please type or print)	Title
Signature	Date

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Appendix B: Amendment Log

SPILL PREVENTION CONTROL AND COUNTERMEASURE

PLAN REVIEW PAGE

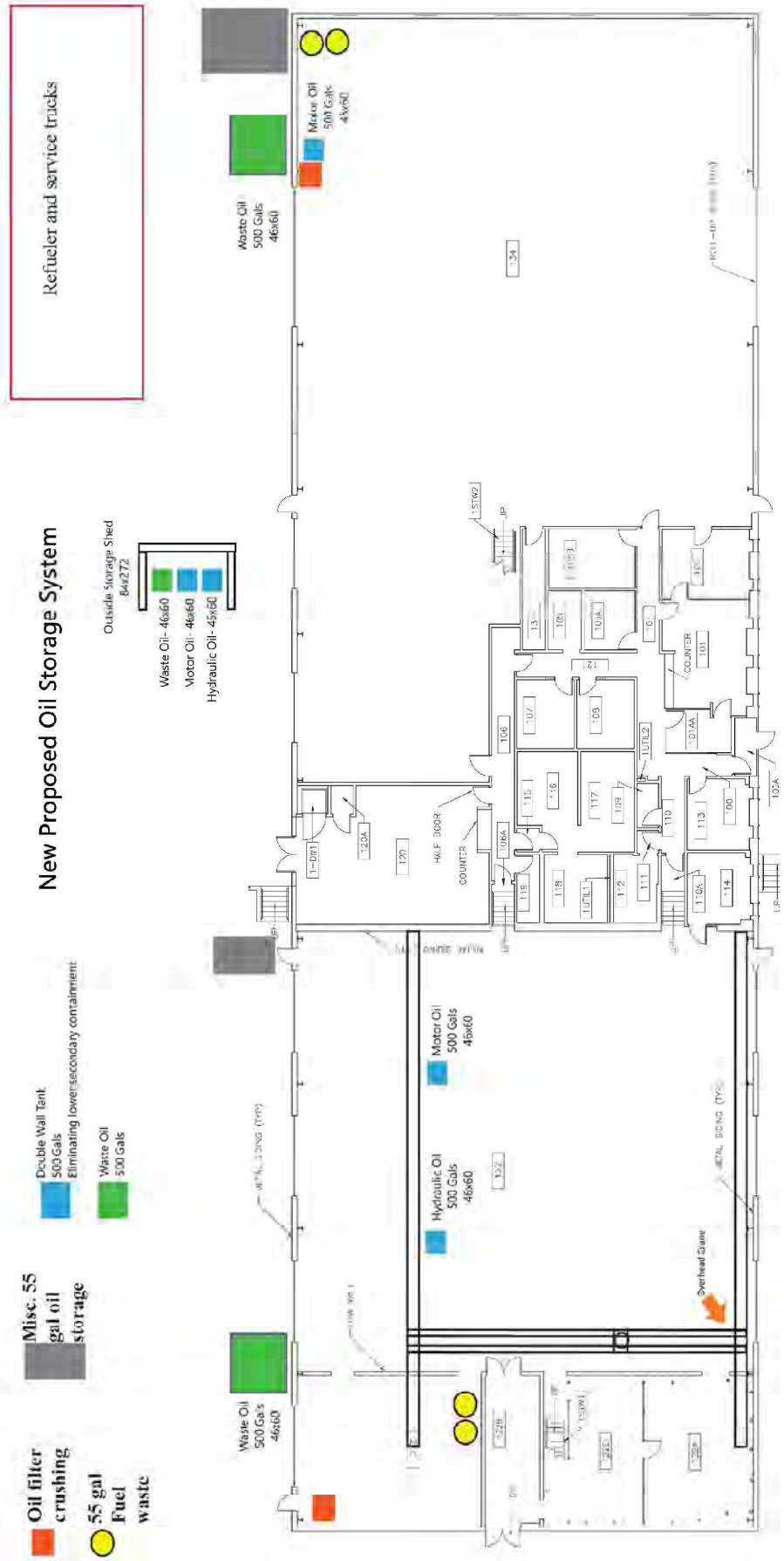
I have completed review and evaluation of the SPCC Plan and will or will not amend the plan as indicated below.

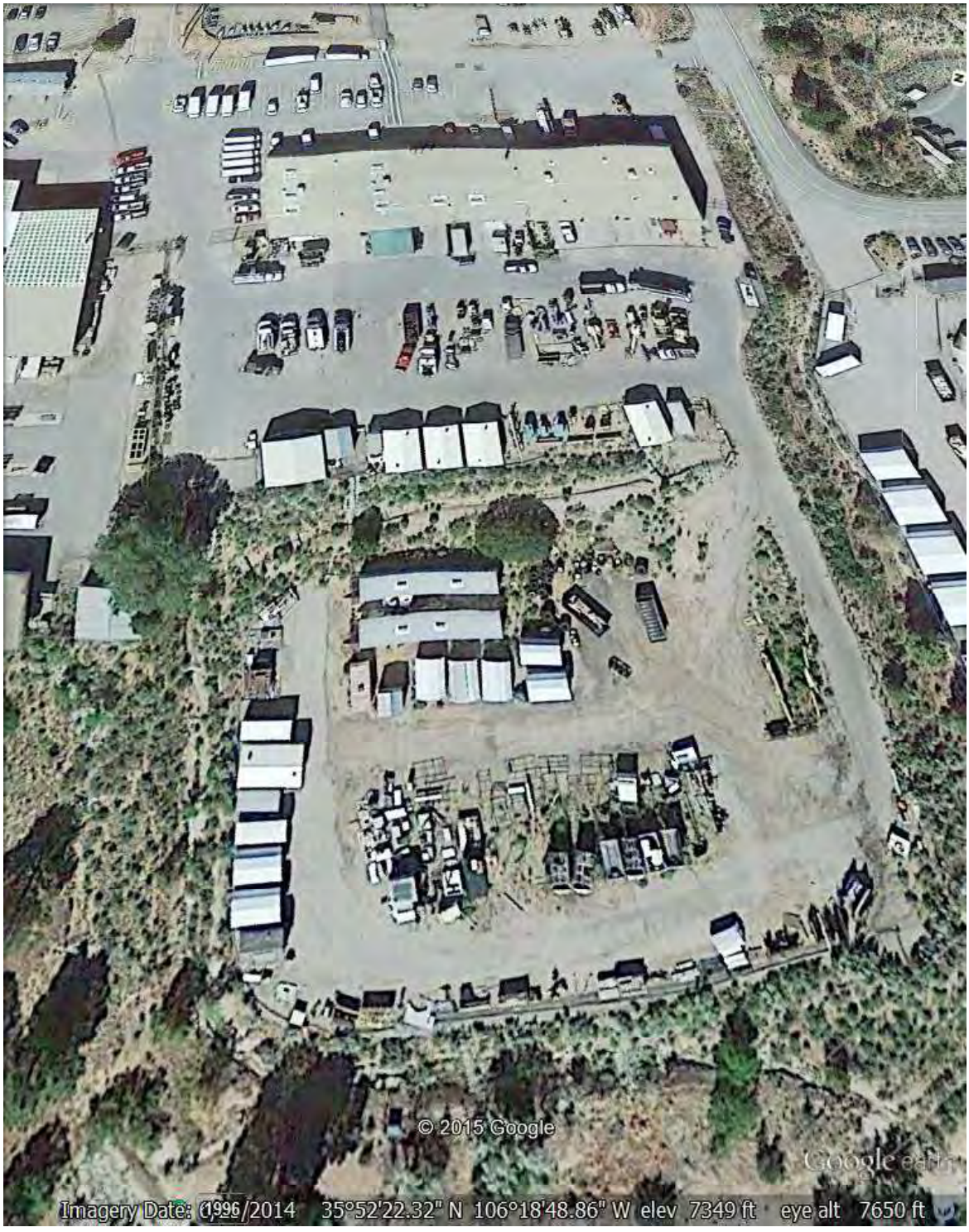
Review Dates	Signature	Name	Title	Amendment & Stamped (yes/no)
March 2010	(See File)	Terrill Lemke	Registered Professional Year	Yes & Yes
April 2015	(See File)	Albert Dye	SPCC Coordinator, ENV-CP	Yes & Yes
September 2020		Steve Pearson	SPCC Coordinator, ENV-CP	Yes & Yes

