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# **MSGP Stormwater Pollution Prevention Plan**

**for:**

## **TA-60-01 Heavy Equipment Shop**

Triad National Security, LLC (Triad)  
Los Alamos National Laboratory

**January 2019**

**Revision 0**

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## TA-60-01 Heavy Equipment Shop 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, and using the industry specific permit requirements for *Sector P – Land Transportation & Warehousing* as a guide. The applicable stormwater discharge permit is EPA General Permit Tracing Number NMR050013 [Triad National Security, LLC (Triad)]. Click here to view contents of the permit <https://www.epa.gov/npdes/final-2015-msgp-documents>.

This SWPPP applies to discharges of stormwater from the operational areas of the TA-60-01 Heavy Equipment Shop 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 the TA-60-01 Heavy Equipment Shop (HES). The current MSGP expires at midnight on June 4, 2020.

## 1.0 FACILITY DESCRIPTION

### 1.1 Facility Information

Name of Facility: TA-60-01 Heavy Equipment Shop		
Street: Intersection of Eniwetok Drive and Maniac Road		
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 4212-4231, Sector P, Subsector P1		
Estimated area of industrial activity at site exposed to stormwater: 8.5 acres		
<b>Discharge Information</b>		
Name(s) of surface water(s)/segment that receives stormwater from your facility: Sandia Canyon (Sigma Canyon to NPDES outfall 001)		
Does this facility discharge industrial stormwater directly into any segment of an “impaired water” (see definition in 2015 MSGP, Appendix A)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Pollutants causing the impairment: Gross Alpha, Aluminum, PCB (Aroclors), Copper and Thallium		

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? Not applicable.

## 1.2 Stormwater Pollution Prevention Team

The Stormwater PPT for the TA-60-01 HES consists of operations and management personnel from the UI FOD and the facility, a representative from EPC-CP, and a DEP. The EPC-CP representative is responsible for subject matter expertise to ensure Laboratory compliance under the NPDES permit regulations. The team members are selected on the basis of their familiarity with the activities at the facility and the potential impacts of those activities on stormwater runoff.

The specific duties of individual team members of the PPT are listed in the table below:

Staff Names	Individual Responsibilities
<b>Team/Group Leader:</b>  Russell Stone, ESH Manager, DESH-UI	Responsible for the management of all environmental, safety, health, and quality programs for the buildings and facilities listed 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 that problems noted in inspections are corrected. The Group Leader must also ensure funding is established to cover compliance requirements of the MSGP and this SWPPP.
<b>Deployed Environmental Professionals (DEPs):</b>  Jillian Burgin (primary), Leonard Sandoval (backup), DESH-UI	Responsible for the management of all environmental programs and issues for the buildings and facilities listed within this Plan. The DEP is responsible for training, recordkeeping, and SWPPP revision. The DEP will ensure that all PPT, operations site workers (as appropriate), and applicable supervisors receive annual MSGP and SWPPP training. The DEP will ensure that inspection documents 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 personnel regarding implementation of the MSGP and this SWPPP. Lastly, the DEP conducts routine inspections and visual assessments as required by the MSGP. Identified corrective actions from routine inspection are entered into the 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.

<b>FOD Manager:</b>  Lawrence Chavez, Operations Manager, UI-DO	Responsible for managing the operation and maintenance of all aspects of the buildings and facilities 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 UI FOD propose a new process or a new site or operation that may be subject to the MSGP.
<b>ENV Core:</b>  Holly Wheeler, MSGP Team Lead, EPC-CP	The MSGP Project Lead is responsible for managing and administering the Multi-Sector General Permit Storm Water Program for all industrial facilities within Los Alamos National Laboratory. The MSGP Project Lead advises and provides guidance to facility personnel on NPDES MSGP regulations/requirements. The MSGP Project Lead also acts as the institutional point of contact for all interactions with the regulatory authority (EPA) and supervises personnel implementing storm water monitoring requirements for the facility.
<b>Facility Staff:</b>  Tim Walker-Foster, Maintenance Manager, LOG-HERG  Justin Teo, HES Superintendent, LOG-HERG	Responsible for day-to-day operations at the facility. Assisting DEPs and EPC with inspections; and implementing, installing and maintaining BMPs at the facility for MSGP compliance. Spill reporting; providing documentation as requested by other team members. Coordinating SWPPP training and briefings as requested by DEP/EPC.

### 1.3 Site Description

The primary operation of the TA-60-01 HES is to repair and maintain heavy equipment and government vehicles used at LANL. The boundary of the facility covers an estimated 8.5 acres on Eniwetok Drive in Los Alamos. Approximately 7.5 acres (90%) of the facility consists of impervious surfaces. The site is located southeast of Sandia Canyon, which serves as the area watershed.

The HES building consists of administrative offices, a parts/supply room, a taxi dispatch and vehicle transfer office. Heavy equipment and vehicles are stored and staged in adjacent parking lots to the east and west of the facility. The repair bays are located on the upper/south and lower/north portions of the building. The eastern lower lot of the facility is used for various craft material storage and equipment part storage. There are also roll-off bins for metal and wood recycle in the lower east lot. Parking for government and personally owned vehicles is located on the west and south sides of the building.

Vehicle maintenance at the HES primarily takes place inside the repair bays. Outdoor activities consist of material handling, vehicle and equipment staging, the transfer and storage of oil/used oil and other chemical products for vehicle maintenance. The upper east lot of the facility contains various storage buildings, parking for vehicles and equipment awaiting repairs, ATVs, air compressors, containers, material racks, secondary containment units for oils, antifreeze, cleaners and a waste accumulation area. The refueling trucks for the laboratory are kept staged in the upper east lot and are also regulated under a Spill Prevention Control and Countermeasure (SPCC) Plan.



There is a vehicle steam cleaning pad located east of the north bay that discharges directly to a trench drain. The trench drain is connected to an oil-water separator (OWS) that discharges to the sanitary waste water sewer system (SWWS).

Industrial activities and major structures at the facility are shown on the Site Map in Figure B-1. Detailed descriptions of the facility areas and industrial activities are provided in Section 2.0.

### Outfalls

There are five stormwater outfalls associated with this facility: Outfalls: 021, 022, 023, 024 & 025.

**Outfalls 021 & 22:** are located on the east side of the site in the main drainage ditch between the upper and lower east lots. The two discharge points receive drainage from the drop inlet east of the main building and the detention basin east of the building. These drain the bulk of the upper east lot at HES and would receive the majority of all potential pollutants found at the facility. An automated monitoring station, **MSGP02201** is located at Outfall 022.

**Outfall 023:** is a drop inlet and culvert located at the lower east lot. Discharge is to a drainage ditch east of the facility.

**Outfall 024:** is an asphalt rundown located on the northwest side of the building in front of the lower repair bay. The rundown drains to a stable ditch that runs east to Sandia Canyon. The rundown drains the main front parking lot and the front of both lower bays.

**Outfall 025:** is a culvert located northwest of the building under Maniac Rd. The culvert runs north to a waterway/culvert system that runs to the east to Sandia Canyon. The drainage area includes parking lots west of the main front parking lot.

### Substantially Identical Outfalls:

Outfalls 021, 023, 024, 025 are significantly identical to Outfall 022 where automated stormwater monitoring is performed for the facility.

The general location map for the facility can be found as Figure A and provides locations of all receiving waters associated with stormwater discharges from the facility. 100% of the site flows to Sandia Canyon. The canyon at this location is a perennial stream and eventually flows into the Rio Grande approximately 10 miles southeast of the site.

## 1.4 Site Map

The site map is provided as Figure B-1 and illustrates the facility's activities: including property boundaries, structures, impervious surfaces, operational areas as well as information on drainage patterns, stormwater and erosion control structures, potential pollutant sources, and nearby receiving streams.

As required by the 2015 MSGP, the following information specific to the facility is shown either on the site map or with additional information provided in this SWPPP.

- **Site Boundaries and Acreage.** The site covers approximately 8.5 acres
- **Significant Structures and Impervious Surfaces.** The site is 90% impervious, primarily structures and paved lots.
- **Direction of Stormwater Flow and Site Drainage.** Direction of flow is indicated with arrows.

- **Locations of Structural Stormwater Control Measures.**
- **Locations of all Receiving Waters.** In the immediate vicinity of the facility, indicating if any of the waters are Impaired and, if so, whether the waters have TMDLs established for them (see paragraph below this list). 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.** Of which each will require a unique identification code for each outfall (e.g., Outfall 022, 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 none in the direct vicinity of the facility. However, a map for threatened and endangered species within LANL property is included as Figure B-3.
- There are no non-stormwater discharges at the facility (see certification in Attachment 3)
- Locations of the following activities where such activities are exposed to precipitation:
  - fueling stations (none, however, refueling trucks are kept on site);
  - vehicle and equipment maintenance and/or cleaning areas;
  - loading/unloading areas;
  - locations used for the treatment, storage, or disposal of wastes;
  - liquid storage tanks;
  - processing and storage areas;
  - immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility;
  - transfer areas for substances in bulk;
  - machinery; and
  - locations and sources of run-on to the site.

## 2.0 POTENTIAL POLLUTANT SOURCES

Industrial activities that could potentially result in releases to the environment are summarized below. In general, materials stored in outside locations at the TA-60-01 HES have secondary containment units, are stored in enclosed sheds or structures, or covered with tarps. The trench drain on the east side of the lower shops discharges to an oil-water separator (OWS) which prevents oil discharge to the environment. MicroBlaze and oil absorbent materials are kept on hand to clean up spills immediately should they occur. The primary industrial activities that could be exposed to stormwater (and associated pollutants) are provided below and in the site map listed in Figure B-1.

### 2.1 Potential Pollutants Associated with Industrial Activity

#### Upper East Lot:

- **Bulk Storage Area:** outdoors and adjacent to the bottom (north) shop. The area contains four plastic (poly) secondary containment basins that hold drums of antifreeze, diesel exhaust fluid, diesel fuel and window washing fluid. The plastic basins are contained within a concrete secondary containment unit, which has the capability to discharge to the trench drain and oil/water separator.

*Potential pollutants include: antifreeze, diesel exhaust fluid/fuel, window washing fluid, oil.*

- **NM Special Waste Storage Area (Site ID# 2266):** outdoors in the mid-section of the upper east lot. This area consists of several 55-gallon steel drums sitting on wooden pallets. The drums are used to store waste oil mixed with soil or oil-dry product used during cleanup of oil leaks in or around the shop. *Potential pollutants include: used oil/mixed oil, petroleum contaminated media.*
- **Empty 55-gallon drum storage area:** is located adjacent to the NM special waste storage area. The drums previously contained fluids for vehicle maintenance and are eventually recycled. *Potential pollutants include: residuals from petroleum products, oils, hydraulic fluid, diesel exhaust fluid, antifreeze, window washing fluid.*
- **Used Oil Storage Areas (2):** a 500-gallon poly-tank at the northeast side of the building, which serves the bottom shops; and a 150-gallon poly-tank at the southeast side of the building, which serves the upper shops. Used oil is pumped from the shops into the tanks. Both poly-tanks are in concrete secondary containment units. *Potential pollutants include: used oil/oily water.*
- **Drum Storage at Upper Shop:** southeast section of the building outside of upper shops. Consists of 55-gallon steel/poly drums containing new motor oil, hydraulic fluid, and window washing fluid. The area is on asphalt and protected by a secondary containment berm, which contains a locked discharge valve. *Potential pollutants include: petroleum products, oils, hydraulic fluid, diesel exhaust fluid, antifreeze, window washing fluid.*
- **Refueling Trucks, Heavy and Small Equipment:** parking and staging in the upper east lot for various equipment. Refueling trucks, heavy equipment and vehicles waiting for repair, small ATVs, tire recycle. *Potential pollutants include: leaks of petroleum products, hydraulic fluid, antifreeze, gasoline/fuels.*
- **Metal Parts for Heavy Equipment:** primarily in the northeastern section at the back of the upper east lot. Metal racks containing blades and other metal parts for heavy equipment. *Potential pollutants include: metal residuals.*
- **East Repair Bays:** located on the north and south sections of the building. Vehicle and heavy equipment repair and maintenance takes place within the bays. Oil recycling and oil filter crushing takes place at the lower north bay. Oil filters are crushed and placed into drums which are picked up on a regular basis by Mesa Oil. *Potential pollutants include: leaks of petroleum products, oils, hydraulic fluid, antifreeze, gasoline/fuels.*

#### **Lower East Lot:**

- **Miscellaneous Heavy Equipment Parts and Metal Storage:** stored throughout the lower east lot. Storage consists of heavy equipment buckets, blades, sheet metal, metal associated with crane operations, and various other parts. *Potential pollutants include: metal residuals, machine oil residuals.*
- **TA-60-117 Paint Storage Shed:** used by painting crews to store various paints. Paint is removed and returned to the shed as needed for jobs. The paint is typically loaded and unloaded from a flat-bed

truck or work truck. *Potential pollutants include: paints, lacquers, thinners, caulking/grouting products.*

- **Metal and Wood Roll-Off Bins for Recycle:** located in the NW corner of the lower east lot. These 30 yard recycle bins are used to store scrap metal and wood until the bins are picked up by the LANL Material Recycling Facility (MRF). The bins are typically emptied on a weekly basis. *Potential pollutants include: metal residuals, machine oil residuals, wood shavings, wood treatment chemicals/residuals.*
- **Miscellaneous Craft Storage Sheds:** several storage sheds are in the lower east lot and are used to store a variety of materials for craft workers. TA-60-129 is used to store spill clean-up material and small equipment parts. *Potential pollutants include: miscellaneous (all those listed above).*

#### Upper & Lower West Lots:

- **Vehicle and Small Equipment Parking:** located in the upper west lot, consists of parking for personally owned vehicles, government vehicles and small equipment such as portable lighting units, compressors and generators. General parking is located directly west of building 60-01 and parking for the Taxi service is located on the SW section of the building. *Potential pollutants include: leaks of petroleum products, oils, hydraulic fluid, antifreeze, gasoline/fuels.*
- **Heavy Equipment Parking and Lower Repair Bay:** the lower repair bay is located on the NW section of the building and heavy equipment parking/staging is directly west of the bay on an unpaved area. *Potential pollutants include: leaks of petroleum products, oils, hydraulic fluid, antifreeze, gasoline/fuels.*
- **Metal Parts Rack:** is located on the NW side of the lower repair bay and holds a variety of metal parts needed for heavy equipment. *Potential pollutants include: metal residuals.*

#### Solid Waste Management Units (SWMUs) and Areas of Concern (AOC)

Three SWMUs were located within the fenced boundary of the facility. Two of the SWMUs: **60-019(a)** and **60-003** have been approved for No Further Action (NFA) by the State (NMED) and have been removed from the LANL/DOE RCRA permit.

The remaining PRS, **60-007(b)** is covered by the NPDES Stormwater Individual Permit (IP) # NM0030759. (SWMU) 60-007(b) is a storm drainage ditch at TA-60 that starts approximately 600 ft from a paved area directly north of the motor pool building (building 60-1) and extends to the bottom of Sandia Canyon. Two parking lots located east of building 60-1 drain to a ditch that eventually joins the SWMU 60-007(b) drainage ditch. Other former sources of potential contamination to the ditch are a steam-cleaning pad, a used-oil storage tank, and an oil/water separator. In addition, equipment that used PCB-containing oil was stored on an asphalt area east of building 60-1. The areas of the ditch visibly affected by these sources were remediated in 1986 by removing stained soil down to bedrock. Decision-level data for SWMU 60-007(b) consists of 20 samples collected from 12 locations in 2009. The 2015 supplemental investigation report concluded that the nature and extent of contamination have been defined and no further sampling for extent is warranted. This site does not pose a potential unacceptable risk or dose

under the industrial, construction worker, or residential scenarios and poses no unacceptable ecological risk.

## 2.2 Spills and Leaks

Spills and leaks for the past 3 years (2016-2018) are summarized below. Spills and leaks that occurred prior to 2016 will be documented in previous SWPPP revisions.

<b>Date</b>	<b>Description</b>	<b>Outfall(s) Affected</b>
August 2018	Approximately 1 cup of gasoline spilled onto the underlying soil west of TA-60-01 (near the intersection of Eniwetok and Maniac) during the refueling of a man lift. The spill occurred when the truck's fuel hose developed a leak while dispensing fuel. The operation was stopped upon discovery of the spill and the impacted soil was removed. Spill was remediated immediately after occurring.	None
June 2018	Approximately 2 gallons of hydraulic fluid spilled on the east side of TA-60-1 when the filter on a vehicle (Vacuum Truck G82-0168R) PTO failed. The hydraulic fluid spilled onto the underlying concrete and a small portion entered a trench drain connected to the facility's oil water separator. Upon discovery of the spill, absorbent material was deployed to minimize the extent of the release and Micro-blaze was applied to the impacted area. The spill did not leave the site or adversely impact any SWMUs or AOCs and is not reportable to NMED. Corrective actions were completed shortly after the spill occurred.	None
January 2018	Refueling truck E29904 had a coolant line leak outside of the southeast repair bay on the concrete pad. The truck was in the process of being repaired. Dry absorbant was applied to the leaked coolant. The leak was contained on site and did not reach a storm drain or outfall. The leaked coolant was cleaned up and the leak was stopped until the vehicle was fully repaired.	None
September 2017	~50 gallons of water and calcium chloride from inside a heavy equipment tire discharged when the tire was being removed from its wheel. There was also evidence of some particulates from inside the tire discharged with the water. The water flowed through the upper east parking lot and reached the basecourse on the east side yard, but did not leave the site. Site personnel immediately used absorbent to contain the release and removed as much of the discharged liquid as possible. The top layer of the impacted soil/basecourse was also removed. Additionally, a street sweeper was brought on site to collect and remove as much of the particulates transported from the discharge in the parking lot as possible. MicroBlaze was applied to the impacted asphalt.	None

December 2016	A John Deer grader was being taken into the shop for repairs when a valve broke, releasing 2-4 gallons of hydraulic fluid. The fluid leaked from the east staging area to the front middle bay of the shop. The spill was cleaned up immediately with floor dry absorbent and MicroBlaze.	None
November 2016	A refueling truck (with a defective pump valve) leaked ~1 gal of diesel fuel onto the southern end of the upper HE lot. The spill was immediately cleaned up with floor dry absorbent.	None
October 2016	A timber mulcher (undergoing repairs) had a defective tank valve and spilled hydraulic fluid into the shop. The spill was contained and cleaned up in the bay and waste was drummed for disposal.	None
September 2016	A mobile drug testing unit (awaiting repairs) had a fuel tank leak in the upper east lot. The fuel was immediately cleaned up with floor dry absorbent and the vehicle was taken into the shop for repairs.	None
July 2016	A portable Onan generator (E28493) was overfilled and approximately 1 ½ gallons of diesel fuel leaked out onto the asphalt. Absorbent was applied to the impacted area and was then swept up and contained for disposal. The area was also MicroBlazed.	None
June 2016	During a routine SWPPP inspection, a fire truck (E201094) was found to be leaking oil (1/2 gallon). The truck was taken into the shop to repair. The impacted area was cleaned and MicroBlazed.	None

**Areas on Site Where Potential Spills/Leaks Could Occur:**

LOCATION	OUTFALLS (see site map)
Heavy Equipment Parking/Storage (general)	021, 022, 023, 024, 025
Lower East Bays (crushed oil filter storage area, bulk oil/chemical storage, used oil, pressure wash)	Oil Water Separator-OWS
Lower West Parking Lots and Bays (heavy equipment staging/repairs, vehicle parking)	024

Upper West Parking Lots (heavy equipment staging, vehicle parking)	025
Upper East Lot and Bays (used oil, NM special waste storage area, vehicle/equipment staging and storage, trash dumpsters)	021, 022
Lower East Lot (various material storage, craft storage, metal and wood scrap roll-off bins)	023

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.

The probability of spills or releases at the facility is minimized by the application of good housekeeping procedures and appropriate operational methods. As this facility performs maintenance and repairs on heavy equipment vehicles, there is spill protection clean-up materials readily available on site. Appropriate response measures for a spill or release of hazardous materials are applied when addressing spills. The specific spill response and cleanup procedures will depend on the nature of the spilled material. Specific spill response and reporting procedures for LANL are listed in Section 3.1.4 of this SWPPP.

### 2.3 Unauthorized Non-Stormwater Discharges

There are no NPDES permitted non-stormwater discharges or unpermitted outfalls associated with the facility. Potential sources of non-stormwater discharges at the facility include the testing of fire hydrants in the area. All wastewater drainage within the building discharges to the SWWS.

The “Non-Stormwater Discharge Assessment and Certification” is located in Attachment 3. This form certifies that all stormwater outfalls have been evaluated for the presence of non-stormwater discharges. The form will be updated whenever a change in possible non-stormwater discharge is determined.

### 2.4 Salt Storage

No salt storage or piles containing salt are present at the facility. There is no salt storage anticipated for this facility as part of an industrial activity.

### 2.5 Historical Data Summary

The following tables provide sampling data at the facility for the past 3 years.

#### **Permitted Facility: TA-60-01 Heavy Equipment Shop**

CY 2016

Monitored Outfall	Discontinue Monitoring		Continue Monitoring				
	Average of four monitoring values did not exceed benchmark; quarterly monitoring discontinued per Section 6.2.1.2	Impaired water constituent was not detected in storm water discharge; annual monitoring discontinued per Section 6.2.4.1.	Fewer than four quarterly samples have been collected in current sequence. Average concentration is not mathematically certain to exceed benchmark.	Average concentration mathematically certain to exceed benchmark.	Average of four quarterly monitoring values exceeded benchmark.	Impaired water constituent was detected, but did not exceed New Mexico Water Quality criterion	Impaired water constituent exceeded New Mexico Water Quality criterion.
022	N/A <sup>1</sup>	Total Aroclor, TI	N/A	N/A	N/A	Adjusted Gross Alpha	Al, Cu

<sup>1</sup>N/A – No quarterly benchmark monitoring required.

CY 2017

Monitored Outfall	Discontinue Monitoring		Continue Monitoring				
	Average of four monitoring values did not exceed benchmark; quarterly monitoring discontinued per Section 6.2.1.2	Impaired water constituent was not detected in storm water discharge; annual monitoring discontinued per Section 6.2.4.1.	Fewer than four quarterly samples have been collected in current sequence. Average concentration is not mathematically certain to exceed benchmark.	Average concentration mathematically certain to exceed benchmark.	Average of four quarterly monitoring values exceeded benchmark.	Impaired water constituent was detected, but did not exceed New Mexico Water Quality criterion	Impaired water constituent exceeded New Mexico Water Quality criterion.
022	N/A <sup>1</sup>	—	N/A	N/A	N/A	Adjusted Gross Alpha	Al, Cu

<sup>1</sup>N/A – No quarterly benchmark monitoring required.

CY2018

Monitored Outfall	Discontinue Monitoring		Continue Monitoring				
	Average of four monitoring values did not exceed benchmark;	Impaired water constituent was not detected in storm water	Fewer than four quarterly samples have been collected in current sequence.	Average concentration mathematically certain to exceed benchmark.	Average of four quarterly monitoring values	Impaired water constituent was detected, but did not	Impaired water constituent exceeded New Mexico



	quarterly monitoring discontinued per Section 6.2.1.2	discharge; annual monitoring discontinued per Section 6.2.4.1.	Average concentration is not mathematically certain to exceed benchmark.		exceeded benchmark.	exceed New Mexico Water Quality criterion	Water Quality criterion.
022	N/A <sup>1</sup>	—	N/A	N/A	N/A	Adjusted Gross Alpha	Al, Cu

<sup>1</sup>N/A – No quarterly benchmark monitoring required.

### 3.0 STORMWATER CONTROL MEASURES

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.

Proper material management and storage minimize the potential for exposure of precipitation and runoff to potentially hazardous materials. Containers that could be susceptible to spillage or leakage will be plainly labeled (e.g., “Used Oil,” “Spent Solvents,” etc.). Most operations are performed indoors, and materials are stored indoors or outdoors in enclosed structures. The potential for exposure of industrial materials to stormwater is limited primarily to vehicle parking and staging in the west lots or the upper east lot; or during the transfer of materials in the upper or lower east lots. Heavy equipment repair and maintenance is performed inside the repair bays. Adequate secondary containment is provided for outdoor storage units containing potentially hazardous materials.

#### 3.1 Non-Numeric Technology-Based Effluent Limits

Part 8 of the 2015 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 of this SWPPP and any co-located industrial activities as defined in Appendix A of the 2015 MSGP. The sector specific requirements only apply to those areas of the facility where the sector-specific activities occur.

The following Sector-Specific Non-Numeric Effluent Limits are addressed at this facility:

- **Vehicle and Equipment Storage Areas:** See sections 3.1.1 - 3.1.8 for specific controls in these areas.
- **Material Storage Areas:** See sections 3.1.1 - 3.1.8 for specific controls in these areas.
- **Employee Training:** See section 4.1.5 for employee training requirements.

##### 3.1.1 Minimize Exposure

- **Covered and Enclosed Structures:** Industrial materials are kept inside the Heavy Equipment shop or enclosed storage sheds when at all possible.

- **Spill Control:** Industrial areas are frequently inspected for leaks and checked during monthly inspections. Oil absorbent and Micro-Blaze is available in the Heavy Equipment Shop for immediate containment and clean-up if needed.
- **Oil Water Separator (OWS):** The oil water separator filters out oil residuals from the lower east repair bays, the bulk storage units, and vehicle washing area at the NE section of the building. The OWS drains filtered water to the sanitary sewer system. OWS preventive maintenance procedures are described in Section 3.1.3 of this SWPPP.
- **Petro Barriers:** Are installed at the grated storm drains at the northeastern boundary of the upper east lot. The barriers filter out oil residuals from the upper east lot before stormwater is discharged to the outfalls below. PM procedures for the Petro Barriers are described in Section 3.1.3 of this SWPPP.
- **Secondary Containment Units:** Used oil storage areas and bulk oil and products for vehicle maintenance (i.e. antifreeze, diesel exhaust fluid, window washing fluid) are kept in secondary containment units to minimize releases should a spill or leak occur.
- **Metal Storage Racks:** metal piping and materials are kept on metal storage racks off the ground. Metal materials that are subject to rust are kept covered with heavy duty tarps.
- **Covers for Trash Dumpsters and Recycle Bins:** Trash dumpsters and metal/wood recycle bins located at the facility are normally kept closed or covered when not in use and are emptied on a regular basis. Dumpsters will be kept in good condition and will be repaired or replaced if needed by Roads & Grounds.

### 3.1.2 Good Housekeeping

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

All site areas exposed to precipitation are walked down during daily operations and monthly routine inspections to ensure that the grounds are kept in an orderly condition. The outdoor metal storage areas are inspected to ensure all piping and rustable metal is off the ground on storage racks. Heavy equipment and vehicle staging/parking areas are inspected for leaks or spills as well as storage areas containing oil-filled equipment and secondary containment units. The entire site, including bay areas and outfalls, are inspected for floatable debris, garbage, waste and all other potential pollutants. Dumpsters and roll-off recycle bins will be emptied on a weekly or as-needed basis by Roads and Grounds. Spill clean-up procedures will be followed as listed in Section 3.1.4 of this SWPPP.

### 3.1.3 Maintenance

Control measures at the facility will be kept in effective operating condition by the implementation of scheduled preventive maintenance, procedures, 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 monthly or other routine facility inspections will be documented on inspection forms and entered into the Corrective Action Reports (CARs) database. The CAR will remain open until proper maintenance or corrective action has been completed. CAR information along with documentation of maintenance/repair of control measures will be kept on file in Attachment 9 of this SWPPP.

**Trench Drain and Enviroligix HQB Oil-Water Separator (OWS) PM:**

- The trench drain connecting to the OWS will be inspected weekly by HES Personnel.
- The trench drain will be pumped and cleaned out once it reaches half of its holding capacity.
- Jet-rodding of the OWS inlet pipe will be performed if the inlet is clogged.
- Mesa Oil subcontractor will pump out oily water from the OWS each month.
- Navarro subcontractor will remove sludge from the OWS on a semi-annual schedule.

The OWS maintenance logs and O&M Maintenance manual will be kept in Attachment 21 of this SWPPP.

**Petro Barriers PM:**

- Petro Barriers will be inspected monthly.
- Filters will be cleaned when clogged and replaced if no longer functional.
- Media will be replaced per manufacturer's specifications or sooner if a malfunction is observed.

**3.1.4 Spill Prevention and Response**

Spills, leaks, or releases will be prevented and minimized by the application of good housekeeping procedures, BMPs, and engineering/administrative controls. Containers that could be susceptible to spillage or leakage will be plainly labeled (e.g., "Used Oil," "Spent Solvents," etc.) to encourage proper handling and facilitate rapid response if spills or leaks from these containers should occur. Spill cleanup materials are located inside TA-60-01 and are readily accessible to facility personnel in the event of a spill or leak.

In general, the approach to spill cleanup is to secure the spill area and contact the Operations and Maintenance Coordinator (OMC) and/or the Security and Emergency Operations (SEO) Emergency Management & Response (EM&R) Team (if necessary). For incidental releases, MicroBlaze or dry absorbents can be used and the contaminated absorbents disposed of properly.

The SEO or Facility Duty Officer shall report all spills or releases. All uncontrollable spills or releases must be reported to the SEO/EM&R Office or Facility Duty Officer by calling 667-6211 or, after hours, at 667-7080. 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, the SEO/EM&R Office will determine appropriate cleanup procedures and will notify the individuals or organizations responsible for completing spill reports or fulfilling regulatory reporting requirements.

Spills are reported to EPC-CP for documentation and reporting purposes. The completion of a spill report is required in the event of a spill. The spill 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 or written notification to the National Response Center, Environmental Protection Agency Region VI, or the New Mexico Environment Department

(NMED). The determination for the type of reporting will be made by the SEO/EM&R Office, FOD and EPC-CP in accordance with Laboratory and DOE policies and federal and state regulatory reporting requirements. Copies of internal spill reports are maintained by the responsible organization.

The EPC-CP procedure for spill reporting and response, *ENV-CP-QP-007, Spill Investigations*, can be found in Attachment 20 of this SWPPP.

### 3.1.5 Erosion and Sediment Control

90% of the outside surface region associated with the facility, contains structures or is paved with asphalt or concrete; therefore, erosion and sediment transport from the site itself is unlikely. BMPs are installed at outfalls to function as flow dissipation devices, which minimize the potential for erosion at facility discharge points.

- **Stabilized Drainage Channels at Outfalls:** the primary drainage channel for Outfall 022 and 021 is stabilized with rip-rap to prevent erosion and minimize sedimentation in the channel. Outfall 024 consists of an asphalt run-down and Outfall 025 contains a drainage channel reinforced with rock check dams. Outfall 023 is a grated storm drain that discharges to a corrugated metal culvert and rock-lined channel at the eastern facility boundary.
- **Gravel Bags/ECobloks:** are used at outfall inlets and other areas to minimize sedimentation to outfalls and direct stormwater for appropriate drainage.

### 3.1.6 Management of Runoff

The majority of stormwater runoff from outdoor industrial areas at the facility is captured by one of the 5 outfalls and associated drainage areas. The outfalls typically consist of stabilized drainage channels or grated storm drains that discharge to culverts (see Section 1.3). Other specific run off controls are listed below:

- **Metalloxx Wattles:** These wattles are used to filter out metal residuals in stormwater runoff. There are currently wattles located before discharge points at Outfall 022.
- **Gravel Bags & Eco-Bloks:** Function as flow dissipation devices for Outfalls 021, 022, 023, and 024. They also minimize sediment transport in runoff and direct runoff to stabilized channels.
- **Asphalt curbing and berming:** is utilized to direct runoff to designated drainages and outfalls.
- **Secondary Containment Units:** Used oil storage areas and bulk oil and products for vehicle maintenance (i.e. antifreeze, diesel exhaust fluid, window washing fluid) are kept in secondary containment units to minimize releases should a spill or leak occur.
- **Sediment Retention Basin:** is located at the northeast edge of the upper east lot. The basin is constructed of rip-rap and is used to allow sediments to settle out of stormwater before discharge to Outfall 022.
- **Petro Barriers:** are installed in the grated storm drains at the southeastern section of the upper east lot. These barriers contain oil absorbing media that filter out petroleum products from stormwater runoff.

- **Envirologix HQB Oil Water Separator (OWS):** is located in the upper northeast section of the east lot. The OWS receives stormwater and wash water from the trench drain east of the shop. The OWS is designed to separate both heavy oils (asphalt and grease) and light oils (motor oil) from wash water and stormwater runoff and also separates sand and gravel from influent. The OWS discharges to SWWS, which prevents discharge to the environment.

See site map in Figure B-1 or Outfall information provided in Sections 1.3 of this SWPPP for more detailed information on drainage patterns and control measures associated with this facility.

#### 3.1.7 Salt Storage Piles or Piles Containing Salt

See Section 2.4.

#### 3.1.8 Dust Generation and Vehicle Tracking of Industrial Materials

90% of the surface region associated with the facility (except for vegetated areas adjacent to the facility boundary) either contains structures or is paved with asphalt or concrete. Therefore, dust generation at the facility is minimal and dust suppression is not typically required. Items that are frequently removed from the facility primarily include heavy equipment and government vehicles, which are kept on paved parking areas or roadways; and Materials of Trade transported by craft workers to and from jobsites. Raw industrial materials are not transported to/from the site.