In accordance with 40 CFR 112.5(b), a review and evaluation of this SPCC Plan is conducted at least once every five years. As a result of this review and evaluation, the SPCC Plan will be amended within six months of the review to include more effective prevention and control technology if: (1) such technology will significantly reduce the likelihood of a spill event from the facility, and (2) if such technology has been field proven at the time of review. Any amendment to the SPCC Plan shall be certified by a Professional Engineer within six months after a change in the facility design, construction, operation, or maintenance occurs which materially affects the facility's potential for the discharge of oil into or upon the navigable waters of the United States or adjoining shorelines. Non-technical amendments do not need to be certified by a Professional Engineer.

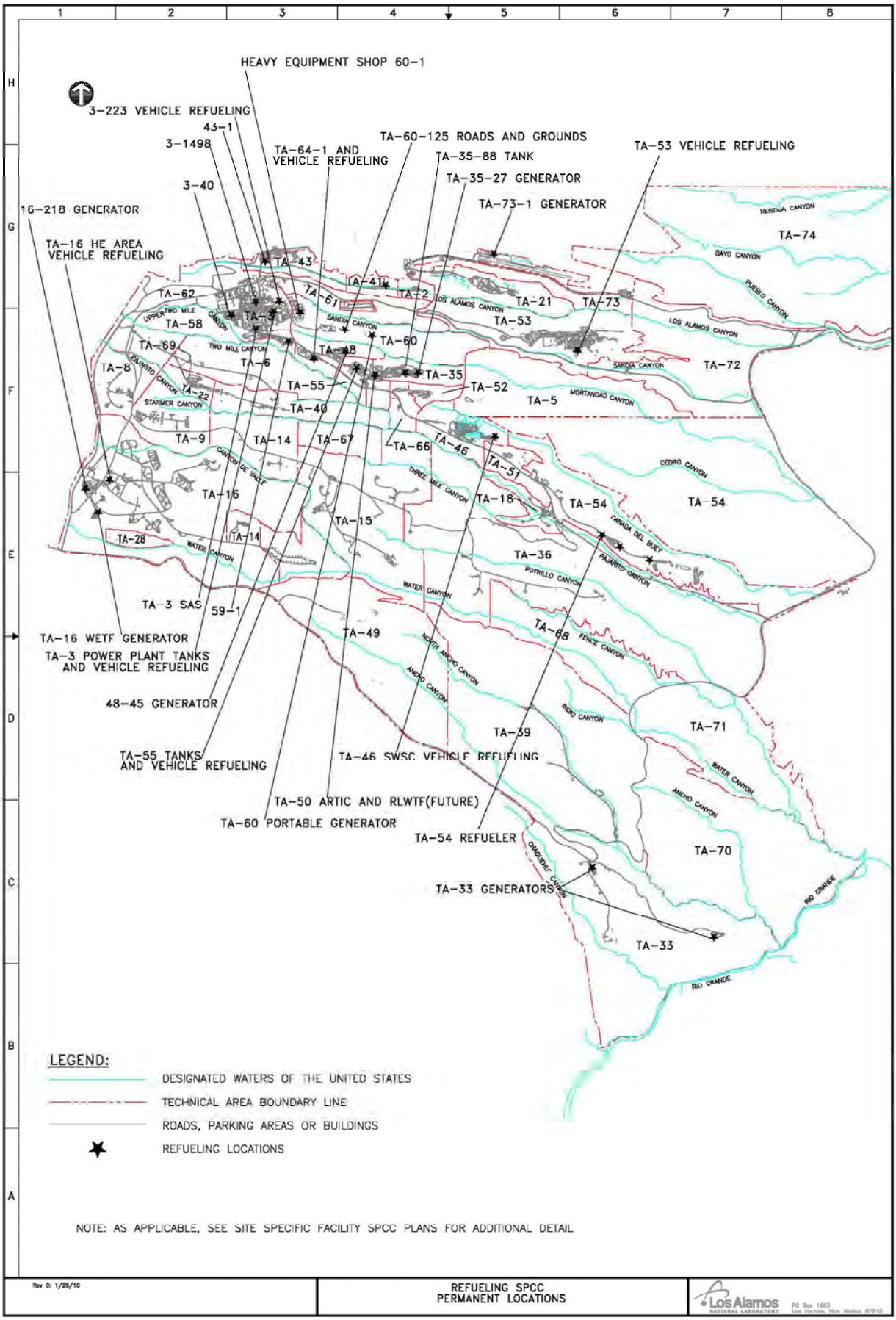
Date	Plan Section	Reason for Amendment	Amendment	PE Certification needed?
March 2010	All	Initial Issuance		Yes
April 2015	All	5-Year Review	Update of SPCC Plan for changes to covered vehicles, fueling locations, storage site BMPs, and organizational changes	Yes
May 2017	All	Additional oil storage at TA-60-1 HES	Updated fueling truck information and oil storage for TA-60-1 HES. Updated facility contact information. Updated inspection checklists. Updated spill report information. Updated facility map.	Yes
October 2020	All	5-Year Review, Additional new oil storage at TA-60-1 HES	Updated document format and oil storage information for planned changes to stationary storage, and completed changes to refuelers, including removing TA-54 refueler.	Yes