### 3.2 Numeric Effluent Limitations Based on Effluent Limitations Guidelines

The TA-60-01 Heavy Equipment Shop is classified under **Sector P- Land Transportation and Warehousing** and does not meet the industrial category requirements for effluent monitoring as listed in Part 2.1.3 (*Table 2-1 Applicable Effluent Limitations Guidelines*) of the 2015 MSGP. Benchmark monitoring is also not required at the facility.

### 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 sampled can change yearly based on the requirements of the MSGP. The table in Section 4.7 lists the current year's (2019) sampling requirements and parameters.

Stormwater from the TA-60-01 HES discharges to Sandia Canyon. Certain stream reaches within Sandia Canyon have been identified as impaired waters by the NMED Surface Water Quality Bureau (SWQB). According to the 2014-2016 State of NM Clean Water Act 303b/305b Integrated Report and Final List of Assessed Surface Waters, pollutants causing the impairment are listed as: *Gross Alpha, Aluminum, PCB (Aroclors), Copper, and Thallium*. Primary potential pollutant sources have been identified as post development erosion/sedimentation and urban runoff (NMED 2014). EPA has not yet approved or established TMDLs for Sandia Canyon.

## 4.0 SCHEDULES AND PROCEDURES

### 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.

#### 4.4 Erosion and Sediment Control

See Section 3.1.5 of this SWPPP.

#### 4.5 Employee Training

Employee training is essential to effective implementation of the SWPPP. The goals for the training program are to ensure that employees are more capable of preventing spills, responding safely and effectively to an accident when one occurs, and recognizing situations that could lead to stormwater contamination.

Per section 2.1.2.8 of the 2015 MSGP, training relevant to the SWPPP is required for all operational workers at the facility who work in areas where industrial materials or activities are exposed to stormwater (MSGP sites); 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 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 is conducted at least annually.

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 10 of this SWPPP.

The topics in this SWPPP that are covered in the latest version of LANL's training (ENV-CP-QAPP-MSGP, Stormwater Multi-Sector General Permit for Industrial Activities Program) include the following:

- Overview and goals of the SWPPP;
- 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 to be maintained;
- The proper procedures to follow with respect to the permit's pollution prevention requirements; and
- When and how to conduct inspections, record applicable findings, and take corrective actions.

#### 4.6 Routine Facility Inspections and Quarterly Visual Assessments

Routine inspections at this facility will be conducted and documented monthly and per *ENV-RCRA-QP-023, MSGP Routine Facility Inspections* (Attachment 15).

Visual inspections are conducted in accordance with *EPC-CP-QP-064, MSGP Stormwater Visual Assessments* (Attachment 17).

#### 4.6.1 Routine Facility Inspections

At least once each calendar year, the routine inspection will be conducted during a period when a stormwater discharge is occurring. The inspection will be performed by a qualified member of the Stormwater PPT (typically the DEP or EPC-CP Program Lead). 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/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 out 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 waste or 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.

The Stormwater PPT member performing the inspection will document the inspection and will note potential storm water pollution problems that were encountered on the routine facility inspection form. Any required corrective actions identified during the inspection will be 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 in between monthly routine inspections to further ensure compliance with the SWPPP. The routine inspection forms can be found in Attachment 7 of this SWPPP and meets the requirements listed in the 2015 MSGP (Section 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 sample and visual assessment must be collected and performed at each outfall. The visual assessment will be conducted by a qualified member of the Stormwater PPT (DEP or EPC-CP Technical Lead). The visual assessment must 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 practical thereafter. Or document why it was not possible to collect the sample within the first 30 minutes (i.e. adverse conditions, not enough flow, etc.)
- Conducted at least 72 hours since the last storm event; or document that the 72-hour period is representative of your local storm events during the sampling period.

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 snow melt discharge (taken during a measurable discharge from the site).

For facilities with significantly 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 outfall.

The Stormwater PPT member performing the visual assessment will document potential stormwater pollution problems that were observed during the assessment on the Quarterly Visual Assessment form (Attachment 8). Any required corrective actions identified during the assessment will be addressed in accordance with Section 6.0 *Corrective Actions and Deadlines* of this plan.

#### 4.7 Monitoring

Analytical monitoring comprised of Impaired Waters monitoring will be performed annually on stormwater discharges from the site. Monitoring events will be from storm events that result in an actual discharge from the site and that follow the preceding measurable storm event by at least 72 hours (3 days). For runoff from snowmelt, the monitoring will be performed at a time when a measurable discharge from the site occurs.

Monitoring will be conducted according to test procedures approved under 40 CFR Part 136. Runoff samples will be 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 will be collected as soon as practicable after the first 30 minutes and documentation will be kept with the SWPPP explaining why it was not possible to take samples within the first 30 minutes.

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 samples according to the relevant monitoring schedule, a substitute sample will be collected during the next qualifying storm event or as soon as practical.



Monitoring occurs at automated sampling station **MSGP02201** (Outfall 022) as described in Section 1.3. Discharge from the facility is east to Sandia Canyon (impaired waters), which is a tributary of the Rio Grande located approximately 10 miles east of the facility. Outfalls 021, 023, 024 and 025 are “substantially identical” to Outfall 022 based on common potential pollutant sources, drainage areas, activities within the drainage areas and general site topography and characteristics. Outfall locations are shown on the site map provided in Figure B-1.

Monitoring will continue annually for constituents associated with impaired waters until that constituent is no longer detected in stormwater samples. If the impaired water constituent exceeds the New Mexico Water Quality criterion, the Pollution Prevention Team and EPC-CP personnel 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 Section 6.2 of the 2015 MSGP).

For each monitoring event, except snowmelt monitoring, the following information will be recorded and maintained through field data sheets, 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
- Time (in days) since the previous measurable storm 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.

For snowmelt monitoring, all information except rainfall event durations, totals, and time since previous event will be included. Additionally, all records of monitoring information, including all calibration and maintenance records will be maintained for a minimum period of at least three years from the date the permit expires.

Annual Impaired Waters monitoring is required for the TA-60-01 HES. The 2015 MSGP Sampling and Analysis Plan proposes that Outfall 022 be sampled for: aluminum, gross alpha, copper, thallium, and PCBs (Aroclors). However, the impaired water pollutants to be sampled can change yearly based on the requirements of the MSGP. The Sampling and Analysis plan will be updated each year.

LANL's applicable stormwater monitoring procedures can be found in the following Attachments:

EPC-CP-047, *Inspecting Stormwater Runoff Samplers and Retrieving Samples for the MSGP* (Attachment 18) and EPC-CP-048, *Processing MSGP Stormwater Samples* (Attachment 19).

The table on the following page lists the current Summary of Monitoring Requirements at the TA-60-1 HES. The monitoring values have been modified to reflect New Mexico facility water quality standards and are based on the lowest water quality standards from the *Standards for Interstate and Intrastate Surface Waters* (as approved on June 5, 2013), 20.6.4.900 NMAC; and as set forth in section 9.6.2.1 of the 2015 MSGP.

## Summary of Monitoring Requirements

Outfall: 022

Outfall	Monitoring Requirement	Industrial Sector	Assessment Unit	Analyte	Filtered/ Unfiltered	Regulatory Standard	Units	Regulatory Standard Type	Regulatory Standard Reference
022	Impaired Waters	-	NM-9000.A_047	Total Aroclor	UF	0.2	ug/L	2007 EPA R6 MQL	20.6.4.900 NMAC Subpart J/ 20.6.4.12 NMAC Subpart E
	Impaired Waters	-	NM-9000.A_047	Al	F10u <sup>1</sup>	1010	ug/L	NM 2010 Aquatic Chronic 80 mg	20.6.4.900 NMAC Subpart I
	Impaired Waters	-	NM-9000.A_047	Cu	F <sup>2</sup>	7	ug/L	NM 2010 Aquatic Chronic 80 mg	20.6.4.900 NMAC Subpart I
	Impaired Waters	-	NM-9000.A_047	Temp	UF	24	°C	NM 2010 Aquatic Chronic	20.6.4.900 NMAC Subpart H (2)
	Quarterly Benchmark	P	No Benchmark Monitoring Required						

<sup>1</sup>F10u – 10 µm filter

<sup>2</sup>F - 0.45 µm filter

## 5.0 DOCUMENTATION FOR ELIGIBILITY CONSIDERATIONS UNDER OTHER FEDERAL LAWS

### 5.1 Endangered Species

The Final Site-Wide Environmental Impact Statement 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 the 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.

### 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) will be reviewed and revised (as appropriate) so that the 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-storm water 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.

If any of the following conditions occur, a review of the selection, design, installation, and implementation of control measures will be 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. *Note: Benchmark monitoring is currently not required for the facility.*
- If an impaired water constituent exceeds the NM Water Quality criterion (see Section 4.7).

If a review identifies any of the necessary modifications listed above, they will be performed following the corrective action process identified in Sections 6.1 - 6.3.

### 6.1 Immediate Actions

If a corrective action is required, immediate steps must be reasonably taken to minimize or prevent discharges from occurring (i.e. spill clean-up, scheduling repairs) until a permanent solution (if needed) can be implemented. Immediate action means all reasonable steps must be taken the same work day or no later than the following work day (when it is too late in the day to take corrective action).

### 6.2 Subsequent Actions

If further corrective actions are required (e.g. installing or making operational a new or modified control, completing repairs, ordering BMPs) they must be completed by the next storm event, if possible or within 14 calendar days (from initial discovery). If it is infeasible to complete corrective actions within 14 days, documentation of why it is infeasible must be provided in the SWPPP. This documentation must also include a timeframe and schedule for completion of the work, which must be completed no later

than 45 days (from initial discovery). If time needed to make corrective actions will exceed 45 days, EPA must be notified and provided a 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

Upon discovery, required corrective actions will be documented by the DEP (or EPC-CP) and entered into the Corrective Action Database. The action will be kept open in the database until the issue has been resolved. Documentation of Maintenance and Repairs of Control Measures (BMPs) will be kept in Attachment 9 of this SWPPP. Where corrective actions result in changes to procedures or controls documented in this SWPPP, modifications to the SWPPP will be made accordingly within 14 days of completing the corrective action(s). LANL procedure, EPC-CP-QP-022 *MSGP Corrective Actions*, can be found in Attachment 16.

## 7.0 ACRONYMS

BMPs: Best Management Practices

CAR: Corrective Action Report

DO: Division Office

DEP: Deployed Environmental Professional

DESH: Deployed Environmental Safety and Health

EPC-CP: Environmental Protection and Compliance – Compliance Programs (Division)

FOD: Facilities Operations Directorate

LOG-HERG: Logistics - Heavy Equipment Roads & Grounds

MSGP: Multi Sector General Permit

NPDES: National Pollutant Discharge Elimination System

PPT: Pollution Prevention Team

SWPPP: Stormwater Pollution Prevention Plan

UI: Utilities and Institutional Facilities (Utilities Division)

## 8.0 SWPPP CERTIFICATION

**STORMWATER POLLUTION PREVENTION PLAN**  
**TA-60-01 Heavy Equipment Shop**  
Los Alamos National Laboratory

### CERTIFICATION STATEMENT

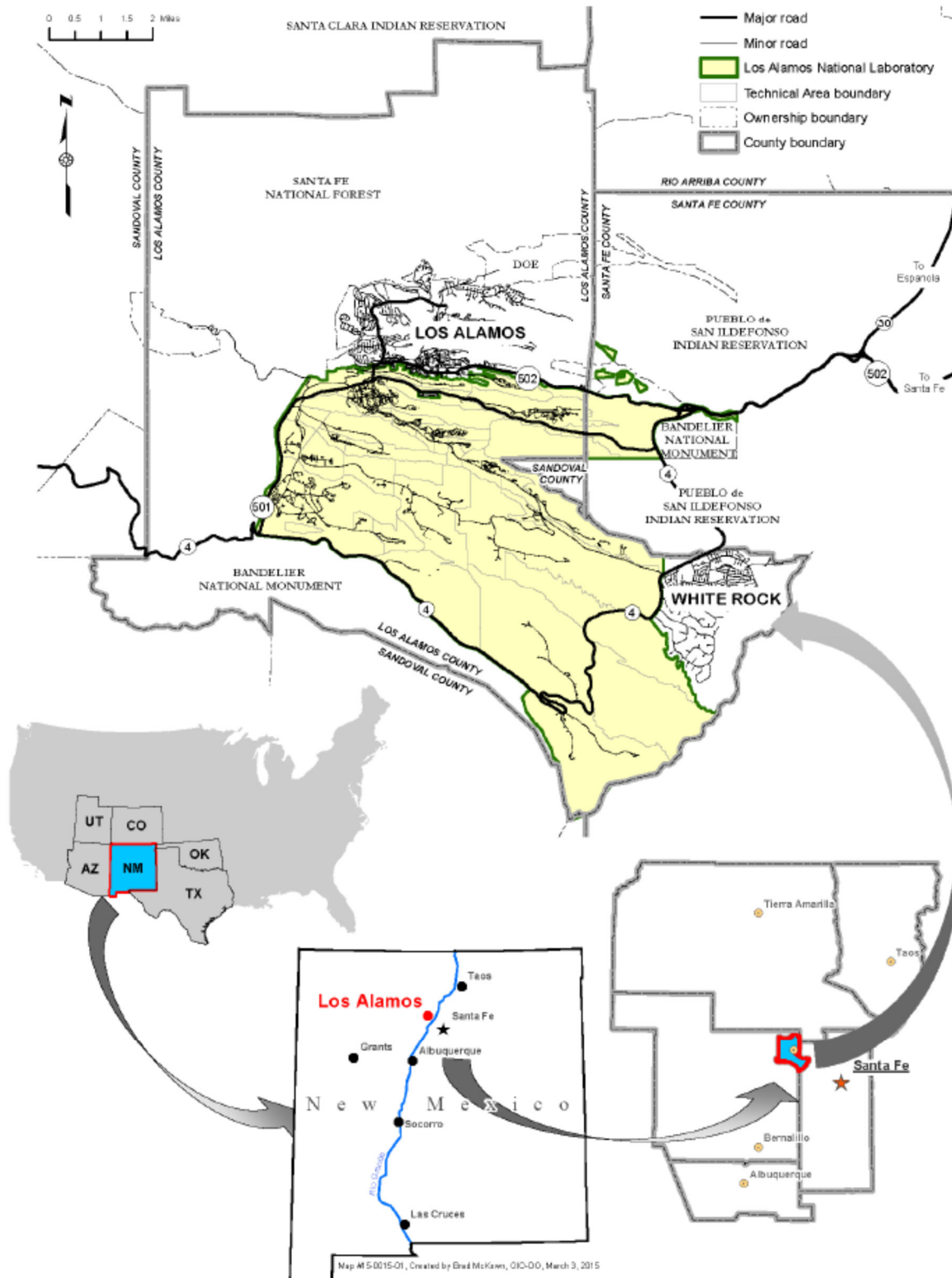
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage 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  Digitally signed by ANDREW ERICKSON (Affiliate)  
Date: 2019.01.23 15:27:17 -07'00'

Date \_\_\_\_\_

**Andrew W. Erickson**  
Facility Operations Director  
Utilities and Institutional Facilities

Figure A - General Location Map





Map(s)

Figure B-1 Facility Site Map

Figure B-2 Nearby Receiving Waters

Figure B-3 LANL Endangered Species Map

TA-60-1  
HEAVY EQUIPMENT YARD  
FIGURE B1 SITE MAP

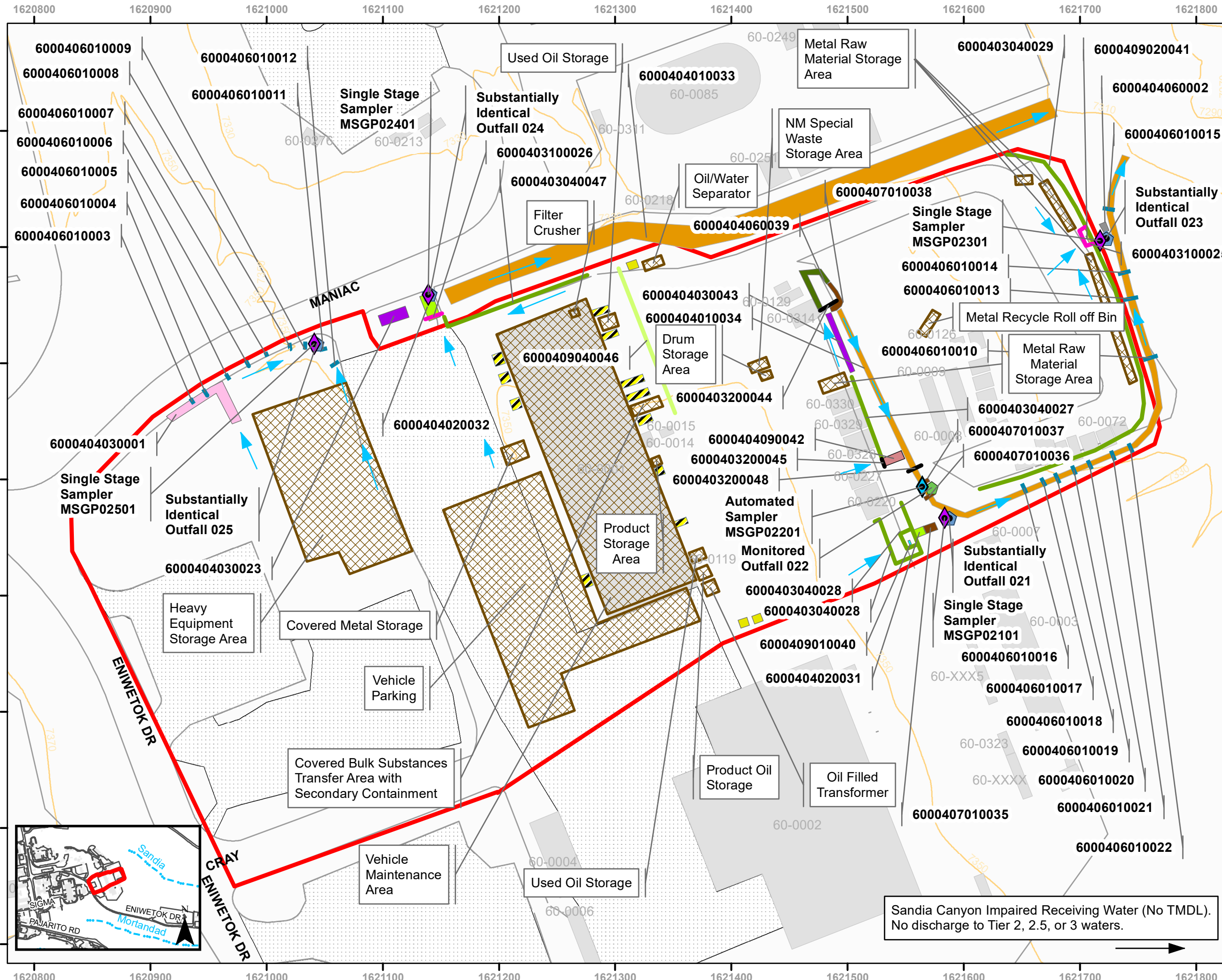
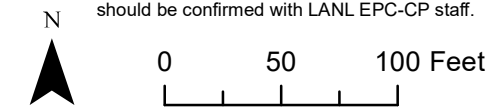
- Automated Sampler
- Single Stage Sampler
- Monitored Outfall
- Substantially Identical Outfall
- Asphalt Berm
- EnviroSoxx w/ MetalLoxx
- Gravel Bags
- Rock check dam
- Trench Drain
- Drainage
- Paved Roads
- 10 ft Contour
- Boundary of Industrial Activity
- Angled Rock Rip Rap
- Asphalt Channel/Swale
- Drop Inlet with Petro Plug
- Drop Inlet with filters
- Earthen drainage channel
- Eco-Blok
- Gabion Swale
- Gabions
- Rip Rap
- Rock Channel/Swale
- Rock Swale
- Industrial Activity Areas
- Loading/Unloading Areas
- Dumpster
- LANL Structures
- Paved Parking Lot
- Flow Direction

7.30 Acres, 100% Impervious Surface.  
Note - No Critical Habitat Areas.

Map number: 16-0015-TA-60-1-Heavy Equipment Yard  
Map created by: Ben Sutter, OI-FD  
Date: January 29, 2018  
Version 4

New Mexico State Plane Coordinate System  
Central Zone (3002)  
North American Datum, 1983 (NAD 83)  
US Survey Ft

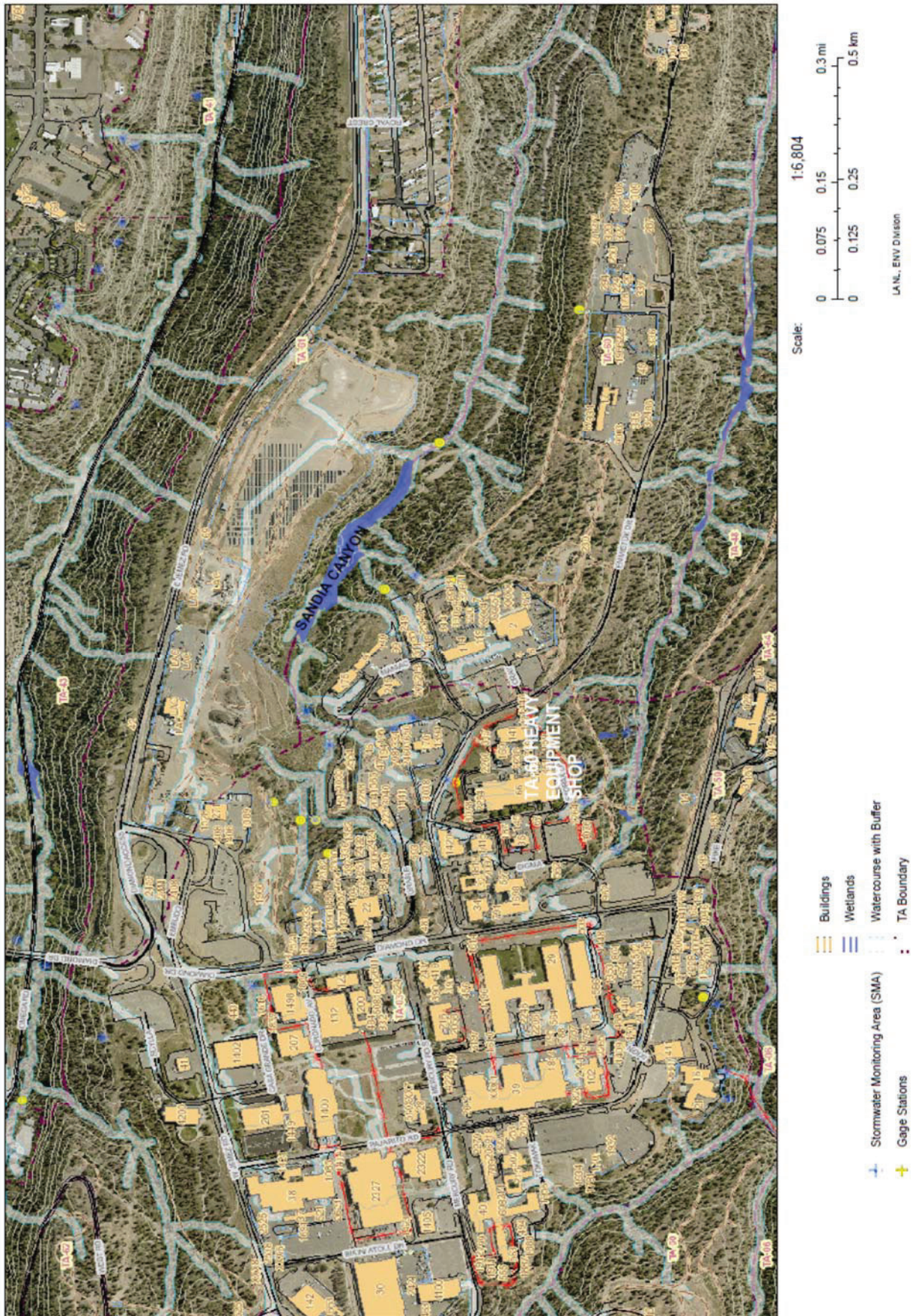
**DISCLAIMER:** This map was created for work processes associated with the Multi-Sector General Permit. All other uses for this map should be confirmed with LANL EPC-CP staff.



Sandia Canyon Impaired Receiving Water (No TMDL).  
No discharge to Tier 2, 2.5, or 3 waters.

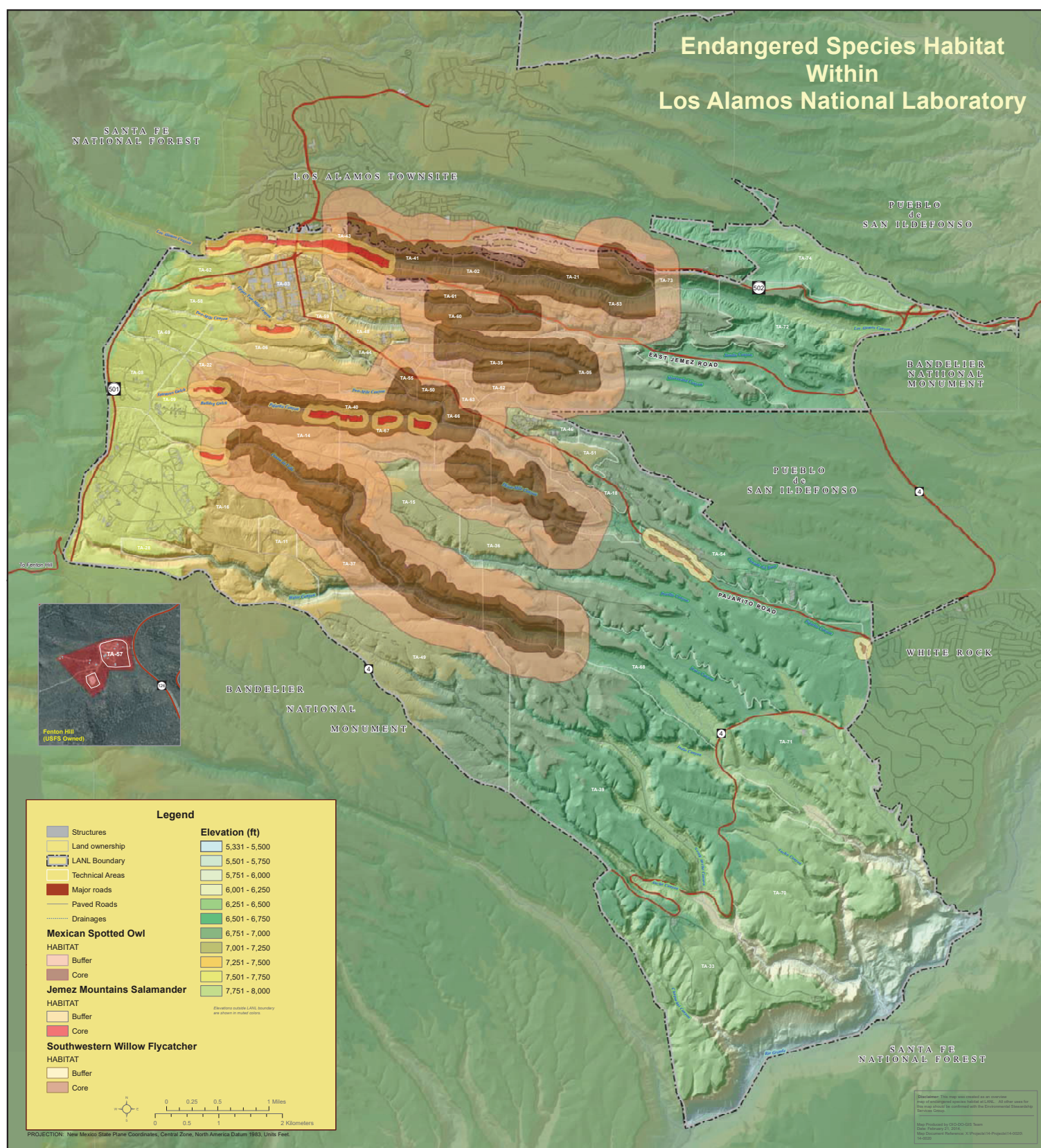


Figure B-2 Nearby Receiving Waters





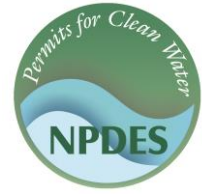
### Figure B-3 Endangered Species Map



Attachment 1: **NOTICE OF INTENT, SUPPORTING DOCUMENTATION, AND UPDATES**



U.S. ENVIRONMENTAL PROTECTION  
AGENCY (EPA)  
NATIONAL POLLUTANT DISCHARGE  
ELIMINATION SYSTEM (NPDES)  
EPA's NPDES EREPORTING HELP DESK



10/26/2018

Triad National Security LLC  
ATTN: Michael W. Hazen  
PO Box 1663 MS K490  
Los Alamos, NM 87545

Facility: Los Alamos National Laboratory  
PO Box 1663  
Los Alamos, NM 87545

NPDES ID: **NMR050013**

Dear Michael W. Hazen:

This letter acknowledges that you have submitted a complete Notice of Intent form to be covered under the NPDES Multi-Sector General Permit (MSGP) for stormwater discharges associated with industrial activity. Coverage under this permit begins at the conclusion of your 30-day waiting period, on **11/01/2018**, unless EPA notifies you that your authorization has been denied or delayed.

For tracking purposes, the following NPDES ID has been assigned to your Notice of Intent: **NMR050013**

As stated above, this letter acknowledges receipt of a complete Notice of Intent. However, it is not an EPA determination of the validity of the information you provided. Your eligibility for coverage under the Permit is based on the validity of the certification you provided. Your signature on the Notice of Intent certifies that you have read, understood, and are implementing all of the applicable requirements. An important aspect of this certification requires that you correctly determine whether you are eligible for coverage under this permit.

As you know, the MSGP requires you to have developed a Stormwater Pollution Prevention Plan (SWPPP) prior to submitting your NOI. The MSGP also includes specific requirements for implementing control measures (e.g., minimize exposure, good housekeeping, maintenance, spill prevention and response), conducting self-inspections and visual assessments of your discharges, taking corrective actions, and conducting staff training. You must comply with any specific requirements applicable to your industrial sector(s) in Part 8 and any state/tribal-specific requirements in Part 9 (see <https://www.epa.gov/npdes/stormwater-discharges-industrial-activities>). You are also required to submit an Annual Report in accordance with Part 7.5 of the MSGP that will contain the results from your past year's routine facility inspections, quarterly visual assessments, and corrective actions.

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

- Quarterly benchmark monitoring (see Part 6.2.1 and Part 8);
- Annual effluent limitations guidelines monitoring (see Part 6.2.2 and Part 8);
- State- or tribal-specific monitoring (see Part 6.2.3 and Part 9);
- Impaired waters monitoring (see Part 6.2.4); and

- Other monitoring as required by EPA (see Part 6.2.5).

Monitoring requirements in the MSGP (i.e., parameters required to be monitored and sample frequency) will be prepopulated on your electronic Discharge Monitoring Report (DMR) in EPA's NetDMR system, which is accessed at <https://netdmr.epa.gov>. Where you have determined that no monitoring requirements apply to your discharge, there is no need to access the NetDMR system. In order to obtain access to this system, you must complete the electronic signature process. Please refer to the following guidance for information about submitting monitoring reports through NetDMR:  
<https://www.epa.gov/npdes/stormwater-discharges-industrial-activities#ereporting>.

If you have general questions regarding the stormwater program or your responsibilities under the Multi-Sector General Permit, please contact:

EPA Region 06

Name: **Nasim Jahan**

Phone: **(214) 665-7522**

Email: [jahan.nasim@epa.gov](mailto:jahan.nasim@epa.gov)

If you have questions about your Notice of Intent form, please call the EPA NPDES eReporting Help Desk at 1-877-227-8965 (toll free) or send an email to [NPDESeReporting@epa.gov](mailto:NPDESeReporting@epa.gov).

EPA NPDES eReporting Help Desk

Operated by Avanti Corporation

1200 Pennsylvania Ave., NW

Mail Code: 4203M

Washington, DC 20460

1-877-227-8965



*Date:* **OCT 01 2018**  
*Symbol:* EPC-DO: 18-358  
*LA-UR:* 18-29182  
*Locates Action No.:* N/A

Stormwater Notice Processing Center  
William Jefferson Clinton East Building – Room 7420  
ATTN: 2015 MSGP Signature Agreement  
U.S. Environmental Protection Agency  
1201 Constitution Avenue, NW  
Washington, DC 20004

**Subject: National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP) Notice of Intent (NOI) Reporting Pursuant to Part B.12.C**

To Whom It May Concern:

This letter serves to document the transmittal of a NOI for Stormwater Discharges Associated with Industrial Activity under the NPDES MSGP for Triad National Security, LLC (Triad) as a new operator for Los Alamos National Laboratory (LANL) pursuant to Part B.12.C of the 2015 MSGP. Triad is replacing Los Alamos National Security, LLC (LANS) as operator of LANL effective November 1, 2018.