Appendix C: Site Map and Photograph of Typical Stationary Equipment


Refueler and service trucks
New Proposed Oil Storage System
Outside Storage Shed 84x272
Waste Oil- 46x60
Motor Oil- 46x60
Hydraulic Oil- 45x60
Waste Oil 500 Gals 46x60
Motor Oil 500 Gals 46x60
Hydraulic Oil 500 Gals 46x60
Waste Oil 500 Gals 46x60
Motor Oil 500 Gals 46x60
Double Wall Tank 500 Gals Eliminating lower secondary containment
Waste Oil 500 Gals
Misc. 55 gal oil storage
Oil filter crushing
55 gal Fuel waste
Overhead Crane
COUNTER
HALF DOOR
METAL SIDING (TYP)



TA-60-1 HES & Refueling Truck Parking Area


HEAVY EQUIPMENT SHOP 60-1
3-223 VEHICLE REFUELING
43-1
3-1498
3-40
16-218 GENERATOR
TA-16 HE AREA VEHICLE REFUELING
TA-64-1 AND VEHICLE REFUELING
TA-60-125 ROADS AND GROUNDS
TA-35-88 TANK
TA-35-27 GENERATOR
TA-73-1 GENERATOR
TA-53 VEHICLE REFUELING
TA-74
TA-72
TA-71
TA-70
TA-54
TA-33
TA-43
TA-41
TA-2
TA-21
TA-73
TA-62
TA-61
TA-3
TA-58
TA-60
TA-69
TA-48
TA-6
TA-8
TA-35
TA-52
TA-53
TA-55
TA-22
TA-40
TA-5
TA-9
TA-14
TA-67
TA-66
TA-46
TA-51
TA-16
TA-18
TA-15
TA-28
TA-36
TA-3 SAS
59-1
TA-16 WETF GENERATOR
TA-3 POWER PLANT TANKS AND VEHICLE REFUELING
TA-49
TA-68
48-45 GENERATOR
TA-39
TA-55 TANKS AND VEHICLE REFUELING
TA-46 SWSC VEHICLE REFUELING
TA-50 ARTIC AND RLWTF(FUTURE)
TA-60 PORTABLE GENERATOR
TA-54 REFUELER
TA-33 GENERATORS
MENDNA CANYON
BAYO CANYON
PUEBLO CANYON
LOS ALAMOS CANYON
SANDIA CANYON
MORTANDAD CANYON
CEDRO CANYON
THREE MILE CANYON
CANADA DEL BUEY
PAJARITO CANYON
POTRILLO CANYON
WATER CANYON
FENCE CANYON
NORTH ANCHO CANYON
ANCHO CANYON
INDIO CANYON
CHAQUEHUI CANYON
RIO GRANDE
LEGEND:
DESIGNATED WATERS OF THE UNITED STATES
TECHNICAL AREA BOUNDARY LINE
ROADS, PARKING AREAS OR BUILDINGS
REFUELING LOCATIONS
NOTE: AS APPLICABLE, SEE SITE SPECIFIC FACILITY SPCC PLANS FOR ADDITIONAL DETAIL
Rev 0: 1/25/10
REFUELING SPCC PERMANENT LOCATIONS
Los Alamos NATIONAL LABORATORY

Typical Emergency Generator where refueling operations take place (TA-48-1)

Appendix D: Inspection Forms, Inspection Records, and Corrective Action Records

Blank Monthly Inspection Forms
Blank Annual SPCC Inspection Form
Results of Annual Tests by Others Form
Remote Refueling Checklist

Copies of Monthly Inspection Forms, Annual Inspection Reports, and DOT Tanker Inspection Certifications for All Tanker Trucks

AST Periodic Inspection Checklist –

Refuelers/TA-60-1 Heavy Equipment Shop

Note any leaks, deficiencies, or changes. Repair any deficiencies found. If the tank or secondary containment has a leak, remove tank from service within 24 hours.

Frequency: Monthly

Date:	**Inspector:**	
Item Inspected:	**Corrective Action Needed**	**Comments**
G82 0134S (Fueling Truck)		
E304640 (Fueling Truck)		
E29904 (Fueling Truck)		
G82 0672D (Service Truck)		
Outdoor Drum Storage in Secondary Containment Unit (SE Corner)		
Used Oil Tank 125 Gal (SE)		
Poly Storage Containment Unit and Drums		
Used Oil Tank 525 Gal (NE)		
Indoor drum/tanks, oil filter crushing		
Storm Drains with PetroBarriers		
Trench Drain to Oil-Water-Separator		

REFUELING ANNUAL SPCC WALK-AROUND INSPECTION FORM

Inspection Date: _____ Certified Inspector:_____

Others Present: _____

General Information	Status	Comments
Last SPCC review/revision date		
Any changes to facility that impact ability to discharge oil? (new or removed tanks, oil filled equipment, or drums; changes to procedures):		
SPCC Records maintained?		
Training complete?		
Spill Control equipment		
Refueling areas (signs of spills, BMPs available for temporary drainage control)		
Security (lighting, fencing)		

Tanker Trucks	Status	Comments
Tank Shell and Coating Condition		
Piping, Pumps, Flanges, Valves, Vents, dispensers Condition		
General Condition of Containment Unit:		
Housekeeping		
Other Issues		

Results of annual certification tests

G82 0134S DOT Certified Date:_____

G82 0672D DOT Certified Date:_____

E29904 DOT Certified Date:_____

E304640 DOT Certified Date:_____

Recycle Oil Tanks	Status	Comments
Tank Shell and Coating Condition		
Piping, Pumps, Flanges, Valves, Vents Condition		
General Condition of Containment Unit:		
Housekeeping		
Other Issues		

Portable Container Storage Areas	Status	Comments
Spill Control equipment		
Housekeeping		
Security (lighting, fencing)		
Area drainage		
Condition of secondary containment (discharge valve closed (if any), accumulated water, etc)		
Condition of containers and containments (dents, bulging, leaks, etc.)		

Items Requiring Corrective Actions:_____

_____

Corrective actions taken (give dates):_____

_____

Other Comments:_____

_____

Inspector's signature: _____ Date:_____

Owner/Operator signature: _____ Date:_____

Los Alamos National Laboratory
LOG-HERG Refueling Trucks SPCC Plan
Remote Refueling Checklist

Overview:

Pursuant to 40 CFR 112 of the Oil Pollution Prevention Regulations and this SPCC Plan, the check list of questions below must be fully evaluated to determine if the site is acceptable for refueling of construction equipment and off-road construction vehicles.

References:

The information in this document is based on and in compliance with the Technical Standards and Safety Act, 2000 and the Technical Standards and Safety Authority's (TSSA) Liquid Fuels Handling Code, 2007.

Refueling Criteria:

Dispensing of fuel shall not take place within

1) a building;
2) during a precipitation event (heavy raining, snowing, etc.);
3) within 90 feet of access to a storm drain, arroyo, drainage channel, or watercourse;
4) 5 feet from any opening in a building; or
5) 9 feet from any source of ignition.

BMP's for Refueling:

1) Perform regular preventative maintenance on tanks and fuel lines
2) Use dry cleanup methods for the fueling area as opposed to hosing it down; use dry sweeping compounds.
3) **Avoid topping** off fuel tanks in receiving equipment, which may cause spills by overfilling
4) Refuel in areas of impervious pavements. This allows for spill cleanup using dry absorbent materials before precipitation can wash spills away.
5) Use drip pan under hose and dispensing nozzle.
6) Use fueling hoses with check valves to prevent hose drainage.
7) Train personnel on remote fueling BMP's

The fueling truck is equipped with spill control equipment to address potential spills from fueling activities: Yes ❑ No ❑

If the refueling activity does not meet all of the items and spill control equipment is not available on the refueling vehicle, contact EPC-CP at (667-0666) to assess alternative and/or additional BMP requirements.

I certify that the above information is correct to the best of my knowledge:

_____ _____

Fueler's Signature Date:

Appendix E: Spill Tracking History, Log, Notifications, and Spill Reports

Spill History all reportable releases during history of facilities under this SPCC Plan

Location Description (Date)	Type and Amount	Cause/Description of Damage/Corrective Action Taken	Watercourse Affected	Action Taken to Prevent Recurrence
Outside TA-54 ops center (4/1/11)	Diesel 1 Pint	Diesel fuel spilled from fuel tank overflow. Absorbent pads applied immediately.	No	Review preventative measures with personnel (caution workers not to overfill tanks on fuel tank). Operational area transferred to EM-LA Contractor in 2018.
TA-54 Across from Muster Station 3 (6/13/11)	Diesel ~2 gallons	Spill occurred during refueling due to an open valve on fuel truck. Absorbent pads were used to remediate.	No	Review preventative measures with personnel (perform valve check before refueling).
TA-54 Admin Equipment Yard (7/12/12)	Gasoline ~ 1 gallon	Discharge from a loose fitting on a fuel truck in the administration equipment yard. The impacted soil was removed and micro-blaze absorbent was applied to the area	No	Review preventative measures with personnel (ensure drip pans placed under fuel truck while refueling). Operational area transferred to EM-LA Contractor in 2018.
TA-54 Laydown Yard (12/10/12)	Fuel 16 oz	Spill occurred during refueling of the TA-54 Tanker Truck. Spill was cleaned up and waste was properly disposed of.	No	Operational area transferred to EM-LA Contractor in 2018.
TA-60-1 (8/30/13)	Unleaded Gasoline 1.5 gallons	Overfill of tanker truck refueling truck G82-0414A {now G82 0134S} parked on incline. Absorbent applied and the area was sprayed with several applications of micro-blaze.	No	Review preventative measures with personnel. Vehicle decommissioned in 2016 and replaced with G82 0134S Refueler.
North of TA-54-0002 (9/23/13)	Gasoline < .5 gallon	Microvan was overfilled during refueling activities. The vehicle was pushed to level ground to stop spill. The impacted soil was removed.	No	Review preventative measures with personnel.
Area G Refueling Area (3/19/14)	Diesel 2 gallons	Operator spilled fuel onto asphalt while fueling vehicle. Fuel was absorbed with pads, pigs, and absorbent the same day. Area sprayed with micro-blaze.	No	Review preventative measures with personnel.
TA-60-1 (10/28/14)	Diesel <1 quart	Spill occurred during replacement of dispenser nozzle and subsequent leakage of residual from hose on G82-01414A. Absorbent applied and the area sprayed with micro-blaze.	No	Vehicle maintenance/review preventative measures with personnel. Vehicle decommissioned in 2016 and replaced with G82 0134S Refueler.
SIMR-2 Well Site (6/24/15)	Diesel <0.5 gallon	Spill occurred during refueling operations. Approximately 3 gallons of petroleum contaminated soil was cleaned-up and taken away for proper disposal.	No	Review preventative measures with personnel. Vehicle decommissioned in 2016 and replaced with G82 0134S Refueler.

Spill History all reportable releases during history of facilities under this SPCC Plan

Location Description (Date)	Type and Amount	Cause/Description of Damage/Corrective Action Taken	Watercourse Affected	Action Taken to Prevent Recurrence
R-67 Well Pad (8/3/15)	Diesel 8-12 oz	Faulty nozzle on refueling truck G82-0414A caused an overfill. Diesel spilled onto the basecourse. Basecourse was cleaned up immediately and taken away for proper disposal.	No	Vehicle maintenance/review preventative measures with personnel. Vehicle decommissioned in 2016 and replaced with G82 0134S Refueler.
R-67 Well Pad (8/5/15)	Diesel 8 oz	Loose filter fittings from refueling truck G82-0414A caused fuel to drip onto the well pad basecourse while truck was leaving site. The basecourse was cleaned up and taken away for disposal.	No	Vehicle maintenance/review preventative measures with personnel. Vehicle decommissioned in 2016 and replaced with G82 0134S Refueler.
SIMR-2 Well Pad (8/6/15)	Diesel ~8 oz	Faulty nozzle on refueling truck G82-0414A caused a small amount of diesel fuel to spill onto the well pad basecourse. The basecourse was cleaned up immediately and taken away for proper disposal.	No	Vehicle maintenance/review preventative measures with personnel. Vehicle decommissioned in 2016 and replaced with G82 0134S Refueler.
R-67 Well Pad (8/6/15)	Diesel ~ 2 Tbsp	Diesel dripped out of the back of refueling truck G82-0414A. The basecourse was cleaned up and taken away for disposal.	No	Vehicle maintenance/review preventative measures with personnel. Vehicle decommissioned in 2016 and replaced with G82 0134S Refueler.
TA-54 Area G Refueling Area (11/12/15)	Diesel ~ .5 gallons	The release occurred during refueling operations when the auto shutoff did not stop the flow in time. The flow was stopped manually and the tanker truck was removed from the site for maintenance. Pads and absorbents were used to remediate the spill.	No	Review preventative measures with personnel. Operational area transferred to EM-LA Contractor in 2018.
TA-54 access road just inside the main gate (9/15/16)	Gasoline < Cup	Mobile refueler truck leaked onto asphalt surface. The vehicle was removed to complete maintenance on the vehicle. Micro-blaze was applied to impacted area.	No	Review preventative measures with personnel. Operational area transferred to EM-LA Contractor in 2018.
TA-60-1 (11/9/16)	Diesel 1 gallon	Refueling truck G82-01079 leaked approximately 1 gallon of diesel fuel onto the asphalt parking lot when the back pump vent malfunctioned on the truck. The spill was immediately cleaned up with absorbent material.	No	Decommissioned in 2016 and replaced with E304640 Refueler.
TA-3-233 (2/15/17)	Diesel <1 cup	Refueling truck E304640 leaked a small amount of diesel fuel onto the pavement while refueling another vehicle. The driver cleaned up the fuel with absorbent material.	No	Review preventative measures with personnel.