EPA's Electronic Reporting Rule requires that NOIs be submitted using the NeT-MSGP program service on the EPA Central Data Exchange system. However, due to the following system limitations previously identified by LANS and coordinated with EPA Region 6 personnel, a complete and accurate NOI cannot be submitted using NeT-MSGP.

1. Part 9.6.2 of the 2015 MSGP, Permit Conditions for the State of New Mexico, requires that benchmark values be modified to reflect New Mexico water quality standards for facilities in New Mexico, based on benchmark values from the Standards for Interstate and Intrastate Surface Waters (20.6.4.900 New Mexico Administrative Code [NMAC]). These modified benchmark values are not recognized by NeT-MSGP and populated in NetDMR.
2. The 2018-2020 State of New Mexico Clean Water Act §303(d)/§305(b) Integrated Report requires monitoring of impaired waters pollutants not available for selection in NeT-MSGP (e.g., Adjusted Gross Alpha and Total Recoverable Aluminum).
3. 20.6.4.900 NMAC requires monitoring of certain modified benchmark and impaired waters metals pollutants as dissolved species, which are not available for selection in NeT-MSGP. Currently, only total metals species may be assigned in NeT-MSGP.
4. Due to extended frozen conditions during the winter and a semi-arid climate, Triad will implement an alternative monitoring period of four (4) two-month monitoring quarters for benchmark values as identified below, in accordance with Part 6.1.6 of the 2015 MSGP. This alternate monitoring schedule



does not coincide with the default four (4) three-month quarters listed in Part 6.1.7 of the 2015 MSGP and NeT-MSGP does not allow input of an alternate monitoring schedule. Accordingly, annual impaired waters and Effluent Limitation Guideline monitoring will be conducted between April 1 and November 30 of each year.

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

These system limitations directly result in inaccurate pollutants, limits, monitoring periods and DMR due dates being populated in NetDMR.

Additionally, Part 6.1.7 of the 2015 MSGP states that monitoring requirements in the permit begin in the first full quarter following the date of discharge authorization. Per the alternative monitoring schedule above, Triad interprets monitoring requirements to begin April 1, 2019.

EPA Region 6 has recognized the challenges that the outgoing operator (LANS) has identified with NeT-MSGP related to compliance with Part 9.6.2 of the 2015 MSGP, Permit Conditions for the State of New Mexico, and has been instrumental in helping LANS to resolve these issues. Thus, Triad was granted a waiver to submit a paper NOI from Nasim Jahan (EPA Region 6) on 9/26/2018 (Enclosure 1). To facilitate complete and accurate information in Net-MSGP and NetDMR, Triad is submitting a paper NOI on EPA Form 3510-6 (Enclosure 2), and an additional table defining monitored outfall-specific Sector and impaired waters limit sets, monitoring periods and DMR due dates (Enclosure 3) for population in the NetDMR system. EPA previously implemented similar monitoring requirements for LANL's 2015 MSGP coverage as operated by LANS under NPDES ID NMR053195.

Your assistance is greatly appreciated as Triad is committed to maintaining compliance with the MSGP requirements. If you have any questions, please contact Terrill Lemke (505) 665-2397 or Leslie Dale (505) 606-2371.

Sincerely,



Michael W. Hazen  
Associate Laboratory Director  
Triad National Security, LLC

MWH:TWL:LJD:jdm

Enclosure(s): 1) EPA Region 6 Approval for Triad National Security, LLC to Submit a Paper NOI  
2) NOI for Stormwater Discharges Associated with Industrial Activity under the NPDES Multi-Sector General Permit

- 3) NetDMR Monitoring Requirements for Los Alamos National Laboratory, Operated by Triad National Security, LLC
- 4) Threatened and Endangered Species Protection Concurrence Letters from the United States Department of Interior, Fish and Wildlife Service

Copy: Nasim Jahan, EPA Region 6, (E-File),  
Helen Nguyen, EPA Region 6, (E-File),  
Sarah Holcomb, NMED/SWQB, (E-File),  
Karen E. Armijo, NA-LA, (E-File),  
Thomas E. Mason, Triad, (E-File),  
Kelly Beierschmitt, Triad, (E-File),  
Kevin T. Amery, Triad, (E-File),  
J. Barton Lounsbury, Triad, (E-File),  
G. Drew Fuller, Triad, (E-File),  
Timothy A. Dolan, LC-ESH, (E-File),  
William R. Mairson, ADESH, (E-File),  
Enrique Torres, EPC-DO, (E-File),  
Taunia S. Van Valkenburg, EPC-CP, (E-File),  
Terrill W. Lemke, EPC-CP (E-File),  
Holly L. Wheeler, EPC-CP (E-File),  
Leslie J. Dale, EPC-CP (E-File),  
[locatestream@lanl.gov](mailto:locatestream@lanl.gov) (E-File),  
[adesh-records@lanl.gov](mailto:adesh-records@lanl.gov) (E-File),  
[epc-correspondence@lanl.gov](mailto:epc-correspondence@lanl.gov) (E-File)

## **ENCLOSURE 1**

**EPA Region 6 Approval for Triad National Security, LLC  
to Submit a Paper NOI**

**EPC-DO: 18-358**

**LA-UR-18-29182**

**Date:** **OCT 01 2018**

**Dale, Leslie J**

---

**From:** Lemke, Terrill W  
**Sent:** Wednesday, September 26, 2018 4:16 PM  
**To:** Dolan, Timothy Aloysius; Dale, Leslie J; Wheeler, Holly Lynn  
**Subject:** FW: Request for LANL Paper MSGP NOI Waiver

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

FYI

Terrill Lemke, PE, CPESC, CISEC  
Environmental Compliance Programs  
Los Alamos National Laboratory  
Los Alamos, NM  
Office: 505-665-2397  
Cell: 505-699-0725

**From:** Jahan, Nasim <Jahan.Nasim@epa.gov>  
**Sent:** Wednesday, September 26, 2018 2:43 PM  
**To:** Lemke, Terrill W <tlemke@lanl.gov>  
**Cc:** Emily Gorman <emily@avanticorporation.com>  
**Subject:** RE: Request for LANL Paper MSGP NOI Waiver

Dear Mr. Terrill:

EPA, Region 6 is approving your request for paper submission as the facility is unable to submit the NOI online.. Please mail the hardcopies to the following address:

**For Regular U.S. Mail Delivery:**

Stormwater Notice Processing Center  
Mail Code 4203M, ATTN: 2015 MSGP Signature Agreement  
U.S. EPA  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

- **For Overnight/Express U.S. Mail Delivery:**

Stormwater Notice Processing Center  
William Jefferson Clinton East Building – Room 7420  
ATTN: 2015 MSGP Signature Agreement  
U.S. EPA  
1201 Constitution Avenue, NW  
Washington, DC 20004

Thank you,

*Nasim Jahan*

October 1 through November 30

These system limitations directly result in inaccurate pollutants, limits, monitoring periods and DMR due dates being populated in NetDMR.

EPA Region 6 has recognized the challenges that the outgoing operator (LANS) has identified with NeT-MSGP related to compliance with Part 9.6.2 of the 2015 MSGP, Permit Conditions for the State of New Mexico, and has been instrumental in helping LANS to resolve these issues. Therefore, per your verbal direction, we are requesting a waiver for Triad to submit a paper NOI in lieu of submitting an inaccurate and incomplete NOI in NeT-MSGP. Please advise at your earliest convenience if you concur with our submittal of a paper NOI, as we must submit by Oct 2.

We appreciate your assistance in helping us maintain compliance. If you have any questions, please contact me at (505) 665-2397.

Terrill

Terrill Lemke, PE, CPESC, CISEC  
Environmental Compliance Programs  
Los Alamos National Laboratory  
Los Alamos, NM  
Office: 505-665-2397  
Cell: 505-699-0725

## **ENCLOSURE 2**

**NOI for Stormwater Discharges Associated with Industrial  
Activity under the NPDES Multi-Sector General Permit**

**EPC-DO: 18-358**

**LA-UR-18-29182**

**Date:** **OCT 01 2018**

NPDES  
FORM  
3510-6



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460  
NOTICE OF INTENT (NOI) FOR STORMWATER DISCHARGES ASSOCIATED WITH  
INDUSTRIAL ACTIVITY UNDER THE NPDES MULTI-SECTOR GENERAL PERMIT

Form Approved.  
OMB No. 2040-0004

Submission of this Notice of Intent (NOI) constitutes notice that the operator identified in Section C of this form requests authorization to discharge pursuant to the NPDES Stormwater Multi-Sector General Permit (MSGP) permit number identified in Section B of this form. Submission of this NOI also constitutes notice that the operator identified in Section C of this form meets the eligibility conditions of Part 1.1 of the MSGP for the facility identified in Section D of this form. To obtain authorization, you must submit a complete and accurate NOI form. Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage. Refer to the instructions at the end of this form to complete your NOI.

**A. Approval to Use Paper NOI Form**

1. Have you been granted a waiver from electronic reporting from the EPA Regional Office\*? ☒ YES ☐ NO

If yes, check which waiver you have been granted, the name of the EPA Regional Office staff person who granted the waiver, and the date of approval:

- Waiver granted: ☐ The owner/operator's headquarters is physically located in a geographic area (i.e., ZIP code or census tract) that is identified as under-served for broadband Internet access in the most recent report from the Federal Communications Commission.
- ☒ The owner/operator has issues regarding available computer access or computer capability.

Name of EPA staff person that granted the waiver:

N a s i m J a h a n

Date approval obtained:

09 / 26 / 2018

\* Note: You are required to obtain approval from the applicable EPA Regional Office prior to using this paper NOI form. If you have not obtained a waiver, you must file this form electronically using the NPDES eReporting Tool (Net) at <http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-eNOI-System-for-EPAs-MultiSector-General-Permit.cfm>

**B. Permit Information**

NPDES ID (EPA Use Only):

| | | | |

1. Master Permit Number: NMR0500000 (see Appendix C of the MSGP for the list of eligible master permit numbers)

2. Are you a new discharger or a new source as defined in Appendix A? ☐ YES ☒ NO (If yes, skip to Part C of this form).

3. If you are not a new discharger or a new source, have stormwater discharges from your facility been covered previously under an NPDES permit?

☒ YES ☐ NO

If yes, provide the NPDES ID if you had coverage under EPA's 2008 MSGP or the NPDES ID if you had coverage under an EPA individual permit: Note: Facility had 2015 MSGP coverage under Permit ID NMR053195 with Los Alamos National Security, LLC as operator.

NMR05GB21

**C. Facility Operator Information**

1. Operator Information:

Operator Name:

T r i a d N a t i o n a l S e c u r i t y L L C

Mailing Address:

Street:

P O B o x 1 6 6 3 M S K 4 9 0

City:

L o s A l a m o s

State: NM

ZIP Code:

8 7 5 4 5 -

County or Similar Government Subdivision:

L o s A l a m o s

Phone:

5 0 5 - 6 6 5 - 2 3 9 7

Ext.:

| | |

E-mail:

t l e m k e @ l a n l . g o v

2. Operator Point of Contact Information:

First Name, Middle Initial, Last Name:

T e r r i l l W L e m k e

Title:

E n v i r o n m e n t a l M a n a g e r

3. NOI Preparer Information (Complete if NOI was prepared by someone other than the certifier):

First Name, Middle Initial, Last Name:

H o l l y L W h e e l e r

Organization:

T r i a d N a t i o n a l S e c u r i t y L L C

Phone:

5 0 5 - 6 6 7 - 1 3 1 2

Ext.:

| | |

E-mail:

h b e n s o n @ l a n l . g o v

**D. Facility Information**

1. Facility Name: **L o s A l a m o s N a t i o n a l L a b o r a t o r y**

2. Facility Address:  
Street/Location: **P O B o x 1 6 6 3**  
City: **L o s A l a m o s** State: **N M** ZIP Code: **8 7 5 4 5**  
County or Similar Government Subdivision: **L o s A l a m o s**

3. Latitude/Longitude for the facility:  
Latitude: **3 5 8 7 2 8**° N (decimal degrees) Longitude: **1 0 6 3 2 1 1**° W (decimal degrees)  
Latitude/Longitude Data Source: ☐ Map ☐ GPS ☒ Other  
If you used a USGS topographic map, what was the scale? \_\_\_\_\_

Horizontal Reference Datum: ☐ NAD 27 ☐ NAD 83 ☒ WGS 84

4. Is your facility located on Indian Country lands? ☐ YES ☒ NO  
If yes, provide the name of the Indian tribe associated with the area of Indian country (including name of Indian reservation, if applicable): \_\_\_\_\_

5. Are you requesting coverage under this NOI as a "federal operator" as defined in Appendix A? ☒ YES ☐ NO

6. What is the ownership type of the facility?  
☒ Federal Facility (U.S. Government) ☐ Privately Owned Facility ☐ Municipality ☐ County Government  
☐ Corporation ☐ State Government ☐ Tribal Government ☐ School District  
☐ District ☐ Mixed Ownership (e.g. Public/Private) ☐ Municipal or Water District

7. Estimated area of industrial activity at your facility exposed to stormwater: **60.50** (to the nearest quarter acre)

8. Sector-Specific Information **NOTE: Sectors do not apply to every outfall. Refer to Section E.3 for Outfall-specific Sector associations.**  
Identify the 4-digit Standard Industrial Classification (SIC) code or 2-letter Activity Code that best represents the products produced or services rendered for which your facility is primarily engaged, as defined in the MSGP, and the applicable sector and subsector of your primary industrial activity (See Appendix D):  
Primary SIC Code: **4 2 1 2** OR Primary Activity Code:   
Sector: **P** Subsector: **P 1**

Identify the applicable sector(s) and subsector(s) of any co-located industrial activity for which you are requesting permit coverage:  
Sector: **A** Subsector: **A 4** Sector: **D** Subsector: **D 1** Sector: **F** Subsector: **F 4**  
Sector: **N** Subsector: **N 2** Sector: **O** Subsector: **O 1** Sector: **A A** Subsector: **A A 1**  
**(Not NI)**

If you are a Sector S (Air Transportation) facility, do you anticipate using more than 100,000 gallons of pure glycol in glycol-based deicing fluids and/or 100 tons or more of urea on an average annual basis? ☐ YES ☐ NO

If you are a Sector G (Metal Mining) facility, do you have discharges from waste rock and overburden piles? ☐ YES ☐ NO

Check the type of ore you mine at your facility: ☐ Tungsten Ore ☐ Nickel Ore ☐ Aluminum Ore  
☐ Mercury Ore ☐ Iron Ore ☐ Platinum Ore ☐ Titanium Ore ☐ Vanadium Ore ☐ Molybdenum ☐ Uranium, Radium, and/or Vanadium Ore

9. Is your facility presently inactive and unstaffed?\* ☐ YES ☒ NO  
\* Note that if your facility becomes inactive and unstaffed during the permit term, you must submit an NOI modification to reflect the change.

**E. Discharge Information**

1. By indicating "Yes" below, I confirm that I understand that the MSGP only authorizes the allowable stormwater discharges in Part 1.1.2 and the allowable non-stormwater discharges listed in Part 1.1.3. Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the Stormwater Pollution Prevention Plan (SWPPP), during an inspection, etc. If any discharges requiring NPDES permit coverage other than the allowable stormwater and non-stormwater discharges listed in Parts 1.1.2 and 1.1.3 will be discharged, they must be covered under another NPDES permit. ☒ YES

2. Federal Effluent Limitation Guidelines  
Are you requesting permit coverage for any stormwater discharges subject to effluent limitation guidelines? ☒ YES ☐ NO



If yes, which effluent limitation guidelines apply to your stormwater discharges?

40 CFR Part/Subpart	Eligible Discharges	Affected MSGP Sector	New Source Date	Check if Applicable
Part 411, Subpart C	Runoff from material storage piles at cement manufacturing facilities	E	2/20/1974	<input type="checkbox"/>
Part 418 Subpart A	Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products [SIC 2874]	C	4/8/1974	<input type="checkbox"/>
Part 423	Coal pile runoff at steam electric generating facilities	O	11/19/1982 10/8/1974 <sup>1</sup>	<input type="checkbox"/>
Part 429, Subpart I	Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	A	1/26/1981	<input type="checkbox"/>
Part 436, Subpart B, C, or D	Mine dewatering discharges at crushed stone mines, construction sand and gravel mines, or industrial sand mines	J	N/A	<input type="checkbox"/>
Part 443, Subpart A	Runoff from asphalt emulsion facilities	D	7/28/1975	<input checked="" type="checkbox"/>
Part 445, Subparts A & B	Runoff from hazardous waste and non-hazardous waste landfills	K, L	2/2/2000	<input type="checkbox"/>
Part 449	Runoff containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures	S	6/15/2012	<input type="checkbox"/>

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

3. Receiving Waters Information: (Attach a separate list if necessary) **Note: Refer to Enclosure 3 for NetDMR Outfall-specific Sector and Impaired Waters Limit Sets.**

List all of the stormwater outfalls from your facility. Each outfall must be identified by a unique 3-digit ID (e.g., 001, 002). Also provide the latitude and longitude in degrees decimal for each outfall.		For each outfall, provide the following receiving water information:		
		Provide the name of the first water of the U.S. that receives stormwater directly from the outfall and/or from the MS4 that the outfall discharges to:	If the receiving water is impaired (on the CWA 303(d) list), list the pollutants that are causing the impairment:	If a TMDL been completed for this receiving waterbody, providing the following information:
Outfall ID	002 (Sector AA, Subsector AA1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A  Pollutant(s) for which there is a TMDL: N/A
Latitude	35.875797			
Longitude	-106.327580			
Outfall ID	005 (Sector O, Subsector O1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A  Pollutant(s) for which there is a TMDL: N/A
Latitude	35.873919			
Longitude	-106.320746			

If substantially identical to other outfall, list identical outfall ID: \_\_\_\_\_

Outfall ID	006 (Sector O, Subsector O1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.874011			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.319858			
If substantially identical to other outfall, list identical outfall ID: 005				
Outfall ID	009 (Sector O, Subsector O1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.874843			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.319412			
If substantially identical to other outfall, list identical outfall ID:				
Outfall ID	007 (Sector O, Subsector O1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.874014			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.319203			
If substantially identical to other outfall, list identical outfall ID: 009				
Outfall ID	008 (Sector O, Subsector O1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.874617			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.318925			
If substantially identical to other outfall, list identical outfall ID: 009				

Outfall ID	010 (Sector O, Subsector O1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.875402			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.320301			
If substantially identical to other outfall, list identical outfall ID: 009				
Outfall ID	012 (Sector O, Subsector O1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.875532			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.320884			
If substantially identical to other outfall, list identical outfall ID:				
Outfall ID	011 (Sector O, Subsector O1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.875563			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.320744			
If substantially identical to other outfall, list identical outfall ID: 012				
Outfall ID	017 (Sectors AA, F Subsectors AA1, F4)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.872599			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.317066			
If substantially identical to other outfall, list identical outfall ID:				

Outfall ID	013 (Sectors AA, F Subsectors AA1, F4)	Mortandad Canyon (Within LANL)	51931 Adjusted Gross Alpha; 01040 Copper, dissolved [as Cu]; 71900 Mercury, total [as Hg]; 39516 Polychlorinated biphenyls [PCBs]	TMDL Name and ID: N/A
Latitude	35.870797			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.317867			
If substantially identical to other outfall, list identical outfall ID: 017				
Outfall ID	014 (Sectors AA, F Subsectors AA1, F4)	Mortandad Canyon (Within LANL)	51931 Adjusted Gross Alpha; 01040 Copper, dissolved [as Cu]; 71900 Mercury, total [as Hg]; 39516 Polychlorinated biphenyls [PCBs]	TMDL Name and ID: N/A
Latitude	35.870890			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.317393			
If substantially identical to other outfall, list identical outfall ID: 017				
Outfall ID	015 (Sectors AA, F Subsectors AA1, F4)	Mortandad Canyon (Within LANL)	51931 Adjusted Gross Alpha; 01040 Copper, dissolved [as Cu]; 71900 Mercury, total [as Hg]; 39516 Polychlorinated biphenyls [PCBs]	TMDL Name and ID: N/A
Latitude	35.871389			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.316397			
If substantially identical to other outfall, list identical outfall ID: 017				
Outfall ID	016 (Sectors AA, F Subsectors AA1, F4)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.872447			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.316721			
If substantially identical to other outfall, list identical outfall ID: 017				

Outfall ID	019 (Sectors AA, F Subsectors AA1, F4)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.872682			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.318467			
If substantially identical to other outfall, list identical outfall ID: 017				
Outfall ID	020 (Sectors AA, F Subsectors AA1, F4)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.872240			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.316340			
If substantially identical to other outfall, list identical outfall ID:				
Outfall ID	022 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.872661			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.313691			
If substantially identical to other outfall, list identical outfall ID:				
Outfall ID	021 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.872514			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.313562			
If substantially identical to other outfall, list identical outfall ID: 022				

Outfall ID	023 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.873193			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.313116			
If substantially identical to other outfall, list identical outfall ID: 022				
Outfall ID	024 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.873046			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.315069			
If substantially identical to other outfall, list identical outfall ID: 022				
Outfall ID	025 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.872928			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.315400			
If substantially identical to other outfall, list identical outfall ID: 022				
Outfall ID	026 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.872114			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.313105			
If substantially identical to other outfall, list identical outfall ID: _____				



Outfall ID	027 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.872401			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.313391			
If substantially identical to other outfall, list identical outfall ID: 026				
Outfall ID	028 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.872505			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.313542			
If substantially identical to other outfall, list identical outfall ID: 026				
Outfall ID	029 (Sector N, Subsector N2)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.873969			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.313281			
If substantially identical to other outfall, list identical outfall ID: _____				
Outfall ID	031 (Sector P, Subsector P1)	Mortandad Canyon (within LANL)	51931 Adjusted Gross Alpha; 01040 Copper, dissolved [as Cu]; 71900 Mercury, total [as Hg]; 39516 Polychlorinated biphenyls [PCBs]	TMDL Name and ID: N/A
Latitude	35.869227			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.305685			
If substantially identical to other outfall, list identical outfall ID: _____				

Outfall ID	030 (Sector P, Subsector P1)	Mortandad Canyon (within LANL)	51931 Adjusted Gross Alpha; 01040 Copper, dissolved [as Cu]; 71900 Mercury, total [as Hg]; 39516 Polychlorinated biphenyls [PCBs]	TMDL Name and ID: N/A
Latitude	35.869325			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.306926			
If substantially identical to other outfall, list identical outfall ID: 031				
Outfall ID	032 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.870741			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.306812			
If substantially identical to other outfall, list identical outfall ID:				
Outfall ID	033 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.870712			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.306443			
If substantially identical to other outfall, list identical outfall ID: 032				
Outfall ID	034 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.870603			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.306055			
If substantially identical to other outfall, list identical outfall ID: 032				



Outfall ID	035 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.870474			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.305432			
If substantially identical to other outfall, list identical outfall ID: 032				
Outfall ID	036 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.867825			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.293388			
If substantially identical to other outfall, list identical outfall ID: _____				
Outfall ID	037 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.867859			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.292992			
If substantially identical to other outfall, list identical outfall ID: 036				
Outfall ID	039 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.867826			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.291726			
If substantially identical to other outfall, list identical outfall ID: _____				

Outfall ID	038 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.867855			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.292211			
If substantially identical to other outfall, list identical outfall ID: 039				
Outfall ID	040 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.867839			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.291955			
If substantially identical to other outfall, list identical outfall ID: 039				
Outfall ID	042 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.867047			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.289163			
If substantially identical to other outfall, list identical outfall ID: _____				
Outfall ID	041 (Sector P, Subsector P1)	Mortandad Canyon (within LANL)	51931 Adjusted Gross Alpha; 01040 Copper, dissolved [as Cu]; 71900 Mercury, total [as Hg]; 39516 Polychlorinated biphenyls [PCBs]	TMDL Name and ID: N/A
Latitude	35.866377			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.291397			
If substantially identical to other outfall, list identical outfall ID: 042				

Outfall ID	043 (Sector P, Subsector P1)	Mortandad Canyon (within LANL)	51931 Adjusted Gross Alpha; 01040 Copper, dissolved [as Cu]; 71900 Mercury, total [as Hg]; 39516 Polychlorinated biphenyls [PCBs]	TMDL Name and ID: N/A
Latitude	35.866084			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.290165			
If substantially identical to other outfall, list identical outfall ID: _____				
Outfall ID	074 (Sector A, Subsector A4)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.875034			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.327328			
If substantially identical to other outfall, list identical outfall ID: _____				
Outfall ID	073 (Sector A, Subsector A4)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.874819			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.324283			
If substantially identical to other outfall, list identical outfall ID: 074 _____				
Outfall ID	075 (Sector P, Subsector P1)	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	01104 Aluminum, total recoverable [as Al]; 01040 Copper, dissolved [as Cu]; 39516 Polychlorinated biphenyls [PCBs]; 00010 Temperature, water deg. centigrade	TMDL Name and ID: N/A
Latitude	35.871154			Pollutant(s) for which there is a TMDL: N/A
Longitude	-106.312940			
If substantially identical to other outfall, list identical outfall ID: _____				

4. Provide the following information about your outfall latitude longitude:

Latitude/Longitude Data Source: ☐ Map ☒ GPS ☐ Other

If you used a USGS topographic map, what was the scale? \_\_\_\_\_

Horizontal Reference Datum: ☐ NAD 27 ☒ NAD 83 ☐ WGS 84

5. Does your facility discharge into a Municipal Separate Storm Sewer System (MS4)? ☐ YES ☒ NO

If yes, provide the name of the MS4 operator: N/A

6. Check if you discharge to any of the waters of the U.S. that are designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water) or as a Tier 3 water (Outstanding National Resource Water)? (See Appendix L).

☐ Tier 2/2.5. Provide the name(s) of receiving water(s): \_\_\_\_\_

☐ Tier 3 (Outstanding National Resource Waters)\*

\* **Note: You are ineligible for coverage if you are a new discharger or new source to waters designated as Tier 3 (outstanding national resource waters) for antidegradation purposes under 40 CFR 131.13(a)(3).**

7. If you are subject to benchmark monitoring requirements for a hardness-dependent metal, what is the hardness of your receiving water(s) (see Appendix J)? 82 (mg/L)

8. If you are subject to benchmark monitoring requirements for a hardness-dependent metal, does your facility discharge into any saltwater receiving waters? ☐ YES ☒ NO

9. Does your facility discharge to a federal CERCLA site listed in Appendix P? ☐ YES ☒ NO

If yes, did you notify the EPA Regional Office in advance of filing your NOI, and did the EPA Regional Office determine that you are eligible for permit coverage pursuant to Part 1.1.4.10\*? ☐ YES ☐ NO

\* **Note: If you discharge to a federal CERCLA site listed in Appendix P, you are ineligible for coverage under this permit unless you notify the EPA Regional Office in advance and the EPA Regional Office determines you are eligible coverage under this permit. In determining your eligibility for coverage under this Part, the EPA Regional Office may evaluate whether you have included adequate controls and/or procedures to ensure that your discharges will not lead to recontamination of aquatic media at the CERCLA Site such that it will to cause or contribute to an exceedance of a water quality standard.**

#### F. Stormwater Pollution Prevention Plan (SWPPP) Information

1. Has the SWPPP been prepared in advance of filing this NOI, as required? ☒ YES ☐ NO

2. SWPPP Contact Information:

First Name, Middle Initial, Last Name: Holly L Wheeler

Professional Title: Environmental Professional

Phone: 505-667-1312 Ext.

E-mail: hbenson@lanl.gov

3. SWPPP Availability:

Your current SWPPP or certain information from your SWPPP must be made available through one of the following two options. Select one of the options and provide the required information\*:

\* **Note: You are not required to post any confidential business information (CBI) or restricted information (as defined in Appendix A) (such information may be redacted), but you must clearly identify those portions of the SWPPP that are being withheld from public access.**

☒ **Option 1:** Maintain a current copy of your SWPPP on an Internet page (Universal Resource Locator or URL).

Provide the web address URL: eprr.lanl.gov

☐ **Option 2:** Provide the following information from your SWPPP:

A. Describe your onsite industrial activities exposed to stormwater (e.g., material storage; equipment fueling, maintenance, and cleaning; cutting steel beams), and potential spill and leak areas:

B. List the pollutant(s) or pollutant constituent(s) associated with each industrial activity exposed to stormwater that could be discharged in stormwater and any authorized non-stormwater discharges listed in Part 1.1.3:

C. Describe the control measures you will employ to comply with the non-numeric technology-based effluent limits required in Part 2.1.2 and Part 8, and any other measures taken to comply with the requirements in Part 2.2 Water Quality-Based Effluent Limitations (see Part 5.2.4):

D. Provide a schedule for good housekeeping and maintenance (see Part 5.2.5.1) and a schedule for all inspections required in Part 4 (see Part 5.2.5.2):

#### G. Endangered Species Protection

1. Using the instructions in Appendix E of the MSGP, under which endangered species criterion listed in Part 1.1.4.5 are you eligible for coverage under this permit (only check 1 box)?\*

☐ A ☐ B ☐ C ☒ D ☐ E

\* **Note: After you submit your NOI and before your NOI is authorized, EPA may notify you if any additional controls are necessary to ensure your discharges have no likely adverse affects on listed species and critical habitat.**

2. Provide a brief summary of the basis for the criterion selected in Appendix E (e.g., communication with U.S. Fish and Wildlife Service or National Marine Fisheries Service to determine no species in action area; implementation of controls approved by EPA and the Services):

Direct consultation with the U.S. Fish and Wildlife Service and corresponding development and implementation of a facility-specific Habitat Management Plan.

3. If you select criterion B, provide the NPDES ID from the other operator's NOI authorized under this permit:

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4. If you select criterion C, you must answer the following questions:

a. What federally-listed species or designated critical habitat are located in your "action area":

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b. Using the Appendix E worksheet, check which of the following is applicable to your facility and answer any corresponding questions:

☐ I submitted my completed *Criterion C Eligibility Form* to EPA at least 30 days prior to submitting this NOI and agree to implement any additional measures that were determined by EPA to be necessary to ensure that my discharges and/or discharge-related activities will not have likely adverse affects on listed species and critical habitat.

Date your *Criterion C Eligibility Form* was sent to EPA: 

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Describe any EPA-approved measures you will implement to ensure no likely adverse affects on listed species and critical habitat:

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☐ I submitted my completed *Criterion C Eligibility Form* to EPA at least 30 days prior to submitting this NOI and have not been notified of any additional measures necessary to ensure no likely adverse affects on listed species and critical habitat.

Date your *Criterion C Eligibility Form* was sent to EPA: 

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5. If you select criterion D or E, you must attach copies of any letters or other communications with the U.S. Fish and Wildlife Service or National Marine Fisheries Service.

#### H. Historic Preservation

1. If your facility is not located on Indian country lands, is your facility located on a property of religious or cultural significance to an Indian tribe?

☒ YES ☐ NO

If yes, provide the name of the Indian tribe associated with the property: San Ildefonso Pueblo

2. Using the instructions in Appendix F of the MSGP, under which historic properties preservation criterion listed in Part 1.1.4.6 are you eligible for coverage under this permit (only check 1 box)?