Spill History all reportable releases during history of facilities under this SPCC Plan

Location Description (Date)	Type and Amount	Cause/Description of Damage/Corrective Action Taken	Watercourse Affected	Action Taken to Prevent Recurrence
Heavy Equipment Yard (9/20/17)	Oil <1 gallon	Three small releases identified with one related to equipment under this SPCC Plan: evidence empty oil drum within secondary containment on SE side seeped. Area microblazed/oil absorbent applied.	No	Review preventative measures with personnel.
TA-60-1 outside of southeast repair bay (1/25/18)	Coolant <5 gallon	Coolant line leak from refueling truck E29904 during repairs onto the concrete pad. Leak stopped, dry absorbant applied, and leak contained on-site. Did not reach storm drain.	No	Completed repairs on vehicle.
Intersection of Eniwetok and Maniac Roads (8/8/18)	Gasoline 1 cup	During refueling of a man lift the truck's fuel hose developed a leak while dispensing fuel onto the underlying soil west of TA-60-01. Operation stopped upon discovery of spill and the impacted soil was removed.	No	Vehicle maintenance completed.
TA-60-1 north side of east lot (2/27/19)	Oily water ~3 gallon	During lifting a bin, containing a drum of oil filters, to move it to the MRF the drum opened and a mix of residual storm water in the bin and oil leaked. Spill primarily to asphalt with a small area of impacted soil. Absorbent applied to impacted area to remove residual water. Micro-blaze applied. Impacted soil removed.	No	Review preventative measures with personnel.
TA-60-1 near refueling area (12/18/19)	Oil <1 gallon	Oil spilled on asphalt. HOW WAS THIS CLEANED UP	No	Review preventative measures with personnel.
TA-60-1 east side by center bay and center of upper east lot (3/25/20)	Oil <5 gallons	Minor leaks from heavy equipment stored within TA-60-1, including diesel tanker truck E29904 and in southeast corner TA-60-1 product storage area. Spills cleaned up and micro-blazed.	No	Review preventative measures with personnel.
TA-60-1 outside door of upper bay on east side (4/17/20)	Antifreeze <5 gallons	Two anti-freeze spills associated with a fuel truck that had a heater hose leak. HOW WAS THIS CLEANED UP	No	Vehicle maintenance completed.
TA-60-1 Heavy Equipment Yard (6/1/20)	Diesel <2 gallon	Fuel filter gasket on refueling line failed during transfer of fuel to pick-up truck releasing diesel onto asphalt. Absorbent pads and Micro-Blaze applied to impacted area. Filter was replaced.	No	Filter replacement added to preventative maintenance schedule.

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TA-60-1 HES and LOG-REFUELERS – SPILL TRACKING LOG

Date and time	Spill Location	Quantity discharged in arroyo, stream, river, or canyon	Type, source, Material and Quantity Spilled*	Description of affected media	Cause of discharge	Damages or injuries caused by discharge	Corrective Action Taken	Evacuation needed?	Names of those contacted

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TA-60-1 HEAVY EQUIPMENT SHOP / LOG REFUELERS – SPILL NOTIFICATIONS

National Response Center

The National Response Center or NRC is the federal government's national communications center, which is staffed 24 hours a day by U.S. Coast Guard officers and marine science technicians. The NRC receives all reports of releases involving hazardous substances and oil that trigger the federal notification requirements under several laws. Reports to the NRC activate the National Contingency Plan and the federal government's response capabilities. It is the responsibility of the NRC staff to notify the pre-designated on-scene coordinator (OSC) assigned to the area of the incident and to collect available information on the size and nature of the release, the Facility or vessel involved, and the party (ies) responsible for the release. The NRC maintains reports of all releases and spills in a national database.

How to Report Oil Spills

Reporting a hazardous substance release or oil spill takes only a few minutes. To report a release or spill, contact the federal government's centralized reporting center, the National Response Center (NRC), at 1-800-424-8802. The NRC is staffed 24 hours a day by U.S. Coast Guard personnel, who will ask you to provide as much information about the incident as possible. If possible, you should be ready to report the following:
Your name, location, organization, and telephone number
Name and address of the party responsible for the incident
Date and time of the incident
Location of the incident
Source and cause of the release or spill
Types of material(s) released or spilled
Quantity of materials released or spilled
Danger or threat posed by the release or spill
Number and types of injuries (if any)
Weather conditions at the incident location

Any other information that may help emergency personnel responds to the incident
If reporting directly to the NRC is not possible, reports also can be made to the EPA Regional office or the U.S. Coast Guard Marine Safety Office in the area where the incident occurred. In general, EPA should be contacted if the incident involves a release to inland areas or inland waters, and the U.S. Coast Guard should be contacted for releases to coastal waters, the Great Lakes, ports and harbors, or the Mississippi River. The EPA or U.S. Coast Guard will relay release and spill reports to the NRC promptly.

How Reports Are Handled

All reports of hazardous substance releases and oil spills made to the federal government are maintained by the NRC. The NRC records and maintains all reports in a computer database called the Emergency Response Notification System, which is available to the public. The NRC relays the release information to an EPA or U.S. Coast Guard On Scene Coordinator (OSC), depending on the location of the incident. In every area of the country, OSCs are on-call and ready to respond to an oil or hazardous substance release at any time of the day. After receiving a report of an oil or hazardous substance release, the federal OSC evaluates the situation and, if the OSC decides that a federal emergency response action is necessary, the National Response System will be activated. Otherwise, the OSC will monitor the cleanup activities of the responsible party and the local and state governments, and will assist in the cleanup as warranted.

EPA Region 6
Emergency Response Center 1-866-EPASPILL 1-866-372-7745

State of New Mexico
New Mexico State Police 505-476-9620
New Mexico Environment Department 505-827-9126

Notification of Spills and Unauthorized Discharges

Who Must Provide Notification? The owner, operator, or person in charge of any Facility where a discharge has occurred must provide notification such release to the New Mexico Environment Department.

What Kinds of Discharges Must be Reported? 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, bio-hazardous, 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.

Are There Reportable Quantities? New Mexico has not established reportable quantities.

When Must Notification Be Provided? Verbal notification must be provided as soon as possible after learning of a discharge, but in no event more than twenty-four (24) hours thereafter.

How Should Notification be provided?

For emergencies, call 505-827-9329 twenty-four hours a day.

For non-emergencies, call 866-428-6535 (voice mail, twenty-four hours a day).

For non-emergencies, and to reach an on-duty NMED staff member during normal business hours, call 505-827-2855.

TA-60-1 HEAVY EQUIPMENT SHOP / LOG REFUELERS – SPILL REPORTS

Appendix F: Storm Water Discharge Forms

STORM WATER DISCHARGE RECORD
FOR
SECONDARY CONTAINMENT

***DO NOT DISCHARGE*, especially into a watercourse or storm drain before filling out this form AND calling EPC-CP at 667-0666 for approval to discharge.**

LOCATION: TA– _____ Near or at Building _____

GROUP CONTACT: _____

PHONE: _____ CELL: _____

SOURCE OF DISCHARGE: ❒ Detention Pond _____

❑ Secondary Containment ❑ Other

DESCRIBE DISCHARGE: _____

DATE AND TIME OF DISCHARGE: _____

NEAREST CANYON AFFECTED: _____

VOLUME OF DISCHARGE: _____ gallons

VISUAL DESCRIPTION OF DISCHARGE:

- pH: _____
- Color: _____
- Clarity: _____
- Odor: _____
- Sheen: _____

OTHER ANALYSES REQUESTED:

_____

_____

LAB DOING ANALYSES: PHONE#:

COMMENTS:

_____

Signature: _____

Date: _____

Appendix G: Training Records

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Appendix H: PetroBarriers ™ Specification Sheet

SPI STORM DRAIN PETRO-BARRIER BOX™ USED FOR OIL CONTAINMENT

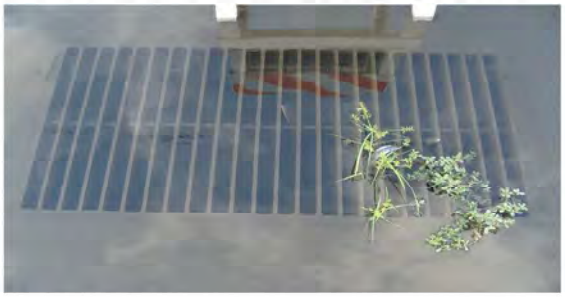
SPI Storm Water Petro-Barrier-Boxes are custom manufactured for any size storm drain for a variety of applications. SPI customers that have used our technology solutions for years for oil spill containment saw the need to expand the use of our technology for storm water drains. Every Petro-Barrier-Box is built to the same standards as other SPI products allowing oil free water to pass only absorbing trace oil sheen and totally shutting down in an oil spill.

Petro-Barrier-Box is two parts the mounting flange that is attached to the iron rim that supports the storm grate. The rim is first cleaned removing all residue and then the flange is attached with construction adhesive. The adhesive dries permanently attaching the flange to the iron rim. The aluminum used is 1/8" and the grate is minimally raised to prevent problems. The Petro-Barrier-Box is lowered through the flange and is attached with stainless steel screws. There is a 4" manual overflow valve to evacuate water in an emergency , this is operated with a T-Handle and turned 10 times to fully open. The T-Handle must then be fully

Closed to ensure Storm Water Petro-Barrier-Box is in full protection mode.. In many applications the T-handle will slip through the grate to open and close the valve.

The Petro-Barrier-Box requires routine maintenance for proper operation. Each box must be cleaned by removing and replacing the dirt and debris filters on an as needed basis. The cleaning schedule needs to be developed on site since all environmental situations vary by location.

Water has backed up from the storm drain. Petro-Barrier-Box is not draining well and needs maintenance.



Storm grate is fully covered with water with Petro-Barrier-Box installed. No maintenance has been performed in 9 months.

Petro-Barrier-Boxes require more maintenance than other SPI products. Storm drains are usually in parking lots and high traffic areas that drain a large area and also are more exposed to fine dirt, leaves and other materials. Developing a maintenance procedure will prevent this situation and keep the Petro-Barrier-Boxes working with few problems.

The water has been evacuated from the surrounding area by raising the overflow valve. Directly under the grate the mud, sludge and debris is removed.

The second set of dirt filters are removed finally showing some clean filter on the bottom. The dirt had made it to the second set of dirt filters but did not impact the Barrier-Box.

All of the dirt, mud and debris is cleaned from the pre-filter in the flanged area. New filters are installed above the Petro-Barrier-Box, none of the dirt made it through the filters.

The top layer of filters is placed inside the flanged area including filters around the by-pass valve. The grate is then replaced and the Petro-Barrier-Box is back in service.

The storm Drain Petro-Barrier-Boxes will allow water to pass while filtering oil sheen in most cases to below 1ppm and still provide 100% Oil Spill Protection.

ATTACHMENT 26: WEAPONS FACILITIES OPERATIONS CLEAN FILL ACCEPTANCE AND REUSE PROCESS

WEAPONS FACILITIES OPERATIONS
LOS ALAMOS NATIONAL LABORATORY

Document Number:	WFO-OP-415
Revision:	A

Weapons Facilities Operations Clean Fill Acceptance and Reuse Process

Effective Date: 05/21/2020	**Next Review Date:** 05/21/2022

Review Cycle: ☐ 1 year ☒ 2 years ☐ 3 years

Usage Mode: ☐ Reference ☒ UET ☐ Both UET & Reference

Reviewed and Approved for Use By:

	Printed Name	Z#	Org	Signature	Date
Responsible Line Manager, *Acting*	Robert Lechel	169521	DESH-WFO	ROBERT LECHEL (Affiliate)	Digitally signed by ROBERT LECHEL (Affiliate) Date: 2020.05.20 14:00:10 -06'00'
SME Reviewer	Holly Wheeler	118432	EPC-CP	HOLLY WHEELER (Affiliate)	Digitally signed by HOLLY WHEELER (Affiliate) Date: 2020.05.21 11:15:19 -06'00'

Approved and Authorized for Use By:

	Printed Name	Z#	Org	Signature	Date
Facility Operations Director (FOD)	Brian L. Watkins	206831	WFO-DO	BRIAN WATKINS (Affiliate)	Digitally signed by BRIAN WATKINS (Affiliate) Date: 2020.05.21 12:03:07 -06'00'

For Document Control Team Reference:

☐ USQ *(applicable to WETF)* ☐ USI *(applicable to DARHT)* ☒ N/A

Users are responsible for verifying that they are working to the most current revision of a document.

REVISION HISTORY

Revision	Effective Date	Action	Description
A	05/21/2020	New Procedure	

TABE OF CONTENTS

1.0 PURPOSE

The purpose of this procedure is to describe Weapons Facilities Operations (WFO) processes for

a. Accepting transfer of material from a LANL technical area to the LANL TA-16 Stockpile Area

AND

b. Requesting transfer of material from the TA-16 Stockpile Area for use within WFO FOD.