☐ A ☒ B ☐ C ☐ D

#### I. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly 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.

First Name, Middle Initial, Last Name: Michael W Hazen

Title: Associate Laboratory Director

Signature: 

Date: 10 / 01 / 2018

E-mail: mhzhen@lanl.gov

## **ENCLOSURE 3**

**NetDMR Monitoring Requirements for Los Alamos National  
Laboratory, Operated by Triad National Security, LLC**

**EPC-DO: 18-358**

**LA-UR-18-29182**

**Date:** **OCT 01 2018**



Permit ID	Facility	Permitted Feature	Sector(s)	Subsector	Proposed Consolidated Discharge # (Limit Set)	Discharge Description	ELG, Modified Benchmark, and Impaired Waters Limits per MSGP Section 9.6.2 and the NM Water Quality Standards (20.6.4.900 NMAC [New Mexico Administrative Code])										
							Parameter Code	Parameter Name	Symbol	Quality Value	Limit Type	Units	Freq. of Analysis	Smpl. Type	Monitoring Period Start Date	Monitoring Period End Date	DMR Due Date
TBD	Los Alamos National Laboratory	002	AA	AA1	002-11	11- Fabricated Metal Products, except Coating	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/60	Gr	4/1/2019	5/31/2019	7/31/2019
TBD	Los Alamos National Laboratory	002	AA	AA1	002-11	11- Fabricated Metal Products, except Coating	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	4/1/2019	5/31/2019	7/31/2019
TBD	Los Alamos National Laboratory	002	AA	AA1	002-11	11- Fabricated Metal Products, except Coating	51450 1 0	Nitrite Plus Nitrate Total	<=	0.68	Maximum	mg/L	1/60	Gr	4/1/2019	5/31/2019	7/31/2019
TBD	Los Alamos National Laboratory	002	AA	AA1	002-11	11- Fabricated Metal Products, except Coating	01090 1 0	Zinc, dissolved [as Zn]	<=	99	Maximum	ug/L	1/60	Gr	4/1/2019	5/31/2019	7/31/2019
TBD	Los Alamos National Laboratory	002	AA	AA1	002-11	11- Fabricated Metal Products, except Coating	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/60	Gr	6/1/2019	7/31/2019	9/30/2019
TBD	Los Alamos National Laboratory	002	AA	AA1	002-11	11- Fabricated Metal Products, except Coating	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	6/1/2019	7/31/2019	9/30/2019
TBD	Los Alamos National Laboratory	002	AA	AA1	002-11	11- Fabricated Metal Products, except Coating	51450 1 0	Nitrite Plus Nitrate Total	<=	0.68	Maximum	mg/L	1/60	Gr	6/1/2019	7/31/2019	9/30/2019
TBD	Los Alamos National Laboratory	002	AA	AA1	002-11	11- Fabricated Metal Products, except Coating	01090 1 0	Zinc, dissolved [as Zn]	<=	99	Maximum	ug/L	1/60	Gr	6/1/2019	7/31/2019	9/30/2019
TBD	Los Alamos National Laboratory	002	AA	AA1	002-11	11- Fabricated Metal Products, except Coating	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/60	Gr	8/1/2019	9/30/2019	11/30/2019
TBD	Los Alamos National Laboratory	002	AA	AA1	002-11	11- Fabricated Metal Products, except Coating	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	8/1/2019	9/30/2019	11/30/2019
TBD	Los Alamos National Laboratory	002	AA	AA1	002-11	11- Fabricated Metal Products, except Coating	51450 1 0	Nitrite Plus Nitrate Total	<=	0.68	Maximum	mg/L	1/60	Gr	8/1/2019	9/30/2019	11/30/2019
TBD	Los Alamos National Laboratory	002	AA	AA1	002-11	11- Fabricated Metal Products, except Coating	01090 1 0	Zinc, dissolved [as Zn]	<=	99	Maximum	ug/L	1/60	Gr	8/1/2019	9/30/2019	11/30/2019
TBD	Los Alamos National Laboratory	002	AA	AA1	002-11	11- Fabricated Metal Products, except Coating	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/60	Gr	10/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	002	AA	AA1	002-11	11- Fabricated Metal Products, except Coating	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	10/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	002	AA	AA1	002-11	11- Fabricated Metal Products, except Coating	51450 1 0	Nitrite Plus Nitrate Total	<=	0.68	Maximum	mg/L	1/60	Gr	10/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	002	AA	AA1	002-IW	IW - Impaired Water	01090 1 0	Zinc, dissolved [as Zn]	<=	99	Maximum	ug/L	1/60	Gr	10/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	002	AA	AA1	002-IW	IW - Impaired Water	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	002	AA	AA1	002-IW	IW - Impaired Water	01040 1 0	Copper, dissolved [as Cu]	<=	7	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	002	AA	AA1	002-IW	IW - Impaired Water	39516 1 0	Polychlorinated biphenyls [PCBs]	<=	0.2	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	002	AA	AA1	002-IW	IW - Impaired Water	00010 1 0	Temperature, water deg. centigrade	<=	24	Maximum	deg C	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	005	O	O1	005-O1	O1 - Steam Electric Generating Facilities	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	4/1/2019	5/31/2019	7/31/2019
TBD	Los Alamos National Laboratory	005	O	O1	005-O1	O1 - Steam Electric Generating Facilities	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	6/1/2019	7/31/2019	9/30/2019
TBD	Los Alamos National Laboratory	005	O	O1	005-O1	O1 - Steam Electric Generating Facilities	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	8/1/2019	9/30/2019	11/30/2019
TBD	Los Alamos National Laboratory	005	O	O1	005-O1	O1 - Steam Electric Generating Facilities	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	10/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	005	O	O1	005-IW	IW - Impaired Water	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	005	O	O1	005-IW	IW - Impaired Water	01040 1 0	Copper, dissolved [as Cu]	<=	7	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	005	O	O1	005-IW	IW - Impaired Water	39516 1 0	Polychlorinated biphenyls [PCBs]	<=	0.2	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	005	O	O1	005-IW	IW - Impaired Water	00010 1 0	Temperature, water deg. centigrade	<=	24	Maximum	deg C	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	009	O	O1	009-O1	O1 - Steam Electric Generating Facilities	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	4/1/2019	5/31/2019	7/31/2019
TBD	Los Alamos National Laboratory	009	O	O1	009-O1	O1 - Steam Electric Generating Facilities	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	6/1/2019	7/31/2019	9/30/2019
TBD	Los Alamos National Laboratory	009	O	O1	009-O1	O1 - Steam Electric Generating Facilities	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	8/1/2019	9/30/2019	11/30/2019
TBD	Los Alamos National Laboratory	009	O	O1	009-O1	O1 - Steam Electric Generating Facilities	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	10/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	009	O	O1	009-IW	IW - Impaired Water	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	009	O	O1	009-IW	IW - Impaired Water	01040 1 0	Copper, dissolved [as Cu]	<=	7	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	009	O	O1	009-IW	IW - Impaired Water	39516 1 0	Polychlorinated biphenyls [PCBs]	<=	0.2	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	009	O	O1	009-IW	IW - Impaired Water	00010 1 0	Temperature, water deg. centigrade	<=	24	Maximum	deg C	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	012	O	O1	012-O1	O1 - Steam Electric Generating Facilities	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	4/1/2019	5/31/2019	7/31/2019
TBD	Los Alamos National Laboratory	012	O	O1	012-O1	O1 - Steam Electric Generating Facilities	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	6/1/2019	7/31/2019	9/30/2019
TBD	Los Alamos National Laboratory	012	O	O1	012-O1	O1 - Steam Electric Generating Facilities	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	8/1/2019	9/30/2019	11/30/2019
TBD	Los Alamos National Laboratory	012	O	O1	012-O1	O1 - Steam Electric Generating Facilities	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	10/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	012	O	O1	012-IW	IW - Impaired Water	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	012	O	O1	012-IW	IW - Impaired Water	01040 1 0	Copper, dissolved [as Cu]	<=	7	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	012	O	O1	012-IW	IW - Impaired Water	39516 1 0	Polychlorinated biphenyls [PCBs]	<=	0.2	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	012	O	O1	012-IW	IW - Impaired Water	00010 1 0	Temperature, water deg. centigrade	<=	24	Maximum	deg C	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/60	Gr	4/1/2019	5/31/2019	7/31/2019
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	01040 1 0	Copper, dissolved [as Cu]	<=	7	Maximum	ug/L	1/60	Gr	4/1/2019	5/31/2019	7/31/2019
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	4/1/2019	5/31/2019	7/31/2019
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	51450 1 0	Nitrite Plus Nitrate Total	<=	0.68	Maximum	mg/L	1/60	Gr	4/1/2019	5/31/2019	7/31/2019
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	01090 1 0	Zinc, dissolved [as Zn]	<=	99	Maximum	ug/L	1/60	Gr	4/1/2019	5/31/2019	7/31/2019



Permit ID	Facility	Permitted Feature	Sector(s)	Subsector	Proposed Consolidated Discharge # (Limit Set)	Discharge Description	ELG, Modified Benchmark, and Impaired Waters Limits per MSGP Section 9.6.2 and the NM Water Quality Standards (20.6.4.900 NMAC [New Mexico Administrative Code])										
							Parameter Code	Parameter Name	Symbol	Quality Value	Limit Type	Units	Freq. of Analysis	Smpl. Type	Monitoring Period Start Date	Monitoring Period End Date	DMR Due Date
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/60	Gr	6/1/2019	7/31/2019	9/30/2019
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	01040 1 0	Copper, dissolved [as Cu]	<=	7	Maximum	ug/L	1/60	Gr	6/1/2019	7/31/2019	9/30/2019
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	6/1/2019	7/31/2019	9/30/2019
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	51450 1 0	Nitrite Plus Nitrate Total	<=	0.68	Maximum	mg/L	1/60	Gr	6/1/2019	7/31/2019	9/30/2019
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	01090 1 0	Zinc, dissolved [as Zn]	<=	99	Maximum	ug/L	1/60	Gr	6/1/2019	7/31/2019	9/30/2019
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/60	Gr	8/1/2019	9/30/2019	11/30/2019
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	01040 1 0	Copper, dissolved [as Cu]	<=	7	Maximum	ug/L	1/60	Gr	8/1/2019	9/30/2019	11/30/2019
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	8/1/2019	9/30/2019	11/30/2019
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	51450 1 0	Nitrite Plus Nitrate Total	<=	0.68	Maximum	mg/L	1/60	Gr	8/1/2019	9/30/2019	11/30/2019
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	01090 1 0	Zinc, dissolved [as Zn]	<=	99	Maximum	ug/L	1/60	Gr	8/1/2019	9/30/2019	11/30/2019
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/60	Gr	10/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	01040 1 0	Copper, dissolved [as Cu]	<=	7	Maximum	ug/L	1/60	Gr	10/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	01045 1 0	Iron, total [as Fe]	<=	1000	Maximum	ug/L	1/60	Gr	10/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	51450 1 0	Nitrite Plus Nitrate Total	<=	0.68	Maximum	mg/L	1/60	Gr	10/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-11	11- Fabricated Metal Products, except Coating	01090 1 0	Zinc, dissolved [as Zn]	<=	99	Maximum	ug/L	1/60	Gr	10/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-IW	IW - Impaired Water	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-IW	IW - Impaired Water	01040 1 0	Copper, dissolved [as Cu]	<=	7	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-IW	IW - Impaired Water	39516 1 0	Polychlorinated biphenyls [PCBs]	<=	0.2	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	017	AA, F	AA1, F4	017-IW	IW - Impaired Water	00010 1 0	Temperature, water deg. centigrade	<=	24	Maximum	deg C	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	020	AA, F	AA1, F4	020-11	11- Fabricated Metal Products, except Coating	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/60	Gr	4/1/2019	5/31/2019	7/31/2019
TBD	Los Alamos National Laboratory	020	AA, F	AA1, F4	020-11	11- Fabricated Metal Products, except Coating	01040 1 0	Copper, dissolved [as Cu]	<=	7	Maximum	ug/L</					

Permit ID	Facility	Permitted Feature	Sector(s)	Subsector	Proposed Consolidated Discharge # (Limit Set)	Discharge Description	ELG, Modified Benchmark, and Impaired Waters Limits per MSGP Section 9.6.2 and the NM Water Quality Standards (20.6.4.900 NMAC [New Mexico Administrative Code])										
							Parameter Code	Parameter Name	Symbol	Quality Value	Limit Type	Units	Freq. of Analysis	Smpl. Type	Monitoring Period Start Date	Monitoring Period End Date	DMR Due Date
TBD	Los Alamos National Laboratory	026	P	P1	026-IW	IW - Impaired Water	00010 1 0	Temperature, water deg. centigrade	<=	24	Maximum	deg C	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	029	N	N2	029-IW	IW - Impaired Water	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	029	N	N2	029-IW	IW - Impaired Water	01040 1 0	Copper, dissolved [as Cu]	<=	7	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	029	N	N2	029-IW	IW - Impaired Water	39516 1 0	Polychlorinated biphenyls [PCBs]	<=	0.2	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	029	N	N2	029-IW	IW - Impaired Water	00010 1 0	Temperature, water deg. centigrade	<=	24	Maximum	deg C	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	031	P	P1	031-IW	IW - Impaired Water	51931 1 0	Adjusted Gross Alpha	<=	15	Maximum	pCi/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	031	P	P1	031-IW	IW - Impaired Water	01040 1 0	Copper, dissolved [as Cu]	<=	11	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	031	P	P1	031-IW	IW - Impaired Water	71900 1 0	Mercury, total [as Hg]	<=	0.77	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	031	P	P1	031-IW	IW - Impaired Water	39516 1 0	Polychlorinated biphenyls [PCBs]	<=	0.2	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	032	P	P1	032-IW	IW - Impaired Water	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	032	P	P1	032-IW	IW - Impaired Water	01040 1 0	Copper, dissolved [as Cu]	<=	7	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	032	P	P1	032-IW	IW - Impaired Water	39516 1 0	Polychlorinated biphenyls [PCBs]	<=	0.2	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	032	P	P1	032-IW	IW - Impaired Water	00010 1 0	Temperature, water deg. centigrade	<=	24	Maximum	deg C	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	036	P	P1	036-IW	IW - Impaired Water	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	036	P	P1	036-IW	IW - Impaired Water	01040 1 0	Copper, dissolved [as Cu]	<=	7	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	036	P	P1	036-IW	IW - Impaired Water	39516 1 0	Polychlorinated biphenyls [PCBs]	<=	0.2	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	036	P	P1	036-IW	IW - Impaired Water	00010 1 0	Temperature, water deg. centigrade	<=	24	Maximum	deg C	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	039	P	P1	039-IW	IW - Impaired Water	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	039	P	P1	039-IW	IW - Impaired Water	01040 1 0	Copper, dissolved [as Cu]	<=	7	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	039	P	P1	039-IW	IW - Impaired Water	39516 1 0	Polychlorinated biphenyls [PCBs]	<=	0.2	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	039	P	P1	039-IW	IW - Impaired Water	00010 1 0	Temperature, water deg. centigrade	<=	24	Maximum	deg C	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	042	P	P1	042-IW	IW - Impaired Water	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	042	P	P1	042-IW	IW - Impaired Water	01040 1 0	Copper, dissolved [as Cu]	<=	7	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	042	P	P1	042-IW	IW - Impaired Water	39516 1 0	Polychlorinated biphenyls [PCBs]	<=	0.2	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	042	P	P1	042-IW	IW - Impaired Water	00010 1 0	Temperature, water deg. centigrade	<=	24	Maximum	deg C	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	043	D	D1	043-D1	D1 - Asphalt Paving and Roofing Materials and Lubricant Manufacturing	00530 1 0	Solids, total suspended	<=	100	Maximum	mg/L	1/60	Gr	4/1/2019	5/31/2019	7/31/2019
TBD	Los Alamos National Laboratory	043	D	D1	043-D1	D1 - Asphalt Paving and Roofing Materials and Lubricant Manufacturing	00530 1 0	Solids, total suspended	<=	100	Maximum	mg/L	1/60	Gr	6/1/2019	7/31/2019	9/30/2019
TBD	Los Alamos National Laboratory	043	D	D1	043-D1	D1 - Asphalt Paving and Roofing Materials and Lubricant Manufacturing	00530 1 0	Solids, total suspended	<=	100	Maximum	mg/L	1/60	Gr	8/1/2019	9/30/2019	11/30/2019
TBD	Los Alamos National Laboratory	043	D	D1	043-D1	D1 - Asphalt Paving and Roofing Materials and Lubricant Manufacturing	00530 1 0	Solids, total suspended	<=	100	Maximum	mg/L	1/60	Gr	10/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	043	D	D1	043-1D	1D - Asphalt Paving and Roofing Materials and Lubricant Manufacturing	00556 1 0	Oil & Grease	<=	10	30-Day Average	mg/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	043	D	D1	043-1D	1D - Asphalt Paving and Roofing Materials and Lubricant Manufacturing	00556 1 0	Oil & Grease	<=	15	Daily Maximum	mg/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	043	D	D1	043-1D	1D - Asphalt Paving and Roofing Materials and Lubricant Manufacturing	00400 1 0	pH	>=	6	Minimum	SU	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	043	D	D1	043-1D	1D - Asphalt Paving and Roofing Materials and Lubricant Manufacturing	00400 1 0	pH	<=	9	Maximum	SU	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	043	D	D1	043-1D	1D - Asphalt Paving and Roofing Materials and Lubricant Manufacturing	00530 1 0	Solids, total suspended	<=	15	30-Day Average	mg/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	043	D	D1	043-1D	1D - Asphalt Paving and Roofing Materials and Lubricant Manufacturing	00530 1 0	Solids, total suspended	<=	23	Daily Maximum	mg/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	043	D	D1	043-IW	IW - Impaired Water	51931 1 0	Adjusted Gross Alpha	<=	15	Maximum	pCi/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020

							ELG, Modified Benchmark, and Impaired Waters Limits per MSGP Section 9.6.2 and the NM Water Quality Standards (20.6.4.900 NMAC [New Mexico Administrative Code])										
Permit ID	Facility	Permitted Feature	Sector(s)	Subsector	Proposed Consolidated Discharge # (Limit Set)	Discharge Description	Parameter Code	Parameter Name	Symbol	Quality Value	Limit Type	Units	Freq. of Analysis	Smpl. Type	Monitoring Period Start Date	Monitoring Period End Date	DMR Due Date
TBD	Los Alamos National Laboratory	043	D	D1	043-IW	IW - Impaired Water	01040 1 0	Copper, dissolved [as Cu]	<=	11	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	043	D	D1	043-IW	IW - Impaired Water	39516 1 0	Polychlorinated biphenyls [PCBs]	<=	0.2	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	043	D	D1	043-IW	IW - Impaired Water	71900 1 0	Mercury, total [as Hg]	<=	0.77	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	074	A	A4	074-A4	A4 - Hardwood Dimension and Flooring Mills	81017 1 0	Chemical Oxygen Demand [COD]	<=	120	Maximum	mg/L	1/60	Gr	4/1/2019	5/31/2019	7/31/2019
TBD	Los Alamos National Laboratory	074	A	A4	074-A4	A4 - Hardwood Dimension and Flooring Mills	00530 1 0	Solids, total suspended	<=	100	Maximum	mg/L	1/60	Gr	4/1/2019	5/31/2019	7/31/2019
TBD	Los Alamos National Laboratory	074	A	A4	074-A4	A4 - Hardwood Dimension and Flooring Mills	81017 1 0	Chemical Oxygen Demand [COD]	<=	120	Maximum	mg/L	1/60	Gr	6/1/2019	7/31/2019	9/30/2019
TBD	Los Alamos National Laboratory	074	A	A4	074-A4	A4 - Hardwood Dimension and Flooring Mills	00530 1 0	Solids, total suspended	<=	100	Maximum	mg/L	1/60	Gr	6/1/2019	7/31/2019	9/30/2019
TBD	Los Alamos National Laboratory	074	A	A4	074-A4	A4 - Hardwood Dimension and Flooring Mills	81017 1 0	Chemical Oxygen Demand [COD]	<=	120	Maximum	mg/L	1/60	Gr	8/1/2019	9/30/2019	11/30/2019
TBD	Los Alamos National Laboratory	074	A	A4	074-A4	A4 - Hardwood Dimension and Flooring Mills	00530 1 0	Solids, total suspended	<=	100	Maximum	mg/L	1/60	Gr	8/1/2019	9/30/2019	11/30/2019
TBD	Los Alamos National Laboratory	074	A	A4	074-A4	A4 - Hardwood Dimension and Flooring Mills	81017 1 0	Chemical Oxygen Demand [COD]	<=	120	Maximum	mg/L	1/60	Gr	10/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	074	A	A4	074-A4	A4 - Hardwood Dimension and Flooring Mills	00530 1 0	Solids, total suspended	<=	100	Maximum	mg/L	1/60	Gr	10/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	074	A	A4	074-IW	IW - Impaired Water	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	074	A	A4	074-IW	IW - Impaired Water	01040 1 0	Copper, dissolved [as Cu]	<=	7	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	074	A	A4	074-IW	IW - Impaired Water	39516 1 0	Polychlorinated biphenyls [PCBs]	<=	0.2	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
							00010 1 0	Temperature, water deg. centigrade	<=	24	Maximum	deg C	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	075	P	P1	075-IW	IW - Impaired Water	01104 1 0	Aluminum, total recoverable [as Al]	<=	1010	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	075	P	P1	075-IW	IW - Impaired Water	01040 1 0	Copper, dissolved [as Cu]	<=	7	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	075	P	P1	075-IW	IW - Impaired Water	39516 1 0	Polychlorinated biphenyls [PCBs]	<=	0.2	Maximum	ug/L	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020
TBD	Los Alamos National Laboratory	075	P	P1	075-IW	IW - Impaired Water	00010 1 0	Temperature, water deg. centigrade	<=	24	Maximum	deg C	1/YR	Gr	4/1/2019	11/30/2019	1/31/2020

## **ENCLOSURE 4**

**Threatened and Endangered Species Protection Concurrence  
Letters from the United States Department of Interior, Fish and  
Wildlife Service**

**EPC-DO: 18-358**

**LA-UR-18-29182**

**Date:** **OCT 01 2018**





## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

New Mexico Ecological Services Field Office  
2105 Osuna NE

Albuquerque, New Mexico 87113  
Phone: (505) 346-2525 Fax: (505) 346-2542

February 12, 1999

Cons. #2-22-98-I-336

Cons. #2-22-95-I-108

David A. Gurule, Acting Area Manager  
Department of Energy  
Albuquerque Operations Office  
Los Alamos Area Office  
Los Alamos, New Mexico 87545

Dear Mr. Gurule:

This responds to your letter dated August 6, 1998, requesting our review and concurrence with the Threatened and Endangered Species Habitat Management Plan (HMP) for Los Alamos National Laboratory (LANL). The HMP was prepared by the LANL Ecology Group for the Department of Energy (DOE) as part of the Dual-Axis Radiographic Hydrodynamics Test Facility (DAHRT) Mitigation Action Plan. The U.S. Fish and Wildlife Service (Service) has worked closely with LANL in the development of the HMP. As a result of discussions and meetings following the August 6, 1998, submittal, additional information/clarification was provided via letters, updated Biological Evaluations/HMPs, and e-mail messages, dated September 8, October 20, November 25, and December 9, 1998, and January 4, January 22, and January 29, 1999. The purpose of the HMP is to provide for the protection of threatened and endangered species and their habitats on LANL. The HMP consists of three components that must be used together to assure proper management of the threatened and endangered species: an Overview Document, Site Plans, and Monitoring Plans. It was determined that if all the restrictions and protective measures outlined in the HMP are strictly followed, the implementation of this HMP may affect, but is not likely to adversely affect the Mexican spotted owl (owl), peregrine falcon (falcon), bald eagle (eagle), and southwestern willow flycatcher (flycatcher). The Biological Evaluation (BE) also considered potential impacts on the black-footed ferret, arctic peregrine falcon, and whooping crane. It was determined that there would be no effect on these species because of a lack of habitat.

Property at LANL varies from remote isolation to heavily developed and/or industrialized. The Service agrees, as stated in the Overview document, that a number of activities at LANL have the potential to adversely impact threatened and endangered species. Many of the industrial processes used at LANL have involved hazardous and radioactive materials. These materials as well as remediation of potential release sites may disturb

or reduce population viability of threatened and endangered species. In addition, other potential sources of disturbance or habitat alterations are possible as a result of the residential and commercial development in the LANL area. While the HMP identifies potential sources of adverse effects, this consultation does not necessarily cover all of those impacts. The Service does not anticipate that DOE will be able to plan all of its operations at LANL in accordance with this plan. The direct effects of most actions can be minimized through implementation of the HMP; however, a more thorough assessment is necessary to adequately evaluate the indirect and cumulative impacts of all actions that are funded, authorized, and permitted by DOE, as well as potential impacts from interrelated and interdependent actions. It was agreed (by Service, DOE, and LANL personnel) that consultation concerning ongoing LANL operations would be handled separately from the HMP, under the consultation on the Site-Wide EIS.

The Site Plans identify the particular areas of LANL where operations might impact known occupied or potential habitat for the flycatcher, eagle, falcon, and owl. Suitable habitat for these species, along with protective buffer areas surrounding their habitat, have been designated as Areas of Environmental Interest (AEIs). For the flycatcher, one AEI was established based on an observation of a migrant male flycatcher in 1997. The AEI is located in the Pajarito wetland area and includes the best available riparian habitat. For eagles, one AEI has been identified for wintering habitat that exists along the Rio Grande on the eastern edge of LANL. It is based on the locations of known and potential roost sites. For the falcon, four AEIs have been identified. They consist of the habitat previously identified under the 1985 interagency agreement. These areas are centered on deep canyons on the eastern side of LANL or on adjacent lands. LANL has agreed to implement the recommended management guidelines, which utilize four management zones (A through D) to protect nesting peregrine falcons from disturbance. For the owl, six AEIs have been identified, but only one of these sites is known to be occupied. These AEIs are based on and located in canyons that have been defined as suitable nest/roost habitat.

The AEI management section of each Site Plan provides guidelines for LANL operations to reduce or eliminate threats to each species. The primary threats on LANL property are (1) impacts on habitat quality from LANL operations and (2) disturbance of nesting or roosting birds. The site plans provide information on their location and guidelines for their management. The AEI Site Plans consist of a species description, descriptions of the AEIs for the species, descriptions of current impacts in the AEIs, management plans that describe allowable activities within core and buffer areas under the guidelines of the sites plan and protective measures. Activities discussed in the site plans include day to day activities, such as access into an AEI, as well as long-term projects, such as levels of habitat alteration in the buffer area of an AEI. Restrictions will be implemented on activities that could cause disturbance (people, vehicles and machinery, aircraft, light production, and noise) within occupied AEIs. The location of a potential disturbance activity within the AEI, the occupancy status of the AEI, and the type of activity all affect whether or not an activity is allowable. Habitat alterations are always restricted in core areas, but a limited amount of future development is allowed in currently undeveloped DOE-controlled buffer areas under the guidelines of this site plan as long

as it does not alter habitat in the undeveloped AEI (including light and noise guidelines). The purpose of buffer areas is to protect core areas from undue disturbance or habitat alteration or habitat degradation. Each AEI is specific to the situation or circumstances of the site it covers. According to the HMP, development beyond the cap established for each AEI, or greater than 2 hectares in size, including the developed-area border, requires independent review for ESA compliance.

Varying amounts of development and/or ongoing activities exist in the cores and buffers of each AEI. These developments may include residential, commercial, and light industrial areas, as well as roads and utility corridors. Existing/ongoing activities may include periodic scientific surveys, power line maintenance, recreational use, residential development, ER Program activities, and possible use of a firing site. Potential disturbance may be associated with automobile and truck traffic, construction activities, a live-fire range, explosives testing, and aircraft traffic at the County airport. 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. If a proposed action within a developed area does not meet site plan guidelines, it must be individually reviewed for ESA compliance.

Some activities such as utility corridor maintenance, fuels management, and a limited amount of development are allowed in each AEI (as described in the HMP). The potential impacts of these activities are considered to be insignificant or discountable because they will occur in habitat that has been previously disturbed or is of poor quality due to its size or proximity to already developed areas. It is our understanding (based on the January 22, 1999, e-mail response from Terry Foxx) that the fuels management activities within the owl AEIs will only consist of ongoing and proposed fire protection activities around existing facilities (e.g. thinning around buildings) or those activities that are already covered under the Dome Fire Emergency BA. The other fire management activities mentioned in the HMP will go through the ESH-ID process and further consultation with the Service when a fire management plan is completed in the future.

In general, activities that detrimentally alter habitat in an AEI or would cause unacceptable disturbance to the species inhabiting the AEI are not allowed under the guidelines of a Site Plan. The Site Plans are designed to minimize impacts to threatened and endangered species and their habitat. The protective measures and restrictions outlined in the Site Plans were developed using the best available data, in cooperation with Service biologists.

The U.S. Fish and Wildlife Service concurs with DOE's determination that implementation of LANL's HMP may affect, but is not likely to adversely affect the Mexican spotted owl, American peregrine falcon, bald eagle, and southwestern willow flycatcher based on the protective measures described in the BA and HMP. If all the restrictions and protective measures outlined in the HMP are strictly followed, potential impacts on owls, falcons, eagles, and flycatchers are expected to be insignificant or

discountable for the following reasons: 1) appropriate seasonal restrictions will be implemented to avoid disturbance to potentially breeding flycatchers, peregrines, and owls and wintering eagles; 2) no nest or roost habitat for any listed species will be altered; 3) the total amount of potential foraging habitat that could be impacted within each species home ranges is expected to be insignificant compared to the amount of available foraging habitat throughout the area; 4) monitoring plans have been developed as an integral part of the HMP; and 5) a mechanism for incorporating necessary technical and regulatory changes and updating the HMP has been included (page 32 of the Overview Document).

In future communications regarding this project, please refer to Consultation #2-22-98-1-336. If we can be of further assistance, please contact Carol Torrez of my staff at (505) 346-2525, ext. 115.

Sincerely,



Jennifer Fowler-Propst  
Field Supervisor

cc:

Teralene Foxx, Project Manager, Ecology Group, Los Alamos National Laboratory,  
P.O. Box 1663, Mail Stop M887, Los Alamos, New Mexico 87545  
Elizabeth Withers, U.S. Department of Energy, Los Alamos Area Office, 35<sup>th</sup> Street, Los  
Alamos, New Mexico  
Field Supervisor, Ecological Services, U.S. Fish and Wildlife Service, Phoenix,  
Arizona





## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
New Mexico Ecological Services Field Office  
2105 Osuna NE  
Albuquerque, New Mexico 87113  
Phone: (505) 346-2525 Fax: (505) 346-2542

December 9, 2013

Cons. #02ENNM00-2014-I-0014

Geoffrey L. Beausoleil, Acting Manager  
National Nuclear Security Administration, Los Alamos Field Office  
Department of Energy  
Los Alamos, New Mexico 87544

Dear Mr. Beausoleil:

Thank you for your biological assessment entitled, "Biological Assessment of the Effects of Implementing the Jemez Mountains Salamander Site Plan on Federally Listed Threatened and Endangered Species at Los Alamos National Laboratory" (BA); the request for informal consultation and conferencing received on July 25, 2013 and supplemental information supplied in the "Jemez Mountains Salamander (*Plethodon neomexicanus*) Los Alamos National Laboratory (LANL) Site Plan" (Site Plan); and emails dated November 19 and December 3, 2013. The Department of Energy (DOE) requested concurrence with the determination of effects for the endangered Jemez Mountains salamander (*Plethodon neomexicanus*) (salamander) pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. § 1531 *et seq.*). Your proposed action consists of implementing the Site Plan, and includes of the incorporation of this Site Plan into LANL's Habitat Management Plan (HMP). The HMP was consulted upon in 1999 (Consultation #2-22-981-336) as the primary mechanism to ensure compliance with the ESA at LANL. The actions described in the Site Plan and analyzed in the BA, and supplemental emails are hereby incorporated by reference. You determined that implementing the Site Plan "may affect, is not likely to adversely affect" the salamander, and includes placing restrictions on certain types of work in areas identified as core habitat for the salamander on LANL property with the purpose of ensuring that effects to the salamander from those actions identified in the Site Plan are insignificant and discountable.

The Site Plan does not include any areas within designated salamander critical habitat, indicating that no critical habitat will be affected. The Site Plan has modeled and field validated the model to identify the areas on LANL property with the highest potential to be occupied by salamanders based on habitat features for the salamander. Each area identified by the modeling is termed "Area of Environmental Interest" (AEI) and consists of a "core area" and a "buffer area". The core area habitat is defined as suitable habitat where the salamander occurs or may occur at LANL. The core area habitat consists of sections of north-facing slope that contain the required

micro-habitat to support salamanders. The buffer area is 328 feet (100 meters) wide extending outward from the edge of the core area. Only the Los Alamos Canyon AEI is known to be occupied based on surveys. Surveys for the salamander are known to have a very low detection rate for occupied areas and DOE has assumed that all AEIs at LANL are occupied at all times by the salamander.

Within the Site Plan, DOE has assessed activities that could cause habitat alteration and includes any action that alters the soil structure, vegetative components necessary to the species, water quality, or hydrology in undeveloped areas of an AEI. If an activity were to take place outside of the AEI the activity will be assessed if it will have effects inside the AEI core. Within the core areas, only activities specified within the Site Plan and those that have no effect in the core areas (e.g. no habitat alterations or effects within the core areas) will be conducted without further consultation with the Service. Habitat alterations also include soil pits for soil samples deeper than 6 inches (15.2 centimeters) using either hand or mechanized augers. Within the Site Plan, DOE is proposing fuels management practices to reduce wildfire risk and maintenance of utility corridors within the AEIs. The likelihood that salamanders may be affected by the actions in the Site Plan is very low. To ensure that effects to the salamander are insignificant and discountable, the Site Plan incorporates the following conservation measures as restrictions to the identified work:

#### Fuels Management Practices to Reduce Wildfire Risk

- a. Within undeveloped core areas, thinning trees to a level of 80% canopy cover or higher may occur; tree thinning below 80% canopy cover is not part of the action under this consultation.
- b. Large logs on the ground will be left in place and not chipped.
- c. Large trees that are felled will be left as large logs on the ground
- d. When appropriate, smaller trees and understory shrubs that may be thinned will be dispersed and left on-site to aid in soil moisture retention.
- e. In buffer areas, thinning of trees may occur to the current LANL-approved prescription level; clear-cutting will not occur.
- f. Thinning activities will not occur during the rainy season when salamanders are surface active, between July 1 – October 31. Thinning activities may occur earlier in October if freezing temperatures are present.
- g. In the unlikely event that a salamander is observed surface active during thinning activities, all activities shall cease, and the Service will be notified.

#### Utility Corridors

- a. Cutting trees that threaten power lines may occur within 26 feet (8 meters) of either side of an existing utility line at LANL
- b. New utility lines and utility lines requiring clearance of a right-of-way greater than 52 feet (16 meters) total in core habitat is not part of the action under this consultation.


Habitat alterations other than the fuels management practices and utility corridor maintenance described above will not occur in undeveloped core areas under the guidelines of the Site Plan or this consultation. The Service concurs with DOE's determination regarding the salamander for the following reasons:

Within the Site Plan, DOE has placed the above detailed restrictions to ensure that any effects to the salamander and its habitat remain insignificant and discountable. Canopy cover will remain at 80% or greater in undeveloped core areas and fire management actions will occur outside of the salamander surface activity period. Maintaining utility line corridors in areas with existing infrastructure (the utility lines) by removing individual hazard trees is not expected to have any measurable effect on salamanders or their potential habitat. Consequently, we concur that potential effects to the salamander from the proposed action will be insignificant and discountable.

This concludes section 7 consultation regarding the proposed action. If monitoring or other information results in modification or the inability to complete all aspects of the proposed action, consultation should be reinitiated. Please contact the Service if: 1) future surveys detect listed, proposed or candidate species in habitats where they have not been previously observed; 2) the proposed action changes or new information reveals effects of the proposal to listed species that have not been considered in this analysis; or 3) a new species is listed or critical habitat designated that may be affected by the action.

Thank you for your concern for endangered and threatened species and New Mexico's wildlife habitats. In future correspondence regarding this project, please refer to consultation #02ENNM00-2014-I-0014. If you have any questions, please contact Michelle Christman of my staff at (505) 761-4715.

Sincerely,

  
Wally Murphy  
Field Supervisor

cc:

Wildlife Biologist, Cuba Ranger District, Cuba, NM (Attn: Ramon Borrego)  
Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

New Mexico Ecological Services Field Office  
2105 Osuna Road NE  
Albuquerque, New Mexico 87113  
Telephone 505-346-2525 Fax 505-346-2542  
[www.fws.gov/southwest/es/newmexico/](http://www.fws.gov/southwest/es/newmexico/)

August 6, 2015

Cons. # 02ENNM00-2015-I-0538

Kimberly Davis Lebak, Manager  
Department of Energy  
National Nuclear Security Administration  
Los Alamos Field Office  
Los Alamos, New Mexico 87544

Dear Ms. Lebak:

This responds to your July 9, 2015, cover letter and biological assessment (BA) requesting informal consultation for the addition of the Western distinct population segment of the yellow-billed cuckoo (*Coccyzus americanus occidentalis*) (cuckoo) and the New Mexico meadow jumping mouse (*Zapus hudsonius luteus*) (jumping mouse) to the Los Alamos National Laboratory Habitat Management Plan, Los Alamos, New Mexico. As documented in your BA, which is hereby incorporated by reference, we find that your proposed action will have insignificant and discountable effects to the cuckoo and the jumping mouse. Therefore, the Service concurs with your determination of “may affect, is not likely to adversely affect” for the cuckoo and the jumping mouse.

This concludes section 7 consultation regarding the proposed action. If monitoring or other information results in modification or the inability to complete all aspects of the proposed action, consultation should be reinitiated. Please contact the Service if: 1) future surveys detect listed, proposed or candidate species in habitats where they have not been previously observed; 2) the proposed action changes or new information reveals effects of the proposal to listed species that have not been considered in this analysis; or 3) a new species is listed or critical habitat designated that may be affected by the action.

Thank you for your concern for endangered species and New Mexico's wildlife habitats. If you have any questions, please contact Eric Hein of my staff at the letterhead address or at (505) 761-4735.

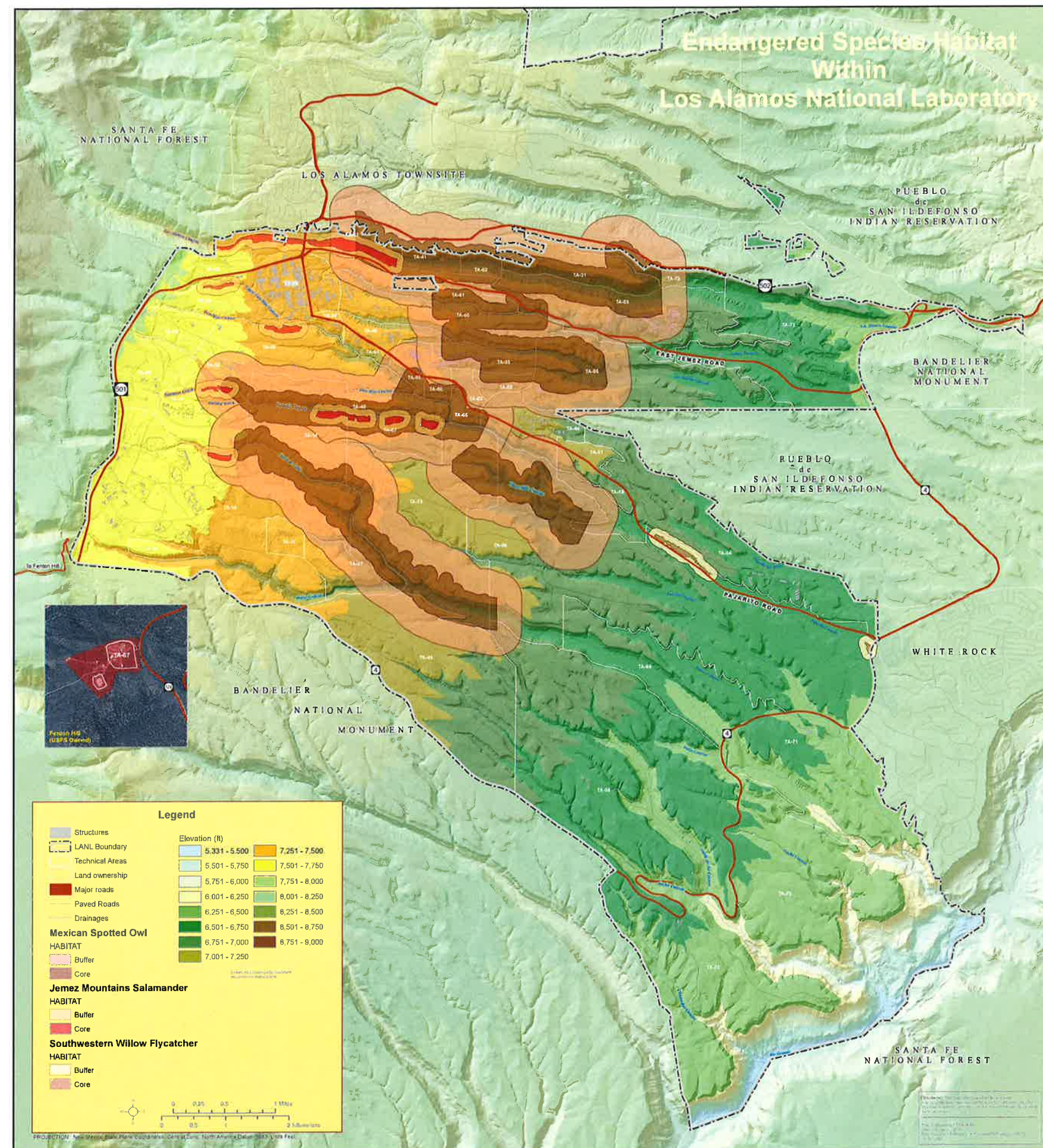
Sincerely,

for Wally Murphy  
Field Supervisor

cc:

Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico









Attachment 2: **SWPPP AMENDMENTS**

<b>Date</b>	<b>Plan Section</b>	<b>Reason for Amendment</b>	<b>Amendment</b>
Jan 2019	All	New MSGP Plan for new Laboratory Contract.	New MSGP Plan for Triad, LLC (replacing LANS, LLC.

Attachment 3: **CERTIFICATION OF NO UNAUTHORIZED STORMWATER DISCHARGES**



## Unauthorized Non-Storm Water Discharge Assessment and Certification

<b>Facility:</b>	TA-60-01 Heavy Equipment Shop		
<b>Outfalls (including SIOs*) or Other Onsite Drainage Points Observed During the Assessment</b>	<b>Identified Potential Sources of Unauthorized Non-Storm Water Discharge (if applicable)</b>	<b>Description of Assessment Criterion Used</b>	<b>Describe any Required Actions to Control or Eliminate the Discharge</b>
022 (021, 023, 024, 025)	None	Visual Inspection	N/A
<b>Assessor:</b>			
Print Name:	Signature:	Title:	Date Assessed:
Jillian E. Burgin		DEP, CISEC	12/19/18
<b>Authorized Signatory:</b> 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:
Russell Stone		ESH Mgr 4 DESH-UTS	1/25/2019

\*SIO = Substantially Identical Outfall

Attachment 4: **DULY AUTHORIZED SIGNATORY MEMORANDUM**



***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 11 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](mailto: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](mailto:williams.nancy@epa.gov), (E-File)  
Brent E. Larsen, USEPA, Region 6, [Larsen.brent@epa.gov](mailto:Larsen.brent@epa.gov), (E-File)  
Robert Houston, USEPA, Region 6, [Houston.robert@epa.gov](mailto:Houston.robert@epa.gov), (E-File)  
Sarah Holcomb, NMED, [sarah.holcomb@state.nm.us](mailto:sarah.holcomb@state.nm.us), (E-File)  
Karen E. Armijo, LASO-MA-LS, [Karen.armijo@nnsa.doe.gov](mailto:Karen.armijo@nnsa.doe.gov), (E-File)  
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Michael W. Hazen, ESHQSS, [mhazen@lanl.gov](mailto:mhazen@lanl.gov), (E-File)  
William R. Mairson, ESHQSS, [wrmairson@lanl.gov](mailto:wrmairson@lanl.gov), (E-File)  
Enrique Torres, EPC-DO, [etorres@lanl.gov](mailto:etorres@lanl.gov), (E-File)  
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[locatesteam@lanl.gov](mailto:locatesteam@lanl.gov), (E-File)  
[epc-correspondence@lanl.gov](mailto:epc-correspondence@lanl.gov), (E-File)  
[adesh-records@lanl.gov](mailto:adesh-records@lanl.gov), (E-File)

Attachment 5: **DISCHARGE MONITORING REPORTS**

Since Triad, LLC took over the operating contract after the monitoring period for 2018, DMRs for 2018 will be kept on file in the archived SWPPP for LANS, LLC.

Attachment 6: **ANNUAL REPORTS**

The 2018 Annual Report will be submitted to EPA on January 30, 2019. A hard copy will be kept on file with the SWPPP.

**Attachment 7: ROUTINE FACILITY INSPECTIONS**



# Los Alamos National Lab - ADESH

Work Order MSGP-RI-63347

MSGP Routine Inspection  
Printed 11/26/2018 - 5:09 PM

## Maintenance Details

**Requested:** 10/29/2018 10:35:40 AM  
**Procedure:** MSGP Routine Facility Inspection (EPC-CP-Form-1020.1)

**Target:** 11/30/2018  
**Priority/Type:** Normal / Inspection  
**Department:** Utilities and Infrastructure

**MSGP Program**  
**RG121.9**  
**TA-60-1 Heavy Equipment Yard**

**Last PM:** 9/27/2018

**Project:** Routine Facility Inspections  
Nov. 2018 (P-MSGP-RI-5346)

**Contact:**  
**Phone:**

**Reason:** 2018 November Inspections

**Special Instructions:** NMR053195

*Insp done*  
*11/27/18*  
*12:00 - 1:00*

## Tasks

#	Description	Meas.	No	N/A	Yes
<b>Weather Information</b>					
20	Describe the weather at time of inspection and document the temperature (F°).	42° Fair	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Within the Facility Boundary</b>					
40	Is the facility free of new discharges of pollutants that have occurred since the last inspection? If "Failed" describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
50	If "No" has a CAR been previously initiated for this new discharge?		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
60	Is the facility free of discharge of pollutants at the time of inspection? If "No" describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
70	Is the facility free of evidence of, or the potential for, pollutants entering the drainage system. If "No" describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Outfall Inspection (identify needed maintenance and repairs, failed control measures that need replacement, or a description of corrective actions in relevant task comment)</b>					
90	<b>Monitored Outfall [022]</b> Free of Evidence of Erosion? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
100	<b>Monitored Outfall [022]</b> Flow Dissipation Devices Operating Effectively? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
110	<b>Monitored Outfall [022]</b> Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
120	<b>Substantially Identical Outfall [021]</b> Free of Evidence of Erosion? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
130	<b>Substantially Identical Outfall [021]</b> Flow Dissipation Devices Operating Effectively? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
140	<b>Substantially Identical Outfall [021]</b> Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
150	<b>Substantially Identical Outfall [023]</b> Free of Evidence of Erosion? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
160	<b>Substantially Identical Outfall [023]</b> Flow Dissipation Devices Operating Effectively? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
170	<b>Substantially Identical Outfall [023]</b> Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
180	<b>Substantially Identical Outfall [024]</b> Free of Evidence of Erosion? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
190	<b>Substantially Identical Outfall [024]</b> Flow Dissipation Devices Operating Effectively? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
200	<b>Substantially Identical Outfall [024]</b> Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
210	<b>Substantially Identical Outfall [025]</b> Free of Evidence of Erosion? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
220	<b>Substantially Identical Outfall [025]</b> Flow Dissipation Devices Operating Effectively? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
230	<b>Substantially Identical Outfall [025]</b> Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Control Measures (identify needed maintenance and repairs, failed control measures that need replacement, or a**

**description of corrective actions in relevant task comments).**

250	<b>Asphalt Berm [6000403040027]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
260	<b>Asphalt Berm [6000403040028]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
270	<b>Asphalt Berm [6000403040029]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
280	<b>Asphalt Berm [6000403040047]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
290	<b>Gravel Bags [6000403100025]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
300	<b>Gravel Bags [6000403100026]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
310	<b>Concrete/Asphalt Channel/Swale [6000404020031]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
320	<b>Concrete/Asphalt Channel/Swale [6000404020032]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
330	<b>Rock Channel/Swale [6000404030001]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
340	<b>Rock Channel/Swale [6000404030023]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
350	<b>Rock Channel/Swale [6000404030043]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
360	<b>Rip Rap [6000404060002]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
370	<b>Rip Rap [6000404060039]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
380	<b>Earthen Channel/Swale [6000404010033]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
390	<b>Earthen Channel/Swale [6000404010034]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
400	<b>Gabion Swale [6000404090042]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
410	<b>Rock Check Dam [6000406010003]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
420	<b>Rock Check Dam [6000406010004]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
430	<b>Rock Check Dam [6000406010005]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
440	<b>Rock Check Dam [6000406010006]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
450	<b>Rock Check Dam [6000406010007]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
460	<b>Rock Check Dam [6000406010008]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
470	<b>Rock Check Dam [6000406010009]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
480	<b>Rock Check Dam [6000406010010]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
490	<b>Rock Check Dam [6000406010011]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
500	<b>Rock Check Dam [6000406010012]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
510	<b>Rock Check Dam [6000406010013]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
520	<b>Rock Check Dam [6000406010014]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
530	<b>Rock Check Dam [6000406010015]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
540	<b>Rock Check Dam [6000406010016]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

550	<b>Rock Check Dam [6000406010017]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
560	<b>Rock Check Dam [6000406010018]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
570	<b>Rock Check Dam [6000406010019]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
580	<b>Rock Check Dam [6000406010020]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
590	<b>Rock Check Dam [6000406010021]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
600	<b>Rock Check Dam [6000406010022]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
610	<b>Gabion [6000407010035]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
620	<b>Gabion [6000407010036]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
630	<b>Gabion [6000407010037]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
640	<b>Gabion [6000407010038]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
650	<b>Trench Drain [6000409040046]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
660	<b>Drop inlet with filters [6000409020041]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
670	<b>Drop Inlet with Petro-Plug [6000409010040]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
680	<b>EnviroSoxx w/ MetalLoxx [6000403200044]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
690	<b>EnviroSoxx w/ MetalLoxx [6000403200045]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
700	<b>EnviroSoxx w/ MetalLoxx [6000403200048]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Area/Activity exposed to stormwater (identify needed maintenance or a description of corrective actions in relevant task comment).**

720	Material loading/unloading and storage areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
730	Transfer areas for substances in bulk: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
740	Product/chemical storage areas (raw material): controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
750	Liquid tank storage/secondary containment: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
760	Industrial processing and finished product storage areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
770	Equipment operation and maintenance areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
780	Fueling areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
790	Outdoor vehicle and equipment washing areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
800	Machinery: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
810	Waste handling and disposal areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
820	Erodible areas/construction: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
830	Locations and sources of run-on to the site: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
840	Non-stormwater/illicit connections: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
850	Salt storage piles or pile containing salt: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	operating)? If "No" describe.			
860	Dust generation and vehicle tracking: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
870	Housekeeping (Industrial materials/residues/trash in contact with stormwater): controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
880	Leaks and spills: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
890	<b>Sector P [60004-]</b> Vehicle storage/maintenance areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Non-Compliance</b>				
910	Free of incidents of observed non-compliance not already identified above? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Additional Control Measures</b>				
930	Are permit requirements satisfied with existing control measure(s)? If "No" describe additional control measures needed.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Labor					
Labor	Assigned	Work Date	Reg Hrs	OT Hrs	Other Hrs
Burgin, Jillian	11/1/2018 / 1				

**Labor Report**

Completed: \_\_\_\_\_

Report: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

WO ID: MSGP-R1-63347 Page 4 of 4

Name/Z#: Jillian Burgin / 211081

Signature (lead inspector): Burgin, DEP/CISEC Date and Time: 11/27/18

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

1:00 PM

#### 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: Russell Fone Gx DESH-LIS

Signature: Russell Fone Date: 12/14/2018

# Los Alamos National Lab - ADESH

Work Order MSGP-RI-63447

MSGP Routine Inspection  
Printed 12/17/2018 - 4:43 PM

## Maintenance Details

**Requested:** 12/17/2018 4:33:27 PM  
**Procedure:** MSGP Routine Facility Inspection (EPC-CP-Form-1020.1)

**Target:** 12/31/2018  
**Priority/Type:** Normal / Inspection  
**Department:** Utilities and Infrastructure

**MSGP Program**  
**RG121.9**  
**TA-60-1 Heavy Equipment Yard**

**Last PM:** 11/27/2018  
**Project:** Routine Facility Inspections Dec. 2018 (P-MSGP-RI-5353)

**Contact:**  
**Phone:**

**Reason:** 2018 December Inspections

*Insp. done  
12/19/18  
1:00 - 2:40 pm*

## Tasks

#	Description	Meas.	No	N/A	Yes
<b>Weather Information</b>					
20	Describe the weather at time of inspection and document the temperature (F°). <i>46° Fair Windy</i>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Within the Facility Boundary</b>					
40	Is the facility free of new discharges of pollutants that have occurred since the last inspection? If "Failed" describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
50	If "No" has a CAR been previously initiated for this new discharge?		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
60	Is the facility free of discharge of pollutants at the time of inspection? If "No" describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
70	Is the facility free of evidence of, or the potential for, pollutants entering the drainage system. If "No" describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Outfall Inspection (identify needed maintenance and repairs, failed control measures that need replacement, or a description of corrective actions in relevant task comment)</b>					
90	<b>Monitored Outfall [022]</b> Free of Evidence of Erosion? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
100	<b>Monitored Outfall [022]</b> Flow Dissipation Devices Operating Effectively? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
110	<b>Monitored Outfall [022]</b> Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
120	<b>Substantially Identical Outfall [021]</b> Free of Evidence of Erosion? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
130	<b>Substantially Identical Outfall [021]</b> Flow Dissipation Devices Operating Effectively? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
140	<b>Substantially Identical Outfall [021]</b> Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
150	<b>Substantially Identical Outfall [023]</b> Free of Evidence of Erosion? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
160	<b>Substantially Identical Outfall [023]</b> Flow Dissipation Devices Operating Effectively? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
170	<b>Substantially Identical Outfall [023]</b> Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
180	<b>Substantially Identical Outfall [024]</b> Free of Evidence of Erosion? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
190	<b>Substantially Identical Outfall [024]</b> Flow Dissipation Devices Operating Effectively? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
200	<b>Substantially Identical Outfall [024]</b> Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
210	<b>Substantially Identical Outfall [025]</b> Free of Evidence of Erosion? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
220	<b>Substantially Identical Outfall [025]</b> Flow Dissipation Devices Operating Effectively? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
230	<b>Substantially Identical Outfall [025]</b> Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Control Measures (identify needed maintenance and repairs, failed control measures that need replacement, or a description of corrective actions in relevant task comments).**



[illegible]

	describe condition & need for Maintenance, Repair, or Replacement.			
560	<b>Rock Check Dam [6000406010018]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
570	<b>Rock Check Dam [6000406010019]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
580	<b>Rock Check Dam [6000406010020]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
590	<b>Rock Check Dam [6000406010021]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
600	<b>Rock Check Dam [6000406010022]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
610	<b>Gabion [6000407010035]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
620	<b>Gabion [6000407010036]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
630	<b>Gabion [6000407010037]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
640	<b>Gabion [6000407010038]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
650	<b>Trench Drain [6000409040046]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
660	<b>Drop inlet with filters [6000409020041]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
670	<b>Drop Inlet with Petro-Plug [6000409010040]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
680	<b>EnviroSoxx w/ MetalLoxx [6000403200044]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
690	<b>EnviroSoxx w/ MetalLoxx [6000403200045]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
700	<b>EnviroSoxx w/ MetalLoxx [6000403200048]</b> Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Area/Activity exposed to stormwater (identify needed maintenance or a description of corrective actions in relevant task comment).**

720	Material loading/unloading and storage areas: controls adequate (appropriate, effective, and operating)? If "No" describe. <i>SEE CAR # 1447, 1449, 1450, 1451, 1452, 1453, 1454,</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
730	Transfer areas for substances in bulk: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
740	Product/chemical storage areas (raw material): controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
750	Liquid tank storage/secondary containment: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
760	Industrial processing and finished product storage areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
770	Equipment operation and maintenance areas: controls adequate (appropriate, effective, and operating)? If "No" describe. <i>SEE CAR # 1445, 1446, 1448</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
780	Fueling areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
790	Outdoor vehicle and equipment washing areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
800	Machinery: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
810	Waste handling and disposal areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
820	Erodible areas/construction: controls adequate (appropriate, effective, and operating)? If "No" describe. <i>SEE CAR # 1450</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
830	Locations and sources of run-on to the site: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
840	Non-stormwater/illicit connections: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
850	Salt storage piles or pile containing salt: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



860	Dust generation and vehicle tracking: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
870	Housekeeping (Industrial materials/residues/trash in contact with stormwater): controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
880	Leaks and spills: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
890	<b>Sector P [60004-]</b> Vehicle storage/maintenance areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Non-Compliance

910	Free of incidents of observed non-compliance not already identified above? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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#### Additional Control Measures

930	Are permit requirements satisfied with existing control measure(s)? If "No" describe additional control measures needed.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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#### Labor

Labor	Assigned	Work Date	Reg Hrs	OT Hrs	Other Hrs
Burgin, Jillian	12/17/2018 / 1				
Wheeler, Holly	12/17/2018 / 1				

#### Labor Report

Completed: \_\_\_\_\_

Report: \_\_\_\_\_

WO ID: MSGP-RI-63447 Page 4 of 4

Name/Z#: Jillian Burgin / 211081 for Holly Wheeler / 118432

Signature (lead inspector): J. Burgin / CISC / DEP Date and Time: 12/19/18

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

2:40 PM

#### 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: Russell Stone Gd DESH-LLIS

Signature: Russell Stone Date: 1/1/2019



**Attachment 8: QUARTERLY VISUAL ASSESSMENTS**

Since Triad, LLC took over the operating contract after the QVA period for 2018, QVAs for 2018 will be kept on file in the archived SWPPP for LANS, LLC.

Attachment 9: **CORRECTIVE ACTION DOCUMENTATION AND CERTIFICATION**

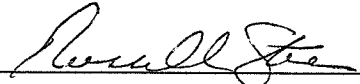
CAR #	FOD	MSGP Facility Desc	Inspection Date	Specific Location	CA Report Status	Finding	Finding Other Desc	Problem Description	Inspection Type	Inspection Type Other	Corrective Action Description	SIO	SIO Affected	Provide Action Taken at Affected SIOs	Is SWPPP Modification Required?	CA Initiate Date	CA Complete Date	Completed	CA Expected Date	CA Status Desc	EPA Notified Date (if 45 day time frame is exceeded.)
1454	UI	TA-60-1 Heavy Equipment Yard	12/19/2018 13:30	TA-60-1, lower yard north of structure # 60-0069.	A new corrective action	Control measures inadequate to meet non-numeric effluent limitations	-	Within the lower east yard at the TA-60-1 Heavy Equipment Yard, leftover ducting and straps were abandoned outside with no controls in place. Housekeeping issue.	Routine facility inspection	-	Determine if the leftover ducting and straps are usable. If not, dispose of, or recycle them. The current disposition of this material outside of a shed without controls is a housekeeping issue.	N	-	-	N	-	-	N	1/2/2019 17:00	Determine if the leftover ducting and straps are usable. If not, dispose of, or recycle them. The current disposition of this material outside of a shed without controls is a housekeeping issue.	-
1453	UI	TA-60-1 Heavy Equipment Yard	12/19/2018 13:30	East of TA-60-1 in the southern portion of the yard.	A new corrective action	Control measures inadequate to meet non-numeric effluent limitations	-	East of the TA-60-1, at the souther part of the upper yard, several broken solar panels are being stored outside.	Routine facility inspection	-	Salvage or dispose of the solar panels to prevent housekeeping issue.	N	-	-	N	-	-	N	1/2/2019 17:00	Salvage or dispose of the solar panels to prevent housekeeping issue.	-
1452	UI	TA-60-1 Heavy Equipment Yard	12/19/2018 13:30	Throughout the yard east of TA-60- 1.	A new corrective action	Control measures inadequate to meet non-numeric effluent limitations	-	There are several pieces of metal for fabrication and old pieces of equipment that are rusting and not covered. Specific equipment and locations are as follows: Tail gate and apron in the lower east yard; a rusted metal beam at the same general location; and metal mesh, diamond steel and steel sheets in the central portion of the lower east yard.	Routine facility inspection	-	Cover all equipment and metal identified above, move it inside a building, or salvage it.	Y	23	If the material and equipment is salvaged, stored inside a building or covered, it will minimize potential pollutant migration in stormwater.	N	-	-	N	1/2/2019 17:00	Cover all equipment and metal identified above, move it inside a building, or salvage it.	-
1451	UI	TA-60-1 Heavy Equipment Yard	12/19/2018 13:30	Southeast side of the TA-60-1 Heavy Equipment Yard.	A new corrective action	Control measures inadequate to meet non-numeric effluent limitations	-	On the east side of the TA-60-1, Heavy Equipment Yard, tires are being stockpiled outside with no stormwater controls in place.	Routine facility inspection	-	Store the tires under cover, salvage, recycle or dispose of them off-site.	N	-	-	N	-	-	N	1/2/2019 17:00	Store the tires under cover, salvage, recycle or dispose of them off-site.	-
1450	UI	TA-60-1 Heavy Equipment Yard	12/19/2018 13:40	Bare soil area at the far west portion of TA-60 HEY south of Maniac Road.	A new corrective action	Control measures inadequate to meet non-numeric effluent limitations	-	At the far northwest corner of the TA-60-1 Heavy Equipment Yard, stormwater is sheet flowing off the asphalt private vehicle parking area and causing erosion to the soil between there and Maniac Road.	Routine facility inspection	-	Stabilize the eroding areas.	Y	024, and 025	Stabilization of the eroded areas will be sufficient to address sediment migration to outfalls 024 and 025.	Y	-	-	N	1/2/2019 17:00	Stabilize the eroding areas. DEP walked down the area with Roads & Grounds on 12/20/18. R&G will regrade area and stabilize with asphalt millings until the area is paved later in the year. The lab was closed for Christmas Break from 12/21/18- 1/04/19 (with snow days on 1/2 & 1/3). There is currently over 2-3ft of snow in the area and work won't be able to be done until snow is removed or melted.	-

1449	UI	TA-60-1 Heavy Equipment Yard	12/19/2018 13:20	Several metal storage racks east of TA-60-1 and one west.	A new corrective action	Control measures inadequate to meet non-numeric effluent limitations	-	At several locations within the TA-60-1 Heavy Equipment Yard, either metal storage racks are not covered, the existing cover needs to be replaced or metal is stored near the rack that needs to be moved off the ground and be covered. Specific locations include: north of structure TA-60-330; blade storage area on the north side of the lower east yard; far east end of lower east yard; between trailers TA-60-008 and 009; and the west side of TA-60-1 (center area).	Routine facility inspection	-	Cover the metal storage racks or replace torn covers. Pick metal up off the ground and cover it or move it inside.	Y	021, 022, 023 and 024	If metal is covered, removed or moved inside, at the above specified locations, it will minimize exposure of pollutants at these locations.	N	-	-	N	1/2/2019 17:00	Cover the metal storage racks or replace torn covers. Pick metal up off the ground and cover it or move it inside.	-
1448	UI	TA-60-1 Heavy Equipment Yard	12/19/2018 13:20	West of TA-60-1 by the roll-up doors.	A new corrective action	Control measures inadequate to meet non-numeric effluent limitations	-	Steel, for fabrication of ladder racks, was stored outside west of TA-60-1 without being covered.	Routine facility inspection	-	Store the steel material (for fabrication) inside the building or cover it.	Y	24	If the steel is moved inside the building, it will not affect outfall 024. If the material remains outside, it must be covered to minimize exposure of pollutants to outfall 024.	Y	-	-	N	1/2/2019 0:00	Store the steel material (for fabrication) inside the building or cover it.	-
1447	UI	TA-60-1 Heavy Equipment Yard	12/19/2018 13:20	Lower yard at the TA-60-1 Heavy Equipment Yard.	A new corrective action	Control measures inadequate to meet non-numeric effluent limitations	-	Three roll-off bins were not covered. Two were located in the lower yard and one was in the paved area east of TA-60-1.	Routine facility inspection	-	Cover the roll-off bins.	N	-	-	N	-	-	N	1/2/2019 17:00	Cover the roll-off bins.	-
1446	UI	TA-60-1 Heavy Equipment Yard	12/19/2018 13:20	East and West side of TA-60 Building 1.	A new corrective action	Control measures inadequate to meet non-numeric effluent limitations	-	Three small green containers storing metal for recycle were not covered. Two containers were on the east side of TA-60-1 and one was on the west side.	Routine facility inspection	-	Cover the green containers holding air filters and other metal for recycle.	N	-	-	N	12/19/2018 15:00	12/19/2018 16:00	Y	-	Cover the green containers holding air filters and other metal for recycle. Bins were covered 12/19/18.	-
1445	UI	TA-60-1 Heavy Equipment Yard	12/19/2018 13:20	NE corner outside of TA-60-1 between the roll-up doors and trench drain.	A new corrective action	Control measures inadequate to meet non-numeric effluent limitations	-	Outside, at the northeast corner of TA-60-1, a rusted tailgate and apron from a truck getting serviced (inside the bay) were stored uncovered. In addition, a rusted piece of steel and two water pumps for fire trucks (waiting to be sent off-site for reconditioning) were also stored in the same location without cover.	Routine facility inspection	-	Place the pumps, piece of steel, tailgate and apron inside or cover them, if left outside.	N	-	-	N	12/19/2018 15:00	12/19/2018 16:00	Y	-	Place the pumps, piece of steel, tailgate and apron inside or cover them, if left outside. Items were removed or covered 12/19/18.	-

## **CERTIFICATION FOR CORRECTIVE ACTIONS**

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.

Printed Name: Russell Stone Title: GL OESH-ULS

Signature:  Date: 1/22/2019

**Attachment 10: TRAINING DOCUMENTATION**

## 2018 SWPPP Training Roster – TA-60-1 Heavy Equipment Shop 12/17/18

[illegible]

## 2018 Annual SWPPP Training

### TA-60-1 Heavy Equipment Shop

- Review 2017 training presentation (new employees to the SWPPP, if applicable)
- New BMPs or facility changes?
- **Review of CARs 2018**
  - 2/23/18: Tarps are torn at the lower east lot. Materials were re-tarped on 3/2/18.
  - 4/26/18: There is excessive sediment accumulation around the gravel bags at Outfall 024. Clean sediment out of outfall at gravel bags. Reported to facility personnel and Roads & Grounds. Will perform a walk down on 4/30 with R&G. Work completed on 5/1/18.
  - 4/26/18: Tarps are torn or blown off materials in lower east lot. Re-secure or replace tarps where needed. Reported to facility personnel at the time of inspection. Problem corrected on 5/2/18.
  - 4/26/18: Housekeeping needed at 150 gallon used oil storage area at SE corner of building; remove cardboard at SE corner of upper lot, remove large metal part that is in the southern drainage ditch at SE lower lot. Reported to facility personnel at the time of inspection. Metal part taken out of ditch on 5/1/18. Housekeeping was performed 5/3/18.
  - 5/23/2018: Tarps on metal materials have come loose in the upper and lower east lot (due to recent storm event). Reported CAR issue to facility personnel at the time of inspection. Problem was corrected on 5/24/18.
  - 10/25/18: Tarps have become unsecured at material storage area. Re-secure tarps where needed to cover materials in the lower east lot. Notified facility of corrective action needed at time of inspection. Corrected 11/9/18.
- **Review of Spills 2018**
  - 1/25/18: Refueling truck E29904 had a coolant line leak outside of the repair bay on the concrete pad. The truck was in the process of being repaired. Dry absorbant had been applied to the leaked coolant. The leak was contained on site and did not reach a storm drain or outfall. The vehicle was in the process of being repaired and the leak from the coolant line was stopped. The leaked coolant was cleaned up and the leak was stopped. Final repairs to the vehicle will be made on 1/29/18.
  - 6/28/18: Approximately 2 gallons of hydraulic fluid spilled on the east side of TA-60-1 this morning when the filter on a vehicle (Vacuum Truck G82-0168R) PTO failed. The hydraulic fluid spilled onto the underlying concrete and a small portion entered a trench drain connected to the facility's oil water separator. Upon discovery of the spill, absorbent material was deployed to minimize the extent of the release and Micro-blaze was applied to the impacted area. The spill did not leave the site or adversely impact any SWMUs or AOCs and is not reportable to NMED pursuant to 20.6.2.1203 NMAC. Corrective actions were completed shortly after the spill occurred.



- 8/8/18: Approximately 1 cup of gasoline spilled onto the underlying soil west of TA-60-01 (near the intersection of Eniwetok and Maniac) yesterday afternoon during the refueling of a man lift. The spill occurred when the truck's fuel hose developed a leak while dispensing fuel. The operation was stopped upon discovery of the spill and the impacted soil was removed. Spill was remediated immediately after occurring.
- **Overview of Water Quality Exceedances:**
  - 7/19/18: Discharge from outfall 022 at the TA-60-1 Heavy Equipment Yard exceeded the New Mexico water quality standard for total recoverable Aluminum. The concentration of total recoverable Aluminum discharged during the storm event on was 2370 ug/L and the water quality standard is 681 ug/L. \*Site outfalls were evaluated on 7/19 after notification of CAR. The main drainage channel of Outfall 022 was cleaned out 7/23/18.
  - 7/19/18: Discharge from outfall 022 at the TA-60-1 Heavy Equipment Yard exceeded the New Mexico water quality standard for dissolved Copper. The concentration of dissolved Copper discharged during the storm event was 30.1 ug/L and the water quality standard is 6 ug/L. \*Site outfalls were evaluated on 7/19 after notification of CAR. The main drainage channel of Outfall 022 was cleaned out 7/23/18.
- **General Discussion/Issues/Questions:**
  - Tarps and housekeeping are primary issues. Propose a regularly scheduled walk-down for those items to avoid CARs.
  - Inspection date for EPC Annual Inspection: ***Tuesday 12/19/18***



# **Storm Water Multi-Sector General Permit (MSGP) for Industrial Facilities**

TA-60-1 Heavy Equipment Shop

SWPPP Training

2017-2018

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# MSGP Permit

- The Multi-Sector General Permit is a National Pollutant Discharge Elimination System (NPDES) Permit associated with the Clean Water Act (CWA) of 1973
  - Regulates storm water discharges from industrial facilities/activities
  - Objective is to minimize pollutants to surface waters
  - A new permit (with no.) is issued approx. every 5 years
    - **2015 MSGP** #NMR053915 (LANS)
    - Link to 2015 MSGP:  
[https://www.epa.gov/sites/production/files/2015-10/documents/msgp2015\\_finalpermit.pdf](https://www.epa.gov/sites/production/files/2015-10/documents/msgp2015_finalpermit.pdf)
- Requires implementation of a Stormwater Pollution Prevention Plan (SWPPP)
  - SWPPP team comprised of ESH and applicable facility personnel
  - Requires implementation of Control Measures or Best Management Practices (BMPs) to maintain water quality standards
  - Requires periodic inspections and sampling (monitoring)

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# MSGP Regulated Facilities at LANL

- **Metals Fab Shop** – TA-03-38: Sector AA (Fabricated Metal Products)
- **Carpenter Shop** – TA-03-38: Sector A (Timber Products)
- **Asphalt Batch Plant** – TA-60-233: Sector D (Asphalt Paving)
- **Metal Recycling Facility (MRF)** – TA-60-311: Sector N (Scrap Recycling)
- **Roads & Grounds** – TA-60-250: Sector P (Land Transportation/Warehousing)
- **Power Plant** – TA-03-1790: Sector O (Steam Electric Generating)
- **Heavy Equipment** – TA-60-01: Sector P (Land Transportation/Warehousing)
- **Salvage Yard** – TA-60-02: Sector P (Land Transportation/Warehousing)
- **TA-3-39 & 102** – Sector AA (Fabricated Metal Products)
- **Sigma Complex Foundry** – TA-03-66: Sector AA & F (Fabricated & Primary Metals)
- **TA-54** - TA-54-Area G, Area L & Rant: Sector K (Hazardous Waste TSDF)
- **Maint. Facility West** – TA-54-Area L: Sector P (Land Transportation/Warehousing)

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# Best Management Practices (BMPs)

- **Structural**
  - Installation, maintenance, replacement
- **Non-Structural**
  - Written Procedures (i.e. SOPs)
  - Preventive Maintenance
  - Training
  - Pollution Prevention Practices

UNCLASSIFIED

# TA-60-1 HEY SWPPP

## Best Management Practices (BMPs)

- Covered/Enclosed Material Storage:
  - Storing industrial materials indoors eliminates exposure to storm water.
  - Covered storage racks and roll-off bins minimize storm water contact with materials and pollutants.



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# TA-60-1 HEY SWPPP

## Best Management Practices (BMPs)

- Good Housekeeping:
  - Covered and enclosed trash bins minimize debris on site. Periodic sweeping of parking lots can reduce sediment build-up.
  - YOU can help reduce trash as well: keep truck beds clean, properly dispose of food trash and cigarette butts, keep dumpsters closed. Recycle water bottles, cans, plastic bags, etc..



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# TA-60-1 HEY SWPPP

## Best Management Practices (BMPs)

- Run-on/Run-off Erosion Control:
  - Berming and bmps such as gravel bags, wattles, rock check dams and ecoblocks can be used to divert run-on, dissipate run-off flow and minimize sediment transport and erosion.
  - Asphalt run-downs and rock-lined channels/gabions can be used for stabilized stormwater drainage and erosion control.



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# TA-60-1 HEY SWPPP

## Best Management Practices (BMPs)

- Spill Protection:

- Secondary containment units provide extra spill protection for oil-filled equipment, tanks and drums as well as chemicals and waste drums/containers.



- Oil Water Separator (OWS):

Prevents oil/oily water from being discharged to the environment. Filters out oil from steam clean pad and repair bays.



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# TA-60-1 HEY SWPPP

## Best Management Practices (BMPs)

- Spill Protection, Cont'd:

- Petro Barriers: Filter out oils that may be discharged through stormwater from the upper east lot. Prevents releases to the environment.



- Spill Clean-Up Materials:

- Spill kits/clean-up materials (such as Micro-Blaze, dry absorbents and pig pads) can be used to mitigate spills and prevent releases to the environment.

**Micro-Blaze®**  
Emergency Liquid Spill Control



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# TA-60-1 HEY SWPPP Spill Control/Reporting

Know where spill clean-up materials are located in your work areas.

Spill contacts are provided in the LOG-MSS Guidance:



Los Alamos National Laboratory - LOG-MSS Guidance



## Do you know who to call in the event of a spill/leak?




**Report a Spill**

**SEO (EM&R):**  
667-6211

**EPC-CP:**  
667-0666  
or Spill Pager  
664-7722

**Roads & Grounds:**  
667-6111

**WMCs Spill Pager:**  
664-5864

**LOG-MSS DEP:**  
665-1893



**Spills** and leaks from vehicles, equipment and laboratory operations can accidentally occur. Oil, fuel, hydraulic fluids and other chemicals, once spilled or leaked to the environment are pollutants that require immediate clean-up and spill reporting. It is important to prevent pollutants from entering into a watercourse or storm drain and from coming into contact with storm water. If you have the ability and materials to contain a spill (i.e. spill kit—absorbent pads, booms, etc.) you may do so in order to prevent migration of the spilled material until additional help arrives. You are still required to report the spill and should be aware of who to contact.

The appropriate spill contact should be listed in your Integrated Work Document (IWD). This can vary from your PIC to the Security & Emergency Operations Center (SEO), also known as EM&R, to your site access control office. The name and contact information for your Waste Management Coordinator (WMC) should also be listed in the IWD.

When in doubt, contact the SEO. They will respond, assess the situation, determine further actions required and will contact appropriate personnel. The Environmental Protection & Compliance (EPC-CP) group will also be contacted. EPC-CP will ensure a Spill Report is completed to document the spill. If the pollutant has reached a watercourse or storm drain, EPC-CP is responsible for reporting the spill to the state environment department - NMED and EPA.

A WMC will ensure that waste from a spill clean-up is properly managed and disposed. The LOG-MSS or FOD Deployed Environmental Professional (DEP) can help coordinate spill response and clean-up activities and can complete the Spill Report form.

-Jillian Burgin, Deployed Environmental Professional for LOG-MSS

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# TA-60-1 HEY SWPPP Samplers & Outfalls

## ■ Samplers

- Automated collection during storm events
- Monitoring for pollutants
  - Benchmark (sector specific limits, i.e. metals)
  - Impaired Waters (receiving water degradation)

## ■ Storm Drains (Outfalls)

- Sample/discharge points
- Evaluated during inspections
- Each numbered for site map

TA-60-1 has one monitored Outfall #022.



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# TA-60-1 HEY SWPPP Sampling (Monitoring)

- There are two types of monitoring:
  - **Benchmark (Quarterly)**
    - Monitors for sector-specific pollutants (i.e. metals)
  - **Impaired Waters (Annual)**
    - Monitors for pollutants associated with receiving water limits or impairments.

*Sampling parameters TA-60-1 HEY*

Monitoring Type	Location	Parameters		Numeric Limitations	Schedule
Benchmark	None required for Sector P				Quarterly
Impaired Waters	Sampler: MSGP02201 Outfall #022 Sandia Canyon	Aluminum		0.681 mg/L	Annual
		Gross Alpha, adjusted		15 pCi/L	
		Copper		0.006 mg/L	
		Thallium, dissolved		0.47 ug/L	
		PCB in Water Column		0.00064 ug/L	

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# TA-60-1 HEY SWPPP Inspections

- **Monthly Routine Inspections**

- Performed by DEP/Facility Personnel, annual with EPC-CP
  - Check for non-compliance issues/identify corrective actions
    - (i.e. housekeeping, uncovered materials, spills/pollutant discharge, BMP integrity)

- **Quarterly Visual Inspections**

- Performed during a storm event each quarter at each outfall (if possible)
  - Storm water sample collected in a clean, clear glass (at outfalls)
  - Storm water sample evaluated for potential pollutants
    - (i.e. odor, oil sheen, suspended particles)
  - Additional BMPs may be required if pollutants are evident

- **Additional Reporting Requirements**

- Annual reporting to EPA for corrective action status
- Quarterly Discharge Monitoring Report (DMR) for sample results
- Spill reporting to EPC-CP and potentially NMED if reportable

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# TA-60-1 HEY SWPPP Corrective Actions

## ■ MSGP Corrective Action Process

- Once identified – immediate reporting to appropriate facility personnel
- Entered into CARs database/main-con. for EPC-CP reporting/tracking
- Specific deadlines for completion:
  - Same day or next day if identified late in the day or after regular business hours (quick fixes)
  - 14 days (order parts, schedule labor) >must provide schedule to EPC-CP
  - 45 days maximum (temporary BMPs required in the meantime)
  - >45 days: Report to EPC-CP for EPA is required (schedule must be provided for completion). EPA must approve schedule.
- FSRs with cost codes may be required
- Anyone can report – not just inspector or EPC-CP
- Exceedances from sampling can trigger corrective actions, applicable to the same deadlines as noted above.

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# TA-60-1 HEY SWPPP Documentation

- **Required Documentation for SWPP Plan**
  - **Site Maps**
    - Facility Specific
    - Receiving Waters
    - Endangered Species
  - **Completed Inspection Forms & Templates**
  - **Annual Reporting Data**
  - **Notice of Intent (NOI) to EPA**
  - **Non-Storm Water Discharge Certification**
  - **Spill Tracking Table**
  - **Amendment Log**
  - **Sampling Results**
  - **Training Records**
  - **Critical Habitat Documentation/Historic Properties/NEPA**
  - **Procedures Referenced in the SWPPP**

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## TA-60-1 HEY SWPPP Location and Contacts

- Electronic versions of SWPP Plans can be found online on the public reading room at: <http://permalink.lanl.gov/object/tr?what=info:lanl-repo/lareport/LA-UR-17-20928>
- Hard copies are kept at MSGP sites or in DEPs office
  - **Environmental Contacts:**
    - Jillian Burgin, DESHS-UIS, DEP: 665-1893
    - Leonard Sandoval, DESHS-UIS, DEP: 667-3557
    - Russell Stone, DESHS-UIS, ESH Mgr.: 606-0017
    - Holly Wheeler, EPC-CP: 667-1312

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Attachment 11: **MSGP (OR ACTIVE URL)**

A copy of the 2015 MSGP is kept on file with the SWPPP hard copy.

The active URL to access the permit is:

<https://www.epa.gov/npdes/final-2015-msgp-documents>

Attachment 12: **THREATENED AND ENDANGERED SPECIES HABITAT MANAGEMENT PLAN FOR LOS  
ALAMOS NATIONAL LABORATORY**

LA-UR-14-21863

*Approved for public release;  
distribution is unlimited.*

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

*Author(s):* Environmental Protection Division  
Resources Management Team

*Intended for:* Reference purposes

*Date:* March 2014



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## ACRONYMS

AEI	Area of Environmental Interest
BA	biological assessment
Bd	Batrachochytrium dendrobatidis
BSL-3	Biosafety Level 3
COPCs	chemicals of potential concern
DARHT	Dual-Axis Radiographic Hydrodynamic Test (Facility)
dB	Decibel
DDT	(dichloro-diphenyl-trichloroethane)
DOE	U.S. Department of Energy
EPA	Environmental Protection Agency
ESA	Endangered Species Act of 1973
fc	foot candles
FR	Federal Register
GIS	geographic information system
HMP	Threatened and Endangered Species Habitat Management Plan
HVAC	heating, ventilation, and air conditioning
LANL	Los Alamos National Laboratory
NEPA	National Environmental Policy Act
NMED	New Mexico Environment Department
NPDES	National Pollutant Discharge Eliminations System
PCBs	polychlorinated biphenyls
PR-ID	Permits and Requirements Identification
SME	subject matter expert
USFWS	U.S. Fish and Wildlife Service



## **I. THREATENED AND ENDANGERED SPECIES HABITAT MANAGEMENT PLAN GENERAL OVERVIEW**

### **1.0 INTRODUCTION**

Los Alamos National Laboratory's (LANL) Threatened and Endangered Species Habitat Management Plan (HMP) was prepared to fulfill a commitment made in the U.S. Department of Energy's (DOE) "Final Environmental Impact Statement for the Dual-Axis Radiographic Hydrodynamic Test Facility Mitigation Action Plan" (DOE 1996). The HMP received concurrence from the U.S. Fish and Wildlife Service (USFWS) in 1999 (USFWS consultation numbers 2-22-98-I-336 and 2-22-95-I-108). In this 2014 update, we retained the management guidelines from the 1999 HMP for listed species, updated some descriptive information, and added the Jemez Mountains salamander (*Plethodon neomexicanus*), which was federally listed in September 2013 (USFWS consultation number 02ENNM00-2014-I-0014).

### **2.0 ROLE OF SITE PLANS IN THE HMP**

The purpose of the HMP is to provide a management strategy for the protection of threatened and endangered species and their habitats on LANL property. The HMP consists of site plans for federally listed threatened or endangered species with a moderate or high probability of occurring at LANL. The following federally listed threatened or endangered species currently have site plans at LANL: Mexican Spotted Owl (*Strix occidentalis lucida*), Southwestern Willow Flycatcher (*Empidonax traillii extimus*), and the Jemez Mountains salamander. Site plans provide guidance to ensure that LANL operations do not adversely affect threatened or endangered species or their habitats.

### **3.0 DESCRIPTION OF AREAS OF ENVIRONMENTAL INTEREST**

Suitable habitats for federally listed threatened and endangered species have been designated as Areas of Environmental Interest (AEIs). AEIs are geographical units at LANL that are managed for the protection of federally listed species and consist of core habitat areas and buffer areas. The purpose of the core habitat is to protect areas essential for the existence of the specific threatened or endangered species. This includes the appropriate habitat type for breeding, prey availability, and micro-climate conditions. The purpose of buffer areas is to protect core areas from undue disturbance and habitat degradation.

Site plans identify restrictions on activities within the AEIs. Allowable activities are activities that the USFWS has reviewed and provided concurrence that these activities are not likely to adversely affect federally listed species. Activities discussed in site plans include day-to-day activities causing disturbance (hereafter referred to as "disturbance activities"), such as access into an AEI, and long-term impacts, such as habitat alteration.

#### **3.1 Definition and Role of Developed Areas in AEI Management**

**Summary:** Habitat alteration is not restricted in developed areas unless it impacts undeveloped core areas of an AEI (e.g., noise and light impacts on a core area). Current ongoing disturbance activities are not restricted in developed areas. Disturbance activities not currently ongoing are

restricted when impacts occur to undeveloped core areas of an AEI that are occupied by a threatened or endangered species.

Developed areas include all building structures, paved roads, improved gravel roads, paved and unpaved parking lots, and firing sites. The extent of developed areas in each AEI was determined using two methods. First, LANL geographic information system (GIS) analysts placed a 15 m (49 ft) border around all buildings and parking lots. For paved and improved gravel roads, the developed area was defined as the area to a roadside fence, if one exists within 9 m (30 ft) of the road, or 5 m (15 ft) on each side of the road, if there is no fence within 9 m (30 ft). If an area of highly fragmented habitat was enclosed by roads, a security fence, or connected buildings, that area was also classified as developed. Developed areas at firing sites were defined as a circle with a 91-m (300-ft) radius from the most centrally located firing pad. Second, LANL GIS analysts overlaid scanned orthophotos onto a map of the Los Alamos area and digitized all areas that appeared developed. These two information sources were overlaid and combined, so that areas classified as developed by either method were considered developed in final maps and analyses. Some areas were confirmed by ground surveys, such as the firing sites. Developed areas are contained in the HMP GIS database.

Developed areas are located in the core and/or buffer of some AEIs. However, developed areas do not constitute suitable habitat for federally listed species. Current ongoing activities in developed areas constitute a baseline condition for the AEIs and are not restricted. New activities including further development within already existing developed areas are not restricted unless they impact undeveloped portions of an AEI core. For example, if light or noise from a new office building in a developed area were to raise levels in an undeveloped core area, those light and noise levels would be subject to the guidelines on habitat alterations. If a proposed action within a developed area does not meet site plan guidelines, it must be individually reviewed for compliance with the Endangered Species Act of 1973 (ESA).

Building a new structure or clearing land within a previously designated developed area in an AEI core does not add to the size of the developed area. New structures in core areas will not be given any developed-area border unless they are individually reviewed for ESA compliance.

Development occurring in the developed area in an AEI buffer can be given a 15 m (49 ft) developed-area border at the discretion of the project leader or facility manager. To expand the size of a developed area in a buffer based on new developments, please contact a LANL biological resources subject matter expert (SME) (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

### **3.2 General Description of Buffer Areas and Allowable Buffer Area Development**

**Summary:** Limited future development is allowed in the currently undeveloped DOE-controlled buffer area under the guidelines of this HMP as long as it does not alter habitat in the undeveloped AEI core (including light and noise guidelines). Development beyond the cap established for each AEI, or greater than 2 ha (5 ac) in size including the developed-area border, requires independent review for ESA compliance.

The purpose of buffer areas is to protect core areas from undue disturbance or habitat degradation. The current levels of development in buffer and core areas represent baseline conditions for this

HMP. No further development is allowed in the core area under the guidelines of this HMP. A limited amount of development is allowed in buffer areas. Under the guidelines of this HMP, individual development projects are limited to 2 ha (5 ac) in size, including a 15 m (49 ft) developed-area border around structures and a 5 m (15 ft) developed-area border around paved and improved gravel roads. Projects greater than 2 ha (5 ac) in area require individual review for ESA compliance (see exceptions for fuels management activities and utility corridor maintenance). New development projects in AEI buffer areas must be reported to LANL biological resources SMEs for tracking (<http://int.lanl.gov/environment/bio/controls/index.shtml>). Descriptions of each of the AEIs give the total area in each buffer area available for development.

### 3.3 Emergency Actions

**Summary:** Contact DOE and LANL biological resources SMEs as soon as possible.

If safety and/or property is immediately threatened by something occurring within an AEI (for example, wildfire, water line breakage, etc.) managers may activate emergency actions. Contact a LANL biological resources SME (<http://int.lanl.gov/environment/bio/controls/index.shtml>), the Environmental Stewardship Group (1-505-665-8855), or the DOE Los Alamos Field Office (Field Office; 1-505-667-6819) as soon as possible. If the emergency occurs outside of regular business hours, contact the Emergency Management Office (1-505-667-6211). This office will then communicate with the appropriate LANL and DOE Field Office personnel.

## 4.0 IMPLEMENTATION OF SITE PLANS

### 4.1 Roles and Responsibilities

**Summary:** LANL's facility managers and operational staff are responsible for ensuring that activities are reviewed for compliance with all applicable site plans. Figure 1 illustrates the process for utilizing site plans. If activities follow approved guidance, there is no requirement for additional ESA regulatory compliance. However, additional National Environmental Policy Act (NEPA), cultural resources, wetlands, or other regulatory compliance actions may be required.

If an activity or project occurs outside of all LANL AEIs and will not impact habitat within an AEI, it does not have to be reviewed for ESA compliance, unless it is a large project. Projects that are larger than 2 ha (5 ac) or cost more than \$5 million require an individual ESA compliance review, even if they are not located within an AEI.

LANL's facility managers are responsible for determining if operations within their geographic and/or programmatic area of responsibility comply with the guidelines in these site plans. Submission of a Permits and Requirements Identification (PR-ID) for a new or modified project is required under Program Description 400 (LANL 2013) and allows managers to identify the requirements within their project area. Deployed environmental professionals and core LANL biological resources SMEs are available to support facility managers. If activities follow site plan guidelines, they do not require any additional ESA regulatory compliance action. However, NEPA, cultural resources, wetlands, or other regulatory compliance actions are not addressed in site plans and additional compliance actions may be required. It is the responsibility of the project leader or facility management staff to ensure that all requirements are satisfied. If you have

questions, contact biological, cultural, NEPA, or other environmental SMEs. Contacts can be found at <http://int.lanl.gov/environment/compliance/ier/index.shtml>.

A single facility may have one or more AEIs within its boundary and the AEIs may be for different species. Some AEIs overlap. In areas where overlap occurs, project managers must follow the guidelines for AEIs of all involved species.

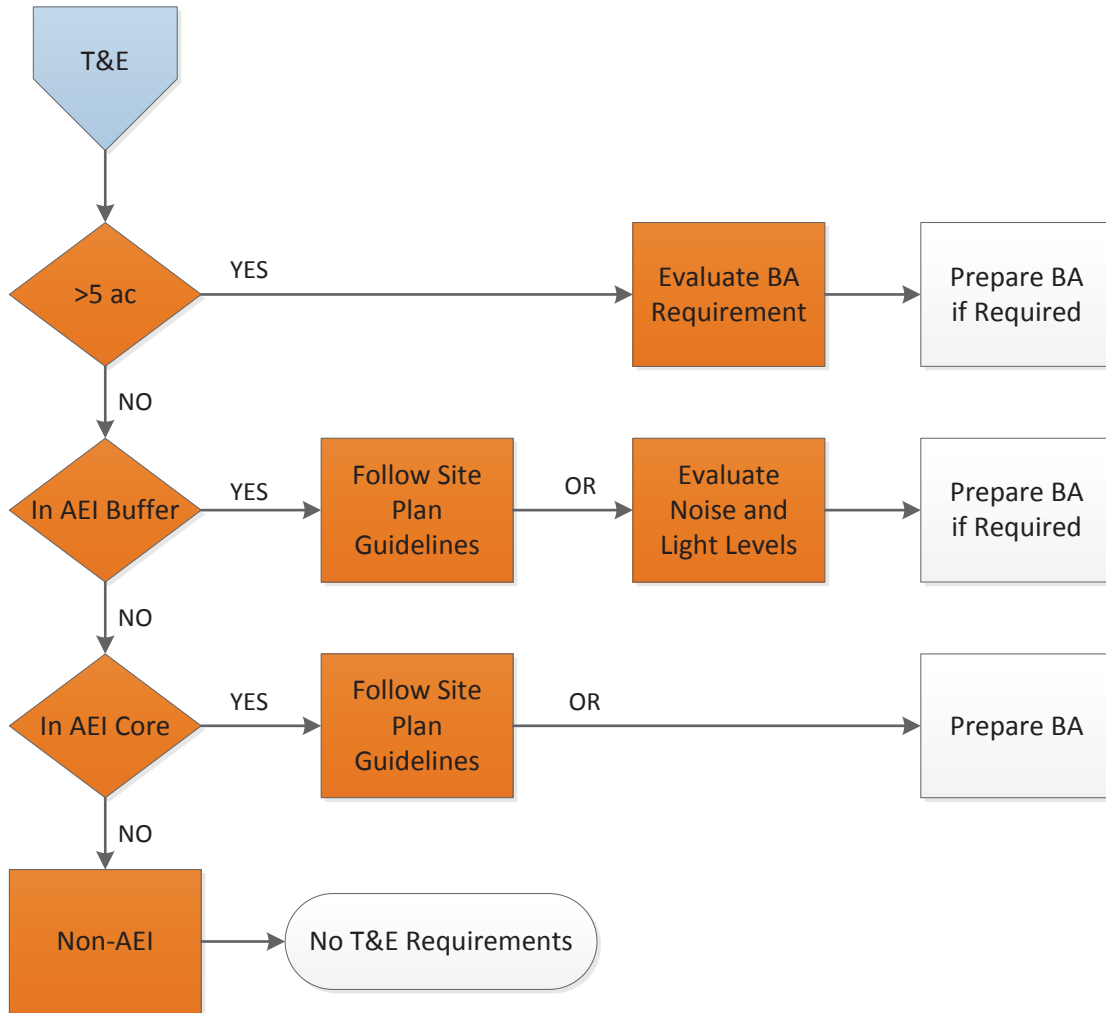


Figure 1. Process flowchart for determining site plan requirements.

## 4.2 If an Activity Does Not Meet Site Plan Guidelines

**Summary:** Activities or projects that do not meet all applicable site plan guidelines must be evaluated individually for compliance with the ESA.

If a project reviewer determines that an activity or project cannot meet the guidelines in applicable site plans, LANL biological resources SMEs evaluate that activity individually for compliance with the ESA. Results of the evaluation of potential impacts allow LANL biological resources SMEs to make recommendations to the DOE Field Office Biological Resources Program Manager



regarding the need for USFWS consultation. An evaluation may result in 1) a DOE Field Office determination that there is no possibility of adverse effects and the activity can proceed, 2) a DOE Field Office suggestion for modifications of the action to avoid adverse effects so that it can proceed, or 3) a DOE Field Office decision to prepare a biological assessment (BA) for the activity and submit it to the USFWS for concurrence. Fieldwork and preparation of a BA can take a few months with an additional 2 to 12 months for DOE Field Office review and then final USFWS concurrence.

### **4.3 Dissemination of Information**

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

## **5.0 CHANGES IN THE HMP SINCE 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.

The black-footed ferret (*Mustela nigripes*) is federally listed as endangered. However, no sightings of black-footed ferrets have been reported in Los Alamos County for more than 50 years. In addition, no large prairie dog towns, which are prime habitat for black-footed ferrets, have been observed on DOE property around LANL. Therefore, there is no site plan for this species.

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

## **6.0 DATA MANAGEMENT**

The data used in the implementation of the HMP is stored in a GIS database at LANL.

## II. AREA OF ENVIRONMENTAL INTEREST SITE PLAN FOR THE MEXICAN SPOTTED OWL

### 1.0 SPECIES DESCRIPTION—MEXICAN SPOTTED OWL

#### 1.1 Status

In 1993, the USFWS determined the Mexican Spotted Owl to be a threatened species under the authority of the ESA, as amended (58 Federal Register [FR] 14248). In 1995, the USFWS released its final recovery plan for the owl (USFWS 1995), which was revised in 2012 (USFWS 2012). The USFWS most recently designated critical habitat for Mexican Spotted Owl in 2004 (69 FR 53181).

#### 1.2 General Biology

The Mexican Spotted Owl is found in northern Arizona, southeastern Utah, and southwestern Colorado south through New Mexico, west Texas, and into Mexico. It is the only subspecies of Spotted Owl recognized in New Mexico (USFWS 1995).

The Mexican Spotted Owl generally inhabits mixed conifer and ponderosa pine (*Pinus ponderosa*; Lawson & C. Lawson) - Gambel oak (*Quercus gambelli*; Nutt.) forests in mountains and canyons. High canopy closure, high stand diversity, multilayered canopy resulting from an uneven-aged stand, large, mature trees, downed logs, snags, and stand decadence as indicated by the presence of mistletoe are characteristic of Mexican Spotted Owl habitat. Some owls have been found in second-growth forests (i.e., younger forests that have been logged); however, these areas were found to contain characteristics typical of old-growth forests. Mexican Spotted Owls in the Jemez Mountains seem to prefer cliff faces in canyons for their nest sites (Johnson and Johnson 1985). The recovery plan for the Mexican Spotted Owl recommends that mixed conifer and pine-oak woodland types on slopes greater than 40 percent be protected for the conservation of this owl.

A mated pair of adult Spotted Owls may use the same home range and general nesting areas throughout their lives. A pair of owls requires approximately 800 ha (1,976 ac) of suitable nesting and foraging habitat to ensure reproductive success. Incubation is carried out by the female. The incubation period is approximately 30 days, and most eggs hatch by the end of May. Most owlets fledge in June, 34 to 36 days after hatching (USFWS 1995). The owlets are “semi-independent” by late August or early September, although juvenile begging calls have been heard as late as September 30. Young are fully independent by early October. The non-breeding season runs from September 1 through February 28. Although seasonal movements vary among owls, most adults remain within their summer home ranges throughout the year.

The diet of Mexican Spotted Owls nesting in canyons consists primarily of woodrats (*Neotoma* spp.) and mice (*Peromyscus* spp.) with lesser amounts of rabbits, birds, reptiles, and arthropods (Willey 2013). The relative abundance of prey types in Mexican Spotted Owl pellets collected at LANL are listed in Table A-1 in the Appendix. Ganey and Balda (1994) found core areas of individuals (i.e., where owls spent 60 percent of their time) averaged 134 ha (331 ac), and core areas for pairs averaged 160 ha (395 ac).

## **1.3 Threats**

The Mexican Spotted Owl was listed as threatened because of destruction and modification of habitat caused by timber harvest and fires, increased predation on owls associated with habitat fragmentation, and a lack of adequate protective regulations.

## **2.0 IMPACT OF HUMAN ACTIVITIES**

### **2.1 Introduction**

The primary threats to Mexican Spotted Owls on DOE property around LANL property are 1) impacts to habitat quality from LANL operations and 2) disturbance of nesting owls. This section provides a review and summary of scientific knowledge of the effects of various types of human activities on the Mexican Spotted Owl and provides an overview of the current levels of activities at LANL.

### **2.2 Impacts on Habitat Quality**

#### **2.2.1 Development**

The type of habitat used by Mexican Spotted Owls, late seral stage forests with large trees, are usually not found in large quantities near developed areas or near areas that have had recent agricultural or forest product extraction land uses. Therefore, Mexican Spotted Owls are generally not found near developments. Whether it is the development itself or a lack of suitable habitat that discourages colonization of these areas by Mexican Spotted Owls is unknown.

Areas of LANL vary from remote undeveloped areas to heavily developed and/or industrialized facilities. Most LANL facilities are situated atop mesas, primarily in the northern and western portion of the DOE property. LANL is bounded by developed residential, industrial, and retail areas along its northern boundary (the town of Los Alamos) and by residential and retail development along a portion of its eastern boundary (the town of White Rock). Three major paved roads traverse LANL from northeast to southwest. Sandia, Pajarito, and Los Alamos canyons have paved roads within AEIs, and several AEIs have dirt roads along at least a portion of the canyon bottom. AEIs containing paved or dirt roads in the canyon bottoms have not been occupied at LANL (Hathcock et al. 2010).

#### **2.2.2 Ecological Risk**

There is no specific information on the impact of chemicals on the Mexican Spotted Owl, although experience with other raptor species suggests that exposure to polychlorinated biphenyls (PCBs), dichloro-diphenyl-trichloroethane (DDT) and its derivatives, and other organophosphate or organochlorine pesticides would probably be harmful. Exposure to other chemicals could also be harmful (Cain 1988).

LANL completed three ecological risk assessments that included the Mexican Spotted Owl between 1997 and 2009. The ecological risk assessment process involves using computer modeling to assess potential effects to animals from chemicals of potential concern (COPCs) that have been detected in the environment. All of the following ecological risk assessments concluded that, on average, no appreciable impact is expected to Mexican Spotted Owls from COPCs (Gallegos et al. 1997; Gonzales et al. 2004; Gonzales et al. 2009).

### **2.2.3 Disturbance**

#### **2.2.3.1 Pedestrians and Vehicles**

Based on work with other raptors, LANL biological resources SMEs assume that Mexican Spotted Owls would likely be disturbed by the approach of either pedestrians or vehicles. At an equal distance, pedestrians are frequently more disturbing to raptors than vehicles (Grubb and King 1991). Brown and Stevens (1997) reported that during surveys in Grand Canyon National Park, 22 times more Bald Eagles were found in canyon reaches with low human recreational use compared to reaches with moderate to high human recreational use. Human activity 100 m (328 ft) from Bald Eagle nests in Alaska caused clear and consistent changes in behavior of breeding eagles (Steidl and Anthony 2000).

Swarthout and Steidl (2001) found that both juvenile and adult roosting Mexican Spotted Owls were unlikely to alter their behavior in the presence of a single hiker at distances greater than 55 m (180 ft). Swarthout and Steidl (2003) concluded that cumulative effects of high levels of short-duration recreational hiking near Mexican Spotted Owl nests may be detrimental.

Many canyon bottoms and mesa tops at LANL have dirt roads traversing them. Most of these roads are gated. However, these roads are accessible to LANL employees and some of them are accessible to the public on foot or by bike. LANL biological resources SMEs have found that AEIs are occupied less often if there is recreational access into a canyon (Hathcock et al. 2010).

#### **2.2.3.2 Aircraft**

Ground-based disturbances appear to impact raptor reproductive success more than aerial disturbances (Grubb and King 1991). Grubb and Bowerman (1997) concluded that an exclusion of aircraft within 600 m (1,968 ft) of Bald Eagle nest sites would limit Bald Eagle response frequency to 19 percent.

Delaney et al. (1999) found for Mexican Spotted Owls that chainsaws consistently elicited higher response rates than helicopters at similar distances. Owl flush rates did not differ between nesting and non-nesting seasons. No owls flushed when noise stimuli (helicopter or chainsaws) were at distances greater than 105 m (344 ft). Distance was generally a better predictor of owl response to helicopter overflights than sound level.

LANL is restricted airspace, and planes infrequently fly less than 609 m (2,000 ft) above ground level. The County of Los Alamos operates an airport along the northern edge of LANL. The airport is located on the southern rim of Pueblo Canyon. Most flights approach and depart to the east of the airport, over the Rio Grande.

#### **2.2.3.3 Explosives**

There is no specific information on the reaction of Mexican Spotted Owls to explosives detonation currently available. Explosive blasts set off 120 to 140 m (393 to 459 ft) from active Prairie Falcon (*Falco mexicanus*) nests caused perched Prairie Falcons to flush from perches 79 percent of the time, and, in 26 percent of the cases, caused incubating Prairie Falcons to flush from nests. Measured sound levels at aerie entrances during blasts ranged from 129 to 141 decibel (dB) (Holthuijzen et al. 1990). Explosives blasting for dam construction 560 to 1,000 m (1,837 to 3,280 ft) from active Prairie Falcon nests caused a change in behavior 26 percent of the time, and

birds flushed in 17 percent of all cases. No incubating birds flushed (Holthuijzen et al. 1990). Brown et al. (1999) found little activity change in roosting or nesting Bald Eagles and no population-level impacts from weapons detonations at the Aberdeen Proving Ground. Holthuijzen et al. (1990) found that a 167-g (5.89-oz) charge of Kinestik produced noise levels between 138 and 141 dB at 100 m (328 ft), and that a 500-g (17.6-oz) charge of TNT produced noise levels between 144 and 146 dB at 100 m (328 ft). A 20-kg (44-lb) charge of TNT produced noise levels that measured 163 dB at 100 m (328 ft) (Paakkonen 1991).

Measurements of noise levels during explosives testing were conducted at three locations at LANL using quantities of high explosives ranging from 4.5 to 67.5 kg (10 to 148 lb) of TNT during six shots. Noise levels increased during the test from a background level of 31 dB(A)<sup>1</sup> to a range between 64 and 71 dB(A) during shots at a distance of 1.8 km (1.1 mi). At a distance of 4.3 km (2.67 mi), noise levels rose from a background range of 35 to 64 dB(A) to a range of 60 to 63 dB(A) (Vigil 1995). At a distance of 6.7 km (4.16 mi), noise levels rose from a background range of 38 to 51 dB(A) to a range of 60 to 71 dB(A) (Burns 1995). LANL biological resources SMEs estimated that the noise from a shot at the Dual-Axis Radiographic Hydrodynamic Test (DARHT) Facility would be 150 dB(A) at the source and 80 dB(A) at 400 m (1,312 ft) (Keller and Risberg 1995). LANL biological resources SMEs found that Mexican Spotted Owl AEIs located within the explosives testing buffer area were occupied more frequently than AEIs in other locations (Hathcock et al. 2010). This is likely due to the strict access control in explosives areas which limit human activity and development in the canyon bottoms.

#### **2.2.3.4 Other Sources of Noise**

Major noise-producing activities at LANL include automobile and truck traffic and noise associated with office buildings, construction activities, a live-fire range, and explosives testing. Also, there is noise associated with aircraft traffic at the Los Alamos County airport. Construction and maintenance activities involved with operations at LANL are fairly common. In addition, implementation of the 2005 Compliance Order on Consent (NMED 2005) issued by the New Mexico Environmental Department (NMED) has resulted in an increased frequency of drilling groundwater monitoring wells in protected habitat at LANL. Also, forest fuels management operations use chainsaws, chippers, and other noise-generating equipment. The 2010 National Pollutant Discharge Elimination System (NPDES) Individual Permit (EPA 2010) issued by the Environmental Protection Agency (EPA) requires sediment control features such as berms and small rock check dams to be installed at various sites with stormwater runoff; these are sometimes installed in protected habitat. LANL biological resources SMEs conducted a study of noise levels in canyons and found that the primary sources of noise exceeding 55 dB(A) were cars and trucks. Readings taken near flowing water were up to 11 dB(A) higher than readings taken elsewhere. The average dB(A) in canyons near paved roads ranged from 41 to 62, with maximum values ranging from 62 to 74. Away from paved roads 1.6 km (1 mi) or more, average dB(A) in canyons ranged from 37 to 50, with all but one average below 45. Maximum dB(A) away from paved roads ranged from 38 to 76 [76 dB(A) was measured during a thunder clap] (Huchton et al. 1997).

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<sup>1</sup> Sound can be measured as decibels (dB), C-weighted dB [dB(C)], or A-weighted dB [dB(A)]. The dB(A) measurement best resembles the response of the human ear by filtering out lower and higher frequency sound not normally heard by the human ear.



Noise measurements were conducted by LANL biological resources SMEs at the Los Alamos County airport and in Bayo and Pueblo canyons, including the Los Alamos County Sewage Treatment Facility, in December 1997. Sound levels near the airport runway during the maximum use time (6:30 to 7:30 am) had background values averaging 54 dB(A). Noise during plane arrivals ranged from 47 to 63 dB(A). No measurements were collected during plane take-off. Sound measurements conducted in the bottoms of Pueblo and Bayo canyons ranged from 37 to 40 dB(A) in most areas of the canyon. At the sewage treatment facility parking lot during a working day, the average dB(A) during a three-minute period was 46 (range 45 to 49). At the intersection of the road going into Pueblo Canyon with State Road 502, the average dB(A) during a three-minute period was 60 (range 41 to 70).

LANL biological resources SMEs conducted sound measurements at successive distances from an industrial area near a canyon rim, into the canyon, and to the opposite rim, using a C-weighted decibel scale (Keller and Foxx 1997). Measurements of noise levels using the C-weighted decibel scale are greater than if measured using A-weighted decibels. The average background noise on the mesa was 65.8 dB(C) [with a range of 43–81 dB(C)]. The average background noise in the canyon bottom was 62.3 dB(C) [with a range of 54–78 dB(C)]. The average background noise at the bottom of the north-facing slope was 53.8 dB(C) [with a range of 48–64 dB(C)]. Measurements were taken mid-day.

LANL biological resources SMEs measured sound levels from various pieces of construction equipment used at project sites at LANL over 5-minute intervals at distances of 6 to 31 m (20 to 100 ft) (Knight and Vrooman 1999). Average values ranged from 58.5 dB(A) to 80.9 dB(A). Peak values ranged from 75.7 to 155.4 dB(A). Additional data were collected by other LANL operators on specific pieces of construction equipment and on the Security Computer Complex construction site fence perimeter at Technical Area 3 before and during construction (Knight and Vrooman 1999). The average noise levels before construction began was 56.6 dB(A), and the average during construction was 82.1 dB(A).

LANL biological resources SMEs conducted a series of sound measurements at LANL to investigate background noise levels around AEIs (Vrooman et al. 2000). Background noise levels were significantly higher in daytime than in nighttime. AEIs with greater than 10 percent developed area in their buffers had significantly higher levels of background noise than undeveloped AEIs. Mean background sound levels were 51.3 dB(A) in developed AEIs and 39.6 dB(A) in undeveloped AEIs. The LANL biological resources project review process uses the individual AEI background measurements from Vrooman et al. (2000) to screen project activities for increases more than 6 dB(A) above background.

LANL biological resources SMEs took sound level measurements of heavy equipment use associated with concrete recycling on Sigma Mesa at LANL in 2004 (Hansen 2004). At this location, background noise levels at two different locations were 55.2 and 58.8 dB(A). Operation of a dump truck hauling and dumping concrete increased noise levels above background by a mean of 22.7 dB(A) at 30 m (98 ft) and 2.4 dB(A) at 80 m (262 ft). Additional sound level measurements were taken in the same general area on Sigma Mesa in 2005 as part of a BA for the operation of an asphalt batch plant (Hansen 2005). Measurements were taken on the north rim of Mortandad Canyon (south of the asphalt batch plant at distances of approximately 30 to 122 m (100 to 400 ft), at the bottom of Mortandad Canyon, approximately 183 to 244 m (600 to 800 ft) from the asphalt

batch plant, and on the south rim of Mortandad Canyon approximately 305 m (1,000 ft) from the asphalt batch plant. Background noise levels at the various locations ranged from 41.1 to 48.7 dB(A). The only locations with increases greater than 3 dB(A) during operation of the asphalt batch plant were the locations on the north rim of Mortandad Canyon, within 122 m (400 ft) of the asphalt batch plant. Noise from the operation of the asphalt batch plant was not detected in the bottom of Mortandad Canyon or on the south rim.

LANL biological resources SMEs took sound level measurements around the LANL Biosafety Level 3 (BSL-3) Laboratory with the heating, ventilation, and air conditioning (HVAC) system on and with it off (Hansen 2009). The area to the north of the BSL-3 is developed, the area to the south is not. Background noise levels north of the facility ranged from 53.6 to 57.6 dB(A). Background noise levels south of the facility ranged from 41.6 to 49.7 dB(A). Noise from the HVAC system was detected at 25 m (82 ft) from the facility on both sides, but was not detected at 81 m (266 ft) on the north side, or at 107 m (351 ft) on the south side.

Overall, these studies appear to show that areas adjacent to or within developed areas or paved roads are likely to have daytime average background noise levels between 45 and 63 dB(A). Less disturbed areas are likely to have average background noise levels between 37 and 50 dB(A).

#### **2.2.3.5 Artificially Produced Light**

There is no information available on the effects of artificially produced light on Mexican Spotted Owls. Under the Los Alamos County Code, commercial site development plans are reviewed to ensure that lighting serves the intended use of the site while minimizing adverse impacts to adjacent residential property (Section 16-276). Section 16-276 of the County Code includes light source measurement limitations by zoning district. The code allows off-site light to be 0.5 foot candles (fc) in residential areas. By comparison, full moonlight measures 0.1 fc, and a crescent moon was measured at 0.01 fc. Table A-2 in the Appendix presents preliminary light measurements in fc.

Preliminary surveys were conducted for light levels within Los Alamos Canyon at the Omega Reactor (Keller and Foxx 1997). The Omega Reactor was brightly lit for purposes of security; therefore, total light intensity was greater than the average street lighting. Measurements were conducted at a light pole with an open parking lot at the reactor as the source. Trees did not obscure the area. Using the relationship of light intensity reducing as a square of the distance, calculations using the field data indicated that at 30 m (98 ft) from the source the light levels would be equivalent or nearly equivalent to full moonlight.

### **3.0 AEI GENERAL DESCRIPTION FOR MEXICAN SPOTTED OWL**

An AEI consists of two areas—a core and a buffer. The core of the habitat is defined as suitable canyon habitat from rim to rim and 100 m (328 ft) out from the top of the canyon rim. The buffer area is 400 m (1,312 ft) wide extending outward from the edge of the core area. Although adult Mexican Spotted Owls may be found within their home range anytime throughout the year, the primary threat from disturbance to the owls is during the breeding season when owl pairs are tied to their nest sites. Therefore, management of disturbance in Mexican Spotted Owl AEIs is concentrated on the breeding season.



### **3.1 Method for Identifying a Mexican Spotted Owl AEI**

The original location of each Mexican Spotted Owl AEI was identified using a habitat model developed by Johnson (1998) that classified nesting and roosting habitat for Mexican Spotted Owls using topographic characteristics and vegetative diversity. LANL biological resources SMEs compared the results from the Johnson (1998) model to a different model identifying slopes >40 percent in mixed conifer and ponderosa pine cover types at LANL. Areas identified from the Johnson (1998) model application to LANL that were over five contiguous 30 × 30 m (97 × 98 ft) pixels in size, were above 1,980 m (6,496 ft) in elevation, and that had mixed conifer or ponderosa pine forest cover, were considered suitable Mexican Spotted Owl habitat. Where suitable habitat was identified, AEI core area boundaries were established to include the canyons and 100 m (328 ft) outward from the canyon rims.

A new Mexican Spotted Owl habitat model was developed and refined for application on LANL following the Cerro Grande wildfire (Hathcock and Haarmann 2008). This model incorporated finer-scale vegetation characteristics into the Mexican Spotted Owl habitat quality assessment. This model was used to redelineate the boundaries of the Mexican Spotted Owl AEIs at LANL in 2005 following wildfire, drought, and a regional bark beetle outbreak (USFWS consultation number 22420-2006-I-0010).

The new core boundaries were delineated with an area approximately 0.4 km (0.25 mi) from the edge of the nearest suitable habitat, up and down canyon. Core boundaries were established along readily recognizable geologic features or anthropogenic features in the terrain wherever possible to facilitate the ease of identification of core boundaries when in the field.

### **3.2 Location and Number of Mexican Spotted Owl AEIs**

There are currently five Mexican Spotted Owl AEIs on LANL, each encompassing one or more canyons. In general, the AEI cores are centered in canyons on the western side of LANL. The canyons with AEIs are Cañon de Valle, Water, Pajarito, Los Alamos, Sandia, Mortandad, and Three-Mile. AEI boundaries are maintained in the LANL biological resources program GIS database.

## **4.0 AEI MANAGEMENT**

### **4.1 Overview**

This AEI management section provides guidelines for LANL operations to reduce or eliminate the threats to Mexican Spotted Owls from 1) habitat alterations that reduce habitat quality and 2) disturbance of breeding or potentially breeding owls. Habitat alterations are considered for all AEIs and for both core and buffer areas. Disturbance activities to owls are considered only for occupied AEIs and only for impacts on core areas. Developed areas (see Part I, Section 3.1) that have ongoing baseline levels of activities and are not suitable habitat for Mexican Spotted Owls have different restrictions than undeveloped core or buffer areas. Therefore, the location of the disturbance activity within the AEI, the occupancy status of the AEI, and the type of activity all affect whether or not the activity is allowable. AEIs for different species may overlap, and an activity must meet the guidelines of all applicable site plans to be allowable.

## 4.2 Definition and Role of Occupancy in AEI Management

**Summary:** The occupancy status of an AEI affects what disturbance activities are allowable in different areas (core, buffer, developed) of the AEI. All Mexican Spotted Owl AEIs are considered occupied during March 1 through August 31 or until surveys show the AEI to be unoccupied. See the Activity Table (Table 1, Section 4.5.2) for restrictions on occupied undeveloped core and buffer areas, and Part I, Section 3.1 for restrictions on developed areas.

Occupancy simply refers to whether or not an AEI is occupied during a species' period of sensitivity. For Mexican Spotted Owls, LANL is primarily concerned with protecting the owls from disturbance during the breeding season. Because individuals may colonize suitable habitat, all Mexican Spotted Owl AEIs are treated as though they are occupied from March 1 through August 31 or until surveys show an AEI to be unoccupied. Mexican Spotted Owl surveys are conducted from late March through June. In general, surveys in areas with ongoing or proposed projects are completed by May 15. If a nest is located during surveys, then the AEI can be treated as unoccupied except for the area within a 400 m (1,312 ft) radius of the nest site. Because owls are not as sensitive to disturbance during the non-breeding season, Mexican Spotted Owl AEIs are treated as unoccupied from September 1 to February 28.

The occupancy status of an AEI affects what activities are allowable in the AEI. Although activities causing habitat alterations are restricted in all AEIs, disturbance activities are restricted only in occupied AEIs. The Activity Table (Table 1, Section 4.5.2) provides dates and levels of allowable disturbance activities within occupied Mexican Spotted Owl AEIs under the guidelines of this site plan. Contact a LANL biological resources SME to find out the current occupancy status of an AEI (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

## 4.3 Introduction to AEI Management Guidelines

**Summary:** The habitat alterations section and the activities section give the guidelines for habitat alteration and disturbance activities, respectively, for Mexican Spotted Owl AEIs. The flow chart (see Figure 1) provides a quick reference to determine what, if any, guidelines need to be consulted for a specific activity. Protective measures give management practices that should be applied when working or considering work in AEIs. LANL biological resources SMEs are available to answer questions and provide advice (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

Sections 4.4 and 4.5 provide the guidelines for habitat alterations and allowable activities in AEI core and buffer areas. Section 4.4 describes what and where habitat alterations are allowed under the guidelines of this site plan. Section 4.5 describes what, when, and where disturbance activities are allowed in occupied AEIs under the guidelines of this site plan. If an activity does not meet the restrictions given in the guidelines, the activity must be individually reviewed for ESA compliance. This site plan only provides guidelines for Mexican Spotted Owl AEIs. If an activity is desired in an area with overlapping AEIs, all applicable site plans must be consulted. AEI maps show the location of all AEIs in an area. Section 4.6 describes management practices that should be applied when working or considering work in an AEI. LANL biological resources SMEs are available to answer questions and provide advice (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

## **4.4 Definition of and Restrictions on Habitat Alterations**

### **4.4.1 Definition of Habitat Alterations**

Habitat alteration includes any action that alters the soil structure, vegetative components necessary to the species, prey quality and quantity, water quality, hydrology, or noise or light levels in undeveloped areas of an AEI. Long-term means the alteration lasts for more than one year. For physical disturbances, in general, any activity that can be accomplished by one person with a hand tool is generally not considered habitat alteration; any activity that requires mechanized equipment on a landscape is habitat alteration. An actual activity may take place outside of the AEI and will be considered habitat alteration if consequences of the activity have effects inside the AEI core.

The habitat components most important to Mexican Spotted Owls include vegetative structure, food quality and quantity, and disturbance levels, including noise and light. The forest structure within a canyon designated as a Mexican Spotted Owl AEI is important because it provides roost sites and a suitable habitat for nesting and foraging. Trees along the canyon rim are used for foraging and territorial calling, and they shelter the canyon interior from light and noise disturbances.

A long-term change in light or noise levels within the undeveloped core of an AEI is considered to be a habitat alteration if it increases average noise levels by  $\geq 6$  dB(A) during any portion of the 24-hour day, or it increases average light levels by  $\geq 0.05$  fc at night. Changes in noise and light levels are measured at the core area boundary if the source is outside the core area, or at 10 m (33 ft) from the source if the source is inside the undeveloped core area. Impacts of changes in developed areas on undeveloped cores are measured at the developed area boundary if it is within the core, or at the core area boundary if the developed area is outside of the core.

### **4.4.2 Fuels Management Practices to Reduce Wildfire Risk**

The recovery plan for the Mexican Spotted Owl lists stand-replacing wildfires as a primary threat to their habitat and encourages land managers to reduce fuel levels and abate fire risks in ways compatible with owl presence on the landscape (USFWS 1995). Within undeveloped core areas, on slopes  $>40$  percent, in the bottoms of steep canyons, and within 30 m (100 ft) of a canyon rim, thinning of trees  $<22$  cm (9 in) diameter at breast height, treatment of fuels, and prescribed and natural prescribed fires are allowed. Exceptions allowing trees  $>22$  cm (9 in) to be thinned within 30 m (100 ft) of buildings are granted to protect facilities. Large logs ( $>30$  cm [11.8 in] midpoint diameter) and snags should be retained. Thinning within core areas not meeting the characteristics listed above, and in buffer areas, may include trees of any size to achieve 8 m (25 ft) spacing between tree crowns. However, clear cutting is not allowed in undeveloped core areas.

For health and safety reasons, any trees within 30 m (100 ft) of buildings, but outside a developed area, may be thinned to achieve 8 m (25 ft) spacing between crowns. Habitat alterations including thinning are not restricted in developed areas. However, LANL biological resources SMEs encourage the retention of trees and snags along canyon rims if the rim is in a developed area. Because of the extreme fire danger associated with firing sites and the potential impact of a fire on Mexican Spotted Owl habitat, firing sites and burn areas are treated separately for the purposes of fuels management. Trees within 380 m (1,246 ft) of firing sites and burn areas in both core and

buffer areas may be thinned to a 15 m (49 ft) spacing between trees everywhere except on slopes >40 percent or in the bottoms of steep canyons. Any tree over 22 cm (9 in) diameter at breast height within 380 m (1,246 ft) of a firing site may be delimbed to a height of 2 m (6 ft) to help prevent crown fires.

In historically occupied core areas, fuels treatment may not exceed 10 percent of the undeveloped core area and is not allowed within 400 m (1,312 ft) of nesting areas. In occupied core areas, forest management activities must take place during the nonbreeding season (September 1 to February 28) (USFWS 1995). Fuels management activities that are allowable in core areas have to be reported to LANL biological resources SMEs for tracking.

#### **4.4.3 Utility Corridors**

Habitat alterations such as cutting down trees that threaten power lines are allowed within 8 m (26 ft) of either side of an existing utility line in all areas of an AEI (Trujillo and Racine 1995). New utility lines and utility lines requiring clearance of a right-of-way greater than 16 m (52 ft) total must be individually reviewed for ESA compliance. Disturbance activities must follow the guidelines given in the Activities Table (Table 1, Section 4.5.2) for occupied AEIs.

#### **4.4.4 Restrictions on Habitat Alterations**

**Summary:** Habitat alterations other than fuels management practices and utility corridor maintenance are not allowed in undeveloped core areas. Habitat alterations in buffer areas are restricted to 2 ha (5 ac) per project, with a maximum cap on development in the buffer for each AEI. Habitat alterations other than fuels management and utility corridor maintenance must be reported to LANL biological resources SMEs for tracking (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

Habitat alterations other than the fuels management practices and utility corridor maintenance described above are not allowed in undeveloped core areas under the guidelines of this site plan. If a project or activity is planned that would alter habitat in an undeveloped core area, it must be individually evaluated for ESA compliance. Habitat alterations in undeveloped buffer areas other than the fuels management activities and utility corridor maintenance described above are restricted to 2 ha (5 ac) in area per project and are subject to other restrictions including light and noise effects in the core (see Section 2.2.3). Projects in the buffer over 2 ha (5 ac) in size will require individual ESA compliance review.

Habitat alterations in a buffer area other than the fuels management and utility corridor maintenance described above must be reported to LANL's biological resources SMEs for tracking (<http://int.lanl.gov/environment/bio/controls/index.shtml>). There is a cumulative maximum area that can be developed in each AEI's buffer. Once that cumulative area is reached, all habitat alterations in a buffer will require individual ESA reviews for compliance.

### **4.5 Definition of and Restrictions on Disturbance Activities**

#### **4.5.1 Definitions of Disturbance Activities**

LANL biological resources SMEs considered six categories of activities that might cause disturbance in an AEI. Most of the categories were first identified in the document "Peregrine

Falcon Habitat Management in the National Forests of New Mexico,” prepared for the United States Forest Service (Johnson 1994). LANL biological resources SMEs added explosives detonation, other light production, and other noise production to provide the most comprehensive list of activities possible, thereby reducing the need for individual review of activities for ESA compliance. The categories of activities are people, vehicles, aircraft, other light production, other noise production, and explosives detonation. LANL biological resources SMEs have defined low, medium, and high levels of impact for these activities except for explosives detonation. Activity levels for explosives detonation have been designed to follow the guidelines agreed upon by LANL, DOE, and USFWS in the DARHT BA (Keller and Risberg 1995). Restrictions on explosives detonation are described in the definition of the activity, but are not included in the Activity Table (Table 1, Section 4.5.2). These six categories of activities are restricted only in AEIs that are classified as occupied.

**People**—includes any entry of people into an AEI on foot.

- Low impact is the presence of three or fewer people per project and duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of people or the duration criteria.
- High impact is the exceedance of both the number of people and the duration criteria.

**Vehicles**—includes the entry of any two-axle highway vehicle, all-terrain vehicle, or motorized machinery into an AEI by any route other than a paved road or an improved gravel road.

- Low impact is the presence of two or fewer vehicles per project and duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of vehicles or the duration criteria.
- High impact is the exceedance of both the number of vehicles and the duration criteria.

**Aircraft**—includes the operation of any aircraft below an elevation of 600 m (2,000 ft) above the highest ground level in the local vicinity.

- Low impact is the presence of one single-engine airplane and the duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of aircraft or the duration criteria.
- High impact is the exceedance of both the number of aircraft and the duration criteria.

Any use of helicopters, jet airplanes, and propeller airplanes with two or more engines is classified as medium impact or above, depending on duration.

**Other Light Production**—includes any activity not previously listed that causes additional light to occur in an AEI core area. For example, plans for construction of a new building at the edge of a developed area may call for lighting at night to facilitate nighttime work that impacts an undeveloped core area.



- Low impact is the increase of light intensity by  $\leq 0.05$  fc and a duration of one night or less per project per breeding season.
- Medium impact is the exceedance of either the intensity or duration criteria.
- High impact is the exceedance of both the intensity and duration criteria.

Measurements for increases in light are taken at the AEI core area boundary closest to the light source if the source is outside the core and at 10 m (33 ft) from the source if the source is inside the core. Light measurements for developed areas are taken at the edge of the developed area if the developed area is within an AEI core or at the closest core boundary if the developed area is outside of an AEI core.

**Other Noise Production**—includes any activity not previously listed except for explosives detonation that causes additional noise to occur in an AEI. For example, operation of machinery creates noise.

- Low impact is increasing noise levels in an AEI core by 6 dB(A) or less for one day or less per project per breeding season.
- Medium impact is the exceedance of either the level or the duration criteria.
- High impact is the exceedance of both the level and the duration criteria.

Measurements for increases in noise are taken at the AEI core boundary closest to the noise source if the source is outside the core and at 10 m (33 ft) from the source if the source is inside the core. Noise measurements for developed areas are taken at the edge of the developed area if the developed area is within an AEI core or at the closest core boundary if the developed area is outside of an AEI core.

**Explosives Detonation**—includes the use of high explosives for any purpose. LANL biological resources SMEs did not define low, medium, and high levels of this activity because of the difficulty of determining levels for a shot before actually doing the shot. For the purpose of explosives detonation near Mexican Spotted Owl AEIs, occupied habitat is defined as the area within 400 m (1,312 ft) of the current year's nest/roost sites or the previous year's nest site if a current site has not been identified. No explosives detonation will take place within 400 m (1,312 ft) of nest/roost sites in occupied habitat between March 1 and August 31. Explosives detonation at night at sites within 400 to 800 m (1,312 to 2,624 ft) of a nest site in occupied habitat is restricted to once a month from March 1 and August 31. There are no restrictions on daytime explosives testing between 400 and 800 m (1,312 to 2,624 ft). There are no restrictions between September 1 and February 28 or in unoccupied habitat. Explosives detonation adjacent to AEIs that have not previously been recorded by LANL as occupied will have no restrictions unless surveys detect Mexican Spotted Owls. Explosives tests not allowed under the guidelines of this site plan must be individually reviewed for ESA compliance.

#### **4.5.2 Activity Table**

The dates shown in the Activity Table (Table 1) are the dates between which the activity in the row is restricted under the guidelines of this site plan. All AEIs are considered occupied from March 1 to August 31 or until surveys show an AEI to be unoccupied. If owls are detected, AEIs

are considered occupied until August 31 within 400 m (1,312 ft) of the nest site. Consult with LANL biological resources SMEs to find out occupancy status of AEIs and what locations are within 400 m (1,312 ft) of nest sites (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

**Table 1. Restrictions on Activities in Undeveloped Occupied Mexican Spotted Owl AEIs**

	Core	Buffer
<i>People</i>		
Low	No Restrictions*	No Restrictions
Medium	March 1 to August 31	No Restrictions
High	March 1 to August 31	No Restrictions
<i>Vehicles</i>		
Low	No Restrictions	No Restrictions
Medium	March 1 to August 31	No Restrictions
High	March 1 to August 31	No Restrictions
<i>Aircraft</i>		
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
<i>Other Light Production</i>		
Low	March 1 to August 31	No Restrictions**
Medium	March 1 to August 31	No Restrictions**
High	March 1 to August 31	No Restrictions**
<i>Other Noise Production</i>		
Low	March 1 to August 31	No Restrictions**
Medium	March 1 to August 31	No Restrictions**
High	March 1 to August 31	No Restrictions**
<i>Explosives Detonation (see text in Section 4.5.1)</i>		

\*Entry is restricted in core areas that are occupied within 400 m (1,312 ft) of the nest site from March 1 to August 31. If the current nest has not been located, entry is restricted within 400 m (1,312 ft) of the previous year's nest site.

\*\*Noise or light production in the buffer is restricted if the activity would violate core area restrictions on noise or light.

## 4.6 Protective Measures

**Summary:** This section provides a list of management practices to apply in Mexican Spotted Owl AEIs.

- Timing of projects must take into account that projects in core areas or projects that violate restrictions for occupied buffer areas must stop on February 28 each year until occupancy status of the AEI is determined.
- Every reasonable effort should be made to reduce the noise from explosives testing within 800 m (2,624 ft) of occupied habitat. Methods to reduce noise could include contained shots, noise shields in the direction of AEI cores, etc. For night shots, every reasonable effort should be made to limit the amount of light directed into AEI core areas.



- Put signs on dirt roads and trails leading into AEIs labeling them as restricted access areas and providing a number to contact for access restrictions.
- Keep disturbance and noise to a minimum.
- Avoid unnecessary disturbance to vegetation (e.g., excessive parking areas or equipment storage areas, off-road travel, materials storage areas, crossing of streams or washes).
- Avoid removal of vegetation along drainage systems and stream channels.
- Avoid all vegetation removals not absolutely necessary.
- Appropriate erosion and runoff controls should be employed to reduce soil loss. The controls must be put in place and periodically checked throughout the life of projects.
- All exposed soils must be revegetated as soon as feasible after construction to minimize erosion.
- In the Los Alamos Canyon AEI, development should be focused away from undeveloped areas on the western end of the AEI.

## 5.0 LEVELS OF DEVELOPMENT IN AEI CORE AND BUFFERS

### 5.1 Allowable Habitat Alteration in the Buffer Areas

The following quantifications of development and guidance for allowable habitat alteration in buffer areas were published and consulted on in the 1999 version of the HMP. Most AEIs changed in dimensions during the 2005 redelination of the habitats, and many have experienced additional development. Development in buffer habitat was not addressed during the 2005 consultation. Many projects were reviewed and received USFWS concurrence between 1999 and 2014.

LANL biological resources SMEs have provided the current development status for each of the AEIs at the end of each paragraph. The percent developed numbers were derived with the original size of the AEIs.

***Cañon de Valle***—In 1999, 16.3 ha (40.3 ac, 2.9 percent) of the core was developed and 52.2 ha (129 ac, 6.8 percent) of the DOE-controlled buffer was developed. For this AEI, it was recommended that only an additional 25.30 ha (62.5 ac) of the AEI buffer be developed. The 1999 HMP stated that once this cap is reached or a large-scale project is proposed, additional consultation with USFWS would be required. By 2011, 28 ha (69.2 ac) of the core and 84 ha (207.5 ac) of the buffer had been developed.

***Pajarito***—In 1999, there were 6.7 ha (16.5 ac, 5.5 percent) of the core developed and 75.1 ha (186.5 ac, 16.7percent) developed in the buffer. LANL biological resources SMEs recommended only an additional 35 ha (86.4 ac) of the buffer be developed before additional USFWS consultations take place. The 1999 HMP stated that once the cap is reached or a single large-scale project is proposed, additional consultation would be required. By 2011, 27 ha (66.7 ac) of the core and 89 ha (220 ac) of the buffer had been developed.

***Los Alamos***—In 1999, there were 77.16 ha (190 ac) of the core developed and 167.2 ha (413.1 ac) developed in the buffer. For this AEI, LANL biological resources SMEs recommended only an

additional 28.6 ha (70.6 ac, 5.9 percent) of the DOE-owned buffer be developed before additional USFWS consultations take place.

Because this AEI is so heavily developed, additional development was restricted to a few selected areas within the buffer. Development outside of these areas requires individual review for ESA compliance. A large percentage of this AEI was removed in the 2005 and 2013 BAs. By 2011, 94 ha (232.2 ac) of the core and 181 ha (447.3 ac) of the buffer had been developed.

***Sandia-Mortandad***—In 1999, 98.4 ha (243.2 ac) of this AEI on DOE lands were developed, including 29 ha (71.7 ac, 10.7 percent) of the core and 75.1 ha (185.6 ac, 16.7 percent) of the buffer. For this AEI, LANL biological resources SMEs recommended only an additional 38.1 ha (94.1 ac) of the buffer be developed before additional USFWS consultations take place. Once this cap is reached or a single large-scale project is proposed, additional consultation will be required. By 2011, 45 ha (111.2 ac) of the core and 83 ha (205.1 ac) of the buffer had been developed.

***Three Mile***—In 1999, 25.3 ha (62.5 ac) of this AEI on DOE lands were developed, including 3.8 ha (9.4 ac, 2.8 percent) of the core and 21.5 ha (51.1 ac, 7.3 percent) of the buffer. For this AEI, LANL biological resources SMEs recommended only 64.3 ha (158.8 ac) additional area of buffer be developed before additional USFWS consultations take place. Once this cap is reached or a single large-scale project is proposed, additional consultation will be required. By 2011, 12 ha (29.6 ac) of the core and 37 ha (91.4 ac) of the buffer had been developed.

### **III. AREA OF ENVIRONMENTAL INTEREST SITE PLAN FOR THE SOUTHWESTERN WILLOW FLYCATCHER**

#### **1.0 SPECIES DESCRIPTION—SOUTHWESTERN WILLOW FLYCATCHER**

##### **1.1 Status**

In 1995, the USFWS designated the Southwestern Willow Flycatcher as a federally endangered species (60 FR 10693). The USFWS most recently designated critical habitat for the Southwestern Willow Flycatcher in 2005 (70 FR 60885). The most recent recovery plan was published for Southwestern Willow Flycatcher in 2002 (USFWS 2002).

##### **1.2 General Biology**

The Southwestern Willow Flycatcher is one of four subspecies of the Willow Flycatcher. The historic range of the Southwestern Willow Flycatcher included Arizona, California, Colorado, New Mexico, Texas, Utah, and Mexico. Currently, this flycatcher breeds in riparian habitats from southern California to Arizona and New Mexico, plus southern Colorado, Utah, Nevada, and far western Texas. In winter it is found in southern Mexico, Central America, and northern South America (USFWS 2002).

Southwestern Willow Flycatchers are present in New Mexico from early May through mid-September and breed from late May through late July (Finch and Kelly 1999; USFWS 2002; Yong and Finch 1997). The flycatcher's nesting cycle is approximately 28 days. Three or four eggs are laid at one-day intervals, and incubation begins when the clutch is complete. The female incubates eggs for approximately 12 days, and the young fledge about 13 days after hatching.

Southwestern Willow Flycatchers typically raise one brood per year (USFWS 2002). Because arrival dates vary, northbound migrant Willow Flycatchers (of all subspecies) pass through areas where Southwestern Willow Flycatchers have already begun nesting. Similarly, southbound migrants (of all subspecies) in late July and August may occur where Southwestern Willow Flycatchers are still breeding. Therefore, it is only during a short period of the breeding season (approximately June 15 through July 20) that one can assume that a Willow Flycatcher seen within Southwestern Willow Flycatcher range is probably of that subspecies (USFWS 2002).

The Southwestern Willow Flycatcher only nests along rivers, streams, and other wetlands. It is found in close association with dense stands of willows (*Salix* spp.), arrowweed (*Pluchea* spp.), buttonbush (*Cephalanthus* spp.), tamarisk (*Tamarix* spp.), Russian olive (*Eleagnus angustifolia* L.), and other riparian vegetation, often with a scattered overstory of cottonwood (*Populus* spp.) (USFWS 2002). The size of vegetation patches or habitat mosaics used by Southwestern Willow Flycatchers varies considerably and ranges from as small as 0.8 ha (1.9 ac) to several hundred hectares (Hatten and Paradzick 2003). The Southwestern Willow Flycatcher nests in thickets of trees and shrubs approximately 2 to 15 m (6 to 49 ft) tall, with a high percentage of canopy cover and dense foliage from 0 to 4 m (0 to 13 ft) above ground. Regardless of the plant species composition or height, occupied sites always have dense vegetation in the patch interior (Allison et al. 2003; USFWS 2002).

The Southwestern Willow Flycatcher is an insectivore. It forages within and occasionally above dense riparian vegetation, taking insects on the wing and gleaning them from foliage. The flycatcher's prey includes flies, bees, wasps, ants, beetles, moths, butterflies, grasshoppers, crickets, dragonflies, damselflies, and spiders (Durst et al. 2008; Wiesenborn and Heydon 2007).

### **1.3 Threats**

The current population of Southwestern Willow Flycatchers in the United States is estimated at 1,214 territories (Durst et al. 2006). The distribution of breeding groups is highly fragmented, with groups often separated by considerable distances. This subspecies has suffered declines attributed to extensive loss of its cottonwood-willow habitat and to poor productivity resulting from brood parasitism by Brown-headed Cowbirds (*Molothrus ater*) (USFWS 2002).

## **2.0 IMPACT OF HUMAN ACTIVITIES**

### **2.1 Introduction**

The primary threats to the Southwestern Willow Flycatcher on LANL property are 1) impacts on habitat quality from LANL operations and 2) disturbance of nesting flycatchers. This section includes a review and summary of the known effects of various types of human activities to the Southwestern Willow Flycatcher and an overview of the current levels of activities at LANL within species habitat.

### **2.2 Impacts on Habitat Quality**

#### **2.2.1 Development**

Throughout the Southwest, riparian habitats are rare and tend to be small and separated by vast expanses of arid lands. The Southwestern Willow Flycatcher has experienced extensive loss and

modification of its habitat resulting from urban and agricultural development, water diversion and impoundment, channelization of waterways, livestock grazing, off-road vehicle and other recreational uses, and hydrological changes resulting from these and other land uses (USFWS 2002). River and stream impoundments, groundwater pumping, and overuse of riparian areas have altered as much as 90 percent of the Southwestern Willow Flycatcher's habitat (USFWS 2002). Loss of cottonwood-willow riparian forests has had widespread impact on the distribution and abundance of bird species associated with that forest. Development itself may be tolerated if the habitat is left intact.

Because watercourses at LANL tend to be intermittent to ephemeral, riparian habitat is uncommon. There has been extensive degradation of the riparian zone along the Rio Grande caused by feral cattle grazing and flood control operations of Cochiti Lake. There are other riparian/wetland areas on LANL associated with canyon bottoms, the most significant one being Pajarito wetlands in the lower end of Pajarito Canyon. A major paved road traverses the wetlands area in Pajarito Canyon.

### **2.2.2 Ecological Risk**

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

#### **2.2.2.1 Ecorisk Assessment**

LANL completed two ecological risk assessments that included the Southwestern Willow Flycatcher between 1997 and 2009. The ecological risk assessment process involves using computer modeling to assess potential effects to animals from COPCs that have been detected in the environment. The ecological risk assessments concluded that, in general, there is a small potential for effects to Southwestern Willow Flycatcher from COPCs (Gonzales et al. 1998; Gonzales et al. 2009).

An ecotoxicological risk assessment for the Southwestern Willow Flycatcher, centered on the Pajarito wetlands, found that between 7 and 16 percent of 100 hypothetical nest sites examined had hazard indices  $>1.0$  and  $<10.0$ , depending on the foraging scenario (Gonzales et al. 1998). This indicates a small potential for impacts from chemicals. The primary chemicals driving the risk scenario were pentachlorophenol, aluminum, radium-226, calcium, and thorium-228. Aluminum, radium, and thorium are naturally occurring substances in northern New Mexico.

### **2.2.3 Disturbance**

#### **2.2.3.1 Pedestrians and Vehicles**

There is no specific information on the reactions of Southwestern Willow Flycatchers to pedestrians and vehicles available. The recovery plan for the Southwestern Willow Flycatcher recommends providing protected areas, reducing unpredictable activities providing visual barriers, and reducing noise disturbance (USFWS 2002).

#### **2.2.3.2 Aircraft**

There is no specific information on the reaction of Southwestern Willow Flycatchers to aircraft available.

LANL lies within restricted airspace and planes infrequently fly less than 609 m (2,000 ft) above ground level. The County of Los Alamos operates an airport along the northern edge of LANL. The airport is located on the southern rim of Pueblo Canyon. Most flights approach and depart to the east of the airport, over the Rio Grande.

### **2.2.3.3 Explosives**

There is no specific information on the reaction of Southwestern Willow Flycatchers to explosives detonation available. The Southwestern Willow Flycatcher AEI is not located close to any explosives testing sites at LANL.

### **2.2.3.4 Other Sources of Noise**

LANL biological resources SMEs do not have good information on the effects of noise, including machinery operation, on Southwestern Willow Flycatchers. However, Southwestern Willow Flycatchers are probably not as sensitive to disturbance as some other threatened or endangered species (USFWS 2002). For a description of noise levels at LANL, see Part I, Section 2.2.3.

### **2.2.3.5 Artificially Produced Light**

There is no information on the effects of artificially produced light on Southwestern Willow Flycatchers available. Under the Los Alamos County Code, commercial site development plans are reviewed to ensure that lighting serves the intended use of the site while minimizing adverse impacts to adjacent residential property (Section 16-276). Section 16-276 of the County Code includes light source measurement limitations by zoning district. The code allows off-site light to be 0.5 fc in residential areas. By comparison, full moonlight measures 0.1 fc, and a crescent moon was measured at 0.01 fc.

## **3.0 AEI GENERAL DESCRIPTION FOR SOUTHWESTERN WILLOW FLYCATCHER**

The AEI consists of two types of areas—core and buffer. Core areas represent wetland areas with suitable vegetation for nesting, primarily dense willows. The buffer area is the area within 100 m (328 ft) of core areas. The Southwestern Willow Flycatcher AEI on LANL consists of two separate core areas. For purposes of this site plan, both core areas and associated buffers are considered one AEI unit.

### **3.1 Method for Identifying the Southwestern Willow Flycatcher AEI**

The core areas were defined by the presence of riparian habitat and suitable wetland vegetation. These areas were identified in 1994 during a survey of wetlands at LANL and mapped using a global positioning system receiver. Wetlands without stands of dense willows at least 2 m (7 ft) tall and 30 m (98 ft) wide were not included in the AEI. The buffer area is the area within 100 m (328 ft) of the core areas.

### **3.2 Location of the Southwestern Willow Flycatcher AEI**

LANL has one AEI for Southwestern Willow Flycatcher. It is composed of two core areas with associated buffers. The AEI core areas are located in the bottom of Pajarito Canyon, on the eastern side of LANL adjacent to Pajarito Road and State Road 4. The boundaries of the Southwestern



Willow Flycatcher AEI are maintained in the biological resources program GIS database at LANL.

## **4.0 AEI MANAGEMENT**

### **4.1 Overview**

This AEI management section provides guidelines for LANL operations to reduce or eliminate the threats to the Southwestern Willow Flycatcher from 1) habitat alterations that reduce habitat quality and 2) disturbance of breeding or potentially breeding flycatchers. Habitat alterations are considered for all AEIs and for both core and buffer areas. Disturbance activities to flycatchers are considered only for occupied AEIs and only for impacts on core areas. Developed areas (see Part I, Section 2.3) with ongoing baseline levels of activities and are not suitable habitat for Southwestern Willow Flycatchers have different restrictions than undeveloped core or buffer areas. Therefore, the location of the disturbance activity within the AEI, the occupancy status of the AEI, and the type of activity all affect whether or not the activity is allowable. AEIs for different species may overlap, and an activity must meet the guidelines of all applicable site plans to be allowable. Protective measures are described as management practices that should be followed when working in AEIs.

### **4.2 Definition and Role of Occupancy in AEI Management**

**Summary:** The occupancy status of an AEI affects what disturbance activities are allowable in different areas (core, buffer, developed) of the AEI. The Southwestern Willow Flycatcher AEI is considered occupied during May 15 through September 15 or until the surveys show the AEI to be unoccupied. See the Activity Table (Table 2, Section 4.5.2) for restrictions on occupied undeveloped core and buffer areas, and Part I, Section 2.3 for restrictions on developed areas.

Occupancy simply refers to whether or not an AEI is occupied during a species' period of sensitivity. For Southwestern Willow Flycatchers, LANL biological resources SMEs are primarily concerned with protecting the birds from disturbance during the breeding season. Because individuals may colonize suitable habitat, the Southwestern Willow Flycatcher AEI is treated as though it is occupied from May 15 through September 15 or until surveys show an AEI to be unoccupied. Southwestern Willow Flycatcher surveys are conducted during May, June, and July. Because Southwestern Willow Flycatchers migrate south for the winter, the AEI is treated as unoccupied from September 16 to May 14.

The occupancy status of an AEI affects what activities are allowable in the AEI. Although activities causing habitat alterations are always restricted, disturbance activities are restricted only in occupied AEIs. Table 2 provides dates and levels of disturbance activities allowable in the occupied Southwestern Willow Flycatcher AEI under the guidelines of this site plan. The dates in Table 2 indicate the time period during which the activity is restricted. Contact a LANL biological resources SME to find out the current occupancy status of an AEI (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

### **4.3 Introduction to AEI Management Guidelines**

**Summary:** The habitat alterations section (Section 4.4) and the activities section (Section 4.5) gives the guidelines for habitat alteration and disturbance activities, respectively, for the

Southwestern Willow Flycatcher AEI. The flow chart (see Figure 1) provides a quick reference to determine what, if any, guidelines need to be consulted for a specific activity. Protective measures give management practices that should be applied when working or considering work in AEIs. LANL biological resources SMEs are available to answer questions and provide advice (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

Sections 4.4 and 4.5 provide the guidelines for habitat alterations and allowable activities in AEI core and buffer areas. The flow chart (see Figure 1) provides a quick reference that should be used to determine whether a project or activity will affect an AEI and what sections of the site plan need to be consulted. The section on habitat alterations (Section 4.4) describes what and where habitat alterations are allowed under the guidelines of this site plan. The section and table on allowable activities (Section 4.5 and Table 2) describe what, when, and where disturbance activities are allowed in occupied AEIs under the guidelines of this site plan. If an activity does not meet the restrictions given in the guidelines, the activity must be individually reviewed for ESA compliance. This site plan only provides guidelines for the Southwestern Willow Flycatcher AEI. If an activity is desired in an area with overlapping AEIs, all applicable site plans must be consulted. Section 4.6 describes management practices that should be applied when working or considering work in an AEI. LANL biological resources SMEs are available to help interpret site plans and answer questions (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

#### **4.4 Definition of and Restrictions on Habitat Alterations**

##### **4.4.1 Definition of Habitat Alterations**

Habitat alteration includes any action that alters over the long-term the soil structure, vegetative components necessary to the species, prey quality and quantity, water quality, hydrology, or noise or light levels in undeveloped areas of an AEI. Long-term means the alteration lasts for more than one year. Habitat alteration includes any activity that removes vegetative components important to the Southwestern Willow Flycatcher (primarily trees and shrubs). An actual activity may take place outside of the AEI and will be considered habitat alteration if consequences of the activity have effects inside the AEI core.

The habitat components most important to flycatchers include vegetative structure, food quality and quantity, and disturbance levels, including noise and light. The thickets of certain trees and shrubs along wetlands are important because they provide roost sites and a suitable habitat for nesting and foraging.

##### **4.4.2 Fuels Management Practices to Reduce Wildfire Risk**

Thinning within undeveloped buffer areas may include trees of any size to achieve 7.6 m (25 ft) spacing between tree crowns. However, clear cutting is not allowed in undeveloped buffer areas. No fuels management practices are allowed in core areas. Habitat alterations including thinning are not restricted in developed areas. All fuels management activities in developed and buffer areas must follow the guidelines in the Activity Table (Table 2, Section 4.5.2) if the AEI is occupied.

##### **4.4.3 Utility Corridors**

Habitat alterations such as cutting down trees that threaten power lines are allowed within 8 m (26 ft) of either side of an existing utility line in all areas of an AEI (Trujillo and Racine 1995).



New utility lines and utility lines requiring clearance of a right-of-way greater than 16 m (52 ft) total must be individually reviewed for ESA compliance. Disturbance activities must follow the guidelines given in the Activities Table for occupied AEIs.

#### **4.4.4 Restrictions on Habitat Alterations**

**Summary:** Habitat alterations other than the utility corridor maintenance described above are not allowed in undeveloped core areas under the guidelines of this site plan. Habitat alteration in buffers is limited. If a project or activity is planned that would alter habitat in an undeveloped core area, it must be individually evaluated for ESA compliance. Habitat alterations in a buffer area other than fuels management activities or utility corridor maintenance must be reported to a LANL biological resources SME for tracking (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

### **4.5 Definition of and Restrictions on Disturbance Activities**

#### **4.5.1 Definition of Disturbance Activities**

LANL biological resources SMEs considered five categories of activities that might cause disturbance in an AEI. Most of the categories were first identified in the document “Peregrine Falcon Habitat Management in the National Forests of New Mexico” prepared for the U.S. Forest Service (Johnson 1994). Other light production and other noise production were included to provide the most comprehensive list of activities possible, reducing the need for individual review of activities for ESA compliance. The categories of activities are people, vehicles, aircraft, other light production, and other noise production. The impact of explosives detonation on this species is not considered here because there are no explosives testing sites within 2 km (1.25 mi) of potential nesting habitat. Low, medium, and high levels of impact for these activities are considered here. The following categories of activities are restricted only in AEIs that are classified as occupied.

**People**—includes any entry of people into an AEI on foot.

- Low impact is the presence of three or fewer people per project and duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of people or the duration criteria.
- High impact is the exceedance of both the number of people and the duration criteria.

**Vehicles**—includes the entry of any two-axle highway vehicle, all-terrain vehicle, or motorized machinery into an AEI by any route other than a paved road or an improved gravel road.

- Low impact is the presence of two or fewer vehicles per project and duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of vehicles or the duration criteria.
- High impact is the exceedance of both the number of vehicles and the duration criteria.

**Aircraft**—includes the operation of any aircraft below an elevation of 600 m (2,000 ft) above the highest ground level in the local vicinity.

- Low impact is the presence of one single-engine airplane and duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of aircraft or the duration criteria.
- High impact is the exceedance of both the number of aircraft and the duration criteria.

Any use of helicopters, jet airplanes, and propeller airplanes with two or more engines is classified as medium impact or above, depending on duration.

**Other Light Production**—includes any activity not previously listed that causes additional light to occur in an AEI core area (e.g., plans for construction of a new building at the edge of a developed area may call for lighting at night to facilitate nighttime work that impacts an undeveloped core area).

- Low impact is the increase of light intensity by up to 0.05 fc and a duration of one night or less per project per breeding season.
- Medium impact is the exceedance of either the intensity or duration criteria.
- High impact is the exceedance of both the intensity and duration criteria.

Measurements for increases in light are taken at the AEI core area boundary closest to the light source, if the source is outside the core, and at 10 m (33 ft) from the source if the source is inside the core. Light measurements for developed areas are taken at the edge of the developed area if the developed area is within an AEI core, or at the closest core boundary, if the developed area is outside of an AEI core.

**Other Noise Production**—includes any activity not previously listed except for explosives detonation that causes additional noise to occur in an AEI. For example, operation of machinery causes noise.

- Low impact is increasing noise levels in an AEI core by 6 dB(A) or less for one day or less per project per breeding season.
- Medium impact is the exceedance of either the level or the duration criteria.
- High impact is the exceedance of both the level and the duration criteria.

Measurements for increases in noise are taken at the AEI core boundary closest to the noise source if the source is outside the core, and at 10 m (33 ft) from the source if the source is inside the core. Noise measurements for developed areas are taken at the edge of the developed area if the developed area is within an AEI core, or at the closest core boundary if the developed area is outside of an AEI core.

#### **4.5.2 Activity Table**

Disturbance activities are of concern only when Southwestern Willow Flycatchers occupy an AEI. The AEI is always considered occupied between May 15 and September 15, or until surveys show the AEI to be unoccupied. The Southwestern Willow Flycatcher AEI is always considered unoccupied between September 16 and May 14, when flycatchers have migrated for the winter.

For occupancy status of an AEI after completion of surveys, contact a LANL biological resources SME (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

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

	<b>Core</b>	<b>Buffer</b>
<b><i>Restrictions on Occupied Habitat</i></b>		
<b><i>People</i></b>		
Low	No Restrictions	No Restrictions
Medium	May 15 to August 15	No Restrictions
High	May 15 to September 15	No Restrictions
<b><i>Vehicles</i></b>		
Low	May 15 to September 15	No Restrictions
Medium	May 15 to September 15	No Restrictions
High	May 15 to September 15	No Restrictions
<b><i>Aircraft</i></b>		
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
<b><i>Other Light/Noise Production</i></b>		
Low	May 15 to September 15	No Restrictions*
Medium	May 15 to September 15	No Restrictions*
High	May 15 to September 15	No Restrictions*

\*Noise or light production in the buffer is restricted if the activity would violate core area restriction on noise or light.

## 4.6 Protective Measures

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

- No wetland vegetation will be removed outside of developed areas.
- Appropriate erosion and runoff controls should be employed to reduce soil loss.
- Avoid unnecessary disturbance to vegetation (e.g., excessive parking areas or equipment storage areas, off-road travel, materials storage areas, crossing of streams or washes).
- Avoid removal of vegetation along drainage systems and stream channels.
- Avoid all vegetation removals not absolutely necessary.
- Appropriate erosion controls must be put in place and periodically checked throughout the life of any projects.
- All exposed soils must be revegetated as soon as feasible after disturbance to minimize erosion.

## 5.0 SOUTHWESTERN WILLOW FLYCATCHER AEI DESCRIPTION

### 5.1 Pajarito Canyon Southwestern Willow Flycatcher AEI

#### 5.1.1 Allowable Habitat Alteration in the Buffer Area

Since the purpose of the buffer area is to help maintain the core area as suitable Southwestern Willow Flycatcher habitat, habitat alteration in the buffer area will be extremely limited. There are two areas in which restrictions on habitat alteration are relaxed.

1. The mesa top of Mesita del Buey. This mesa top can be developed as long as restrictions on impacts to the core area are met.
2. Pajarito Road within the AEI. Mowing of upland vegetation is allowed up to 5 m (15 ft) from Pajarito Road, or to the fence, if the fence is within 9 m (30 ft). Vegetation must cover the roadsides to prevent sediment runoff, so mowed plants should be at least 5 cm (2 in) high. LANL biological resources SMEs encourage the growth of willow throughout the AEI—even the area along Pajarito Road—to enhance habitat. If, within this area, it is absolutely necessary to remove new willow growth (i.e., to improve visibility for human safety), LANL biological resources SMEs recommend that only willows at or above the level of the roadway surface be mowed.

## IV. AREA OF ENVIRONMENTAL INTEREST SITE PLAN FOR THE JEMEZ MOUNTAINS SALAMANDER

### 1.0 SPECIES DESCRIPTION—JEMEZ MOUNTAINS SALAMANDER

#### 1.1 Status

The Jemez Mountains Salamander (*Plethodon neomexicanus*) was listed in New Mexico as endangered under the Wildlife Conservation Act of New Mexico in 2006 (NMDGF 2006). In September 2012 the USFWS proposed the Jemez Mountains Salamander as endangered under the ESA (FR 2012) and the final listing as endangered was on 10 September 2013 (FR 2013a)

#### 1.2 General Biology

The Jemez Mountains Salamander is endemic to the Jemez Mountains of north-central New Mexico and is found in Los Alamos, Rio Arriba, and Sandoval counties (Stebbins and Rierner 1950). It is one of two endemic plethodontid salamanders that occur in New Mexico. It occurs predominantly at elevations between 2,130 to 3,430 m (6,988 to 11,254 ft) in mixed-conifer forest with greater than 50 percent canopy cover consisting mainly of Douglas fir (*Pseudotsuga menziesii* [Mirb.] Franco), blue spruce (*Picea pungens* Engelm.), Engelmann spruce (*Picea engelmannii* Parry ex Engelm.), white fir (*Abies concolor* [Gord. & Glend.] Lindl. ex Hildebr.), limber pine (*Pinus flexilis* James), ponderosa pine, and quaking aspen (*Populus tremuloides* Michx.). The ground surface in forest areas has (a) moderate to high volumes of large fallen trees and other woody debris, especially coniferous logs at least 25 cm (10 in) in diameter, particularly Douglas fir, which are in contact with the soil in varying stages of decay from freshly fallen to nearly fully decomposed; or (b) structural features, such as rocks, bark, and moss mats that provide

the species with food and cover. Underground habitat in forest or meadow areas contains interstitial spaces provided by (a) igneous rock with fractures or loose rocky soils, (b) rotted tree root channels, or (c) burrows of rodents or large invertebrates (Degenhardt et al. 1996; FR 2013b).

Plethodontid salamanders, which lack both lungs and gills, breathe through the mucous membranes in their mouth and throat and through their moist skin. The Jemez Mountains Salamander is completely terrestrial and does not use standing surface water for any life stage (FR 2012). Present in its habitat year-round, the Jemez Mountains Salamander spends most of its life underground, but can be found on the surface when conditions are warm and wet, approximately July through October. During this time, the Jemez Mountains Salamander can be found under rocks, bark, and moss mats and inside and under logs (Ramotnik 1986, Everett 2003). The Jemez Mountains Salamander eats invertebrates, including ants, mites, and beetles, and is thought to lay its eggs underground (FR 2013b).

### **1.3 Threats**

Principal threats to habitat include historical fire exclusion and suppression and severe wildland fires; forest composition and structure conversions; post-fire rehabilitation; forest and fire management; roads, trails, and habitat fragmentation; recreation; and disease (FR 2012).

## **2.0 IMPACT OF HUMAN ACTIVITIES**

### **2.1 Introduction**

Primary threats to the Jemez Mountains Salamander on LANL property are impacts to habitat quality or destruction of individual salamanders caused by LANL or Los Alamos County operations. Forested LANL property is also subject to impacts from severe wildland fire and wildfire suppression.

### **2.2 Impacts on Habitat Quality**

#### **2.2.1 Development**

Property at LANL varies from remote isolated land to heavily developed and/or industrialized. Most of the large developed areas at LANL are found on mesa tops, generally in the northern and western portion of LANL. The areas of Jemez Mountains Salamander habitat currently most impacted by development occur in Los Alamos Canyon. There is a secondary paved road (West Road) in the bottom of the canyon that exits the canyon on the north-facing slope through Jemez Mountains Salamander habitat. The canyon bottom also contains a recreational ice rink operated by Los Alamos County on an inholding owned by Los Alamos County. Development that reduces the occurrence of primary constituent elements of Jemez Mountains Salamander in core habitat would likely have a negative impact on the species.

#### **2.2.2 Pedestrians and Vehicles**

Many canyon bottoms and mesa tops at LANL have dirt roads traversing them. Most of these roads are gated; however, many of these roads are accessible to LANL employees and the public on foot or by bike. Some areas, such as Los Alamos Canyon, are frequently used by hikers and dog owners on active and historic trails which traverse the canyon, through Jemez Mountains

Salamander habitat in places. Maintenance of roads and trails in the habitat may have a negative impact on the species.

### **2.2.3 Severe Wildland Fire and Wildfire Suppression**

Stand-replacing wildfires significantly change forest composition and structure, and reduce canopy cover. Even ground wildfires may reduce the volume of fallen logs and large woody debris. Large areas of historic Jemez Mountains Salamander habitat have been impacted by stand-replacing wildfires associated with current forest stocking conditions, drought, and high temperatures (FR 2012). Forested habitats on LANL are also subject to severe wildland fires. To mitigate wildfire risks, some areas of LANL have been treated for fuels reduction and creation of fuel breaks both pre-emptively and during active wildfire suppression. Both wildfires and wildfire suppression activities can negatively impact the primary constituent elements of Jemez Mountains Salamander core habitat.

## **2.3 Impacts on Individual Salamanders**

### **2.3.1 Disease**

The amphibian pathogenic fungus *Batrachochytrium dendrobatidis* (Bd) was found in a wild-caught Jemez Mountains Salamander in 2003 (Cummer et al. 2005) on the east side of the species' range and again in another Jemez Mountains Salamander in 2010 on the west side of the species' range (FR 2012). Bd causes the disease chytridiomycosis, whereby the Bd fungus attacks keratin in amphibians. In adult amphibians, keratin primarily occurs in the skin. The symptoms of chytridiomycosis can include sloughing of skin, lethargy, morbidity, and death. Chytridiomycosis has been linked with worldwide amphibian declines, die-offs, and extinctions, possibly in association with climate change (Pounds et al. 2006). Chytridiomycosis may be a threat to the Jemez Mountains Salamander because this disease is a threat to many other species of amphibians and the pathogen has been detected in the Jemez Mountains Salamander (FR 2012).

As part of a cooperative study with the New Mexico Department of Game and Fish between 2007 and 2013, various amphibian species including the canyon tree frog (*Hyla arenicolor*), western chorus frog (*Pseudacris triseriata*), Woodhouse's toad (*Anaxyrus woodhousii*), tiger salamander (*Ambystoma tigrinum*), and Jemez Mountains Salamander were tested for Bd infection at LANL. To date, all sampling has been negative for Bd infection (Fresquez et al. 2013).

### **2.3.2 Destruction of Individual Salamanders**

During periods of the year when Jemez Mountains Salamander are on the soil surface, when conditions are warm and wet (generally July to October), they are vulnerable to injury and mortality from soil-disturbing activities, including operation of heavy equipment in core habitat. They also are at risk to be found and collected by people.

## **3.0 AEI GENERAL DESCRIPTION FOR JEMEZ MOUNTAINS SALAMANDER**

The AEI consists of two areas, a core area and a buffer area. The core habitat is defined as suitable habitat where the Jemez Mountains Salamander occurs or may occur at LANL. The core habitat consists of sections of north-facing slope that contain the required micro-habitat to support Jemez



Mountains Salamander. The buffer area is 100 m (328 ft) wide extending outward from the edge of the core area.

### 3.1 Method for Identifying a Jemez Mountains Salamander AEI

The first step in identifying potential Jemez Mountains Salamander at LANL was to use a GIS to model habitat. Early modeling efforts by Hathcock (2008) identified areas of potential habitat and that model was further refined. The following parameters were modeled in the GIS:

- Elevation: 7,000 ft (2,150 m) and above
- Slope: Greater than 20 degrees
- Aspect: north-facing +/- 20 degrees
- Land cover: Mixed conifer
- Land use: Undeveloped
- Modeled habitat is only selected if it is greater than five contiguous 30 × 30 m (98 × 98 ft) pixels in size

Once this habitat layer was developed, a second layer was modeled that examined the level of shade in the habitat, also known as an illumination index. Since the Jemez Mountains Salamander needs cool moist conditions, an illumination index model would further highlight areas where this habitat type may occur or further reinforce the areas selected by the GIS modeling. The illumination index describes the amount and extent of solar radiation reaching the Earth's surface at a given point. This takes into account the topography that may cast shadows. The illumination model was developed using the 5 m (16 ft) resolution digital elevation model hillshade and using the Surface toolbox in ArcToolbox (Environmental Science Research Institute, Redlands, California) using the highest height of the sun on June 21 at 1:00 pm, altitude of 74.4 and Azimuth of 178.4, when the sun would be at its maximum height. These procedures were based on work done by Reilly et al. (2009).

Once this modeling was complete, LANL biological resources SMEs performed field validation to verify the suitability of the modeled habitat. The goal was to verify that mixed conifer was still the dominant cover class in the selected area. The GIS analysis used data from a landcover map created by McKown et al. (2003). There have been changes in habitat since this landcover map was published from fire and extreme drought effects. Since LANL is on the extreme edge of Jemez Mountains Salamander lower elevational range, a key component in this part of its range is soil moisture content. During field validation, evidence of a moist mixed conifer habitat versus a dry mixed conifer habitat was noted. One of the key indicators used to delimit areas of moist versus dry mixed conifer during the field validation was the presence of white fir (Evans et al. 2011) combined with a high canopy cover.

Field validation of the model occurred in May 2013, or decisions were based on earlier field visits to the sites from other projects. Each field validation consisted of LANL biological resources SMEs walking down all of the modeled habitat polygons to look for the presence of indicator features. If a polygon of modeled habitat contained white fir, indicating a moist wet conifer type habitat, a high canopy closure, and other signs of high habitat quality such as dead logs, moss or



other areas that could be used as cover by the Jemez Mountains Salamander, then the polygon was marked for retention in the final core habitat. Polygons