2.0 SCOPE

This procedure does not replace or supersede ADESH-AP-TOOL-704.0, Construction and Demolition Debris. It provides additional details, including documentation required if material is to be accepted at the TA-16 Stockpile Area.

Persons or organizations generating material and requesting acceptance for its use as clean fill (Acceptance Material Generator) should first refer to the ADESH-AP-TOOL-704.0.

This procedure applies to WFO High Explosives/Weapons Facilities (WFO-HE) Operations Manager (OM), Deployed Environment, Safety, and Health (DESH)-WFO Deployed Environmental Professional (DEP), DESH-WFO Managers, WFO Maintenance and Site Services (MSS) personnel; clean fill material generators; clean fill material requestors.

3.0 RESPONSIBILITIES

3.1 WFO High Explosives/Weapons Facilities (WFO-HE) Operations Manager (OM) and Deployed DESH-WFO Managers

- Responsible for developing, maintaining and revising this procedure.
- Responsible for ensuring procedure compliance.

3.2 DESH-WFO DEP

- Responsible for evaluation, maintenance and follow up of this procedure.
- Complying with requirements of this procedure.
- Notifying supervisory personnel of conditions that could require corrective action.
- Issuing a PAUSE/STOP Work Order whenever warranted by conditions related to health or safety in accordance with P101-18, Procedure for Pause/Stop Work.

4.0 TRAINING AND QUALIFICATION

The following required reading must be completed prior to implementing this procedure:

WFO-OP-415, *Weapons Facilities Operations Clean Fill Acceptance and Reuse Process*

5.0 PROCEDURAL STEPS

WFO operates and maintains the TA-16 Stockpile Area for receipt, storage, and distribution of WFO clean fill. This section sets forth the requirements (a) for accepting material at the facility and (b) for accepting requests to use the material.

5.1 Clean Fill Criteria

1. Clean fill may contain the following materials only:
   a. Soil, including top soil
   b. Soil and gravel
   c. Sand
   d. Tufa (a soft mixture of silica, calcium carbonate, and/or volcanic ash)
2. Clean fill may **NOT** contain:
   a. Pieces larger than 12 inches in diameter.
   b. Material that has been subjected to a spill or release of chemical contaminants, e.g., petroleum products.
   c. Material that has received prior treatment to remediate contamination.

   AND/OR

   d. Material containing land-clearing debris, construction and demolition debris, municipal solid waste, radioactive waste, hazardous waste, New Mexico special waste, or any other solid waste not meeting clean fill criteria.

5.2 Acceptance of Material

5.2.1 Acceptance Criteria

1. There must be a need for the material offered.
2. Material must meet the Clean Fill Criteria specified in Section 5.1.
3. All material analytical data will be screened to NMED Technical Background Document for Development of Soil Screening Levels.
4. The following documentation must be provided:
   a. All projects will need to sample for the full Analytical Suite containing sample analysis or (if requested by deployed DESH-WFO DEP) results of material sampling.

OR

   b. Acceptable Knowledge (AK) Documentation, provided by Material Generator.

OR (IF AK DOCUMENTATION IS NOT AVAILABLE)

c. Database Verification, performed by DESH-WFO DEP/Verifier, equivalent to acceptable AK documentation; see Section 5.4.1, Step 3 below.

5.3 Process for Acceptance

5.3.1 Material Generator

[1]	**ACCESS** WFO Clean Fill Acceptance Request Form (WFO-FORM-416).
[2]	**OBTAIN** and **ATTACH:** a. Analytical Report. b. Sampling results if requested by DESH-WFO DEP. c. Acceptable Knowledge (AK) documentation if available. DESH-WFO DEP can assist Material Generator with the form and attachments.
[3]	**SUBMIT** completed form and documentation to DESH-WFO DEP. **Note:** Form may be submitted to DESH-WFO DEP via e-mail.

5.4 Characterization/Verification

5.4.1 Deployed DESH-WFO DEP /Verifier

[1]	**COMPLETE** *Characterization/Verification* portion of WFO-FORM-416.
[2]	**REVIEW** Analytical Report data as follows: a. Levels presented in Inorganic and Radionuclide Background Data for Soils, Canyon Sediments, and Bandelier Tuff at Los Alamos National Laboratory, Sept 22, 1998. b. If Toxicity Characteristic Leaching Procedure (TCLP) analytical data provided, compare to regulatory TCLP levels. c. NMED Technical Background Document for Development of Soil Screening Levels. d. Ensure that petroleum analytical results meet the following requirements: i. Benzene concentration ≤ 10 mg/kg. ii. Total benzene, toluene, ethyl benzene, and xylene isomer (BTEX) concentration ≤ 50 mg/kg. iii. Total petroleum hydrocarbon (TRPH) concentration ≤ 100 mg/kg (i.e., is below New Mexico Special Waste levels)
[3]	If necessary, **PERFORM** review of applicable databases (EX-ID, GIS, PRS, PR-ID, and Stack Emission d/base). To evaluate Be, DU, and HE see IRT GIS Map and WFO-MAP-016, *WFO Large Area Map.*

[4]	If you have concerns **(e.g., Haz, Rad, PCB, asbestos),** based on these analytical results, refer Material Generator to WFO Waste Management Coordinator (WMC) for resolution. **DO NOT** proceed until all concerns are resolved.
[5]	**PERFORM** field inspection of material for size, etc. (See Section 5.1of this procedure.)
[6]	**IF** material is not acceptable (i.e., reusable), **THEN** reject it; explain reason for rejection.
[7]	**IF** you find that clean fill acceptance criteria are met, **THEN:** **SIGN** and **DATE** verification and **SUBMIT** form to WFO-HE Operations Manager (or designee).

5.5 Approval

5.5.1 WFO-HE Operations Manager (or designee)

[1]	**DETERMINE** and **CONCUR** that clean fill acceptance criteria have been met. **Note:** WFO-HE Operations Manager (or designee) determination is made by reviewing the analytical data, applicable AK documentation, applicable databases, and manager's knowledge of the operation that generated the material.
[2]	**INDICATE** concurrence/approval by **SIGNING** and **DATING** certification on form. **IF** not approved, **THEN** explain why.
[3]	**RETURN** form to DESH-WFO DEP.

5.6 Transfer of Material

5.6.1 DESH-WFO DEP

[1]	On approval by WFO-HE Operations Manager (or designee), **ADVISE** Material Generator that transfer of material has been approved
[2]	**ASSIST** with arrangements for transfer of material to TA-16 Stockpile Area.
[3]	**CONFIRM** transfer of material.
[4]	**COMPLETE** last section of WFO Clean Fill Acceptance Request Form (WFO-FORM-416).
[5]	**SEND** copy of form to Material Generator.
[6]	**UPDATE** WFO ESH server.
[7]	**FILE** documentation on the WFO ESH server in the Clean Fill folder.

5.7 Requesting Clean fill

5.7.1 Soil Requestor

[1]	**ACCESS** WFO Soil Reuse Request Form (WFO-FORM-417).
[2]	**COMPLETE** the top portion of the form and **SUBMIT** to DESH-WFO DEP. **Note:** Form may be submitted to DESH-WFO DEP via e-mail.

5.7.2 DESH-WFO DEP

[1]	Upon receipt of WFO Soil Reuse Request Form (WFO-FORM-417), **DETERMINE** if requested material is available.
[2]	**IF** the material is available, **THEN** arrange for safe transfer to Soil Requestor's site.
[3]	**COMPLETE** bottom section of WFO Soil Reuse Request Form. **IF** material was not transferred, **THEN** explain under Comments. **SIGN** and **DATE** WFO Soil Reuse Request form.
[4]	**PROVIDE** a copy of the signed form to the Soil Requestor and WFO-HE Operations Manager. **Note:** Copies of signed form may be sent to Soil Requestor and WFO-HE Operations Manager via e-mail.
[5]	**UPDATE** Clean Fill Database (WFO ESH server).
[6]	**FILE** documentation on the WFO ESH server in the Clean Fill folder.

6.0 POST- PERFORMANCE ACTIVITY

6.1 Records Processing

Records generated while performing this procedure must be processed and maintained in accordance with WFO-AP-150, WFO Records Management Program.

7.0 REFERENCES

- ADESH-AP-TOOL-704.0, Construction and Demolition Debris
- NMED Technical Background Document for Development of Soil Screening Levels
- New Mexico Solid Waste Rules 20.9.2 – 20.9.10 NMAC
- WFO-AP-150, WFO Records Management Program

8.0 ACRONYMS/DEFINITIONS

8.1 Acronyms

Term	Description
AK	Acceptable Knowledge (Documentation)
DESH	Deployed Environment, Safety, and Health
DEP	Deployed Environmental Professional
WFO-HE	WFO High Explosives/Weapons Facilities
ESH	Environment, Safety, and Health
FOD	Facilities Operations Director
GIS	Geographic Information System
IRT	Integrated Review Tool
OM	Operations Manager
TCLP	Toxicity Characteristic Leaching Procedure
WFO	Weapons Facilities Operations
WMC	Waste Management Coordinator

9.0 ATTACHMENTS

Attachment 1: *Example WFO Clean Fill Acceptance Request Form*
Attachment 2: *Example WFO Soil Reuse Request Form*

ATTACHMENT 1
Example WFO Clean Fill Acceptance Request Form
Page 1 of 1

WFO Clean Fill Acceptance Request Form

Section 1: Soil Acceptance Request. (Material Generator to fill in this section, then submit to DESH-WFO DEP; form may be submitted to DESH-WFO DEP via e-mail)				
Type of soil requested [e.g. top soil, soil/gravel, sand, tufa]		Location of Soil:		
Volume [e.g. 1 yd^3,5 yds^3]	PR-ID# (f known)		Excavation ID #	
Generator/Requestor:	Print Name	Z-number	Cost Codes	
Title		Phone	Date	
Subcontractor Technical Representative (STR) if applicable		Name	Phone	
Section 2: Characterization/Verification. (DESH-WFO DEP /Verifier to fill in this section, then submit to WFO-HE Operations Manager (OM) (or designee))				
Analytical Report Attached? ☐ Yes ☐ No		If not, why not? (explain)		
Compare Analytical Report to *Inorganic and Radionuclide Background Data for Soils, Canyon Sediments, Bandelier Tuff at Los Alamos National Laboratory, September 22, 1998*, and NMED background document for residential soil screening (SSLs):			OK? ☐ Yes ☐ N/A	
Sampling Required: ☐ Yes ☐ N/A		If yes, sample for what? (explain)		
Acceptable Knowledge (AK) Documentation attached? ☐ Yes ☐ No			If not, why not? (explain)	
Database verification. (Required if AK Documentation is **NOT** attached.		**Concerns** (If there are concerns (e.g., Haz, Rad, PCB, asbestos), refer Material Generator to internal Waste Management Coordinator (WMC).		
EX-ID database	No Concerns ☐			
GIS database	No Concerns ☐			
PRS database	No Concerns ☐			
PR-ID database	No Concerns ☐			
Stack emission d/base database	No Concerns ☐			
Field verification (size)	No Concerns ☐			
DESH-WFO DEP verifies that all material acceptance criteria have been satisfied.	DESH-WFO DEP Printed Name	Signature	Date	
Section 3: Approval. (WFO-HE Operations Manager (OM) (or designee) to fill in this section, then return to DESH-WFO DEP)				
Approved: ☐ Yes ☐ No		If not approved, why not? (explain)		
I certify under penalty of law that I am familiar with the operation that generated the material through personal knowledge as well as AK information provided by Material Generator and verified in applicable databases and that to the best of my knowledge and belief the material contains no constituents that would cause it to be considered a waste or a pollutant.				
WFO-HE Operations Manager (OM) (or designee) Printed Name	Signature	Date		
Section 4: Receipt. (DESH-WFO DEP to fill in this section, then send copy to Material Generator).				
RECEIVED ☐ **REJECTED** ☐		If rejected, explain why:		
DESH-WFO DEP Printed Name	Signature	Date		

WFO-FORM-416A
Ref. Doc.: WFO-OP-415

ATTACHMENT 2
Example WFO Soil Reuse Request Form

WFO Soil Reuse Request Form

Section 1: Soil Reuse Request. (Soil Requestor to fill in this section) Note: Soil Requestor submits form to DESH-WFO DEP; form may be submitted to DESH-WFO DEP via e-mail.		
Type of soil requested [e.g. top soil, soil/gravel, sand, tufa]	Soil will be transferred to TA-	
Volume [e.g. 1 yd^3,5 yds^3]	Excavation ID #	
Comments:		
Soil Requestor Printed Name	Z-Number	Signature
Title	Phone	Date
Section 2: Soil Reuse Request. (DESH-WFO DEP to fill in this section)		
Volume [e.g. 1 yd^3,5 yds^3]	Excavation ID #	
Comments:		
Section 3: Release (DESH-WFO DEP to fill in this section)		
DESH-WFO DEP Printed Name	Z-Number	Signature
Date	Phone	
DESH-WFO DEP provides a copy of the signed form to Soil Requestor and WFO-HE Operations Manager (OM). NOTE: Copies of signed form may be sent to Soil Requestor and WFO-HE Operations Manager (OM) via e-mail.		

WFO-FORM-417A
Ref. Doc.: WFO-OP-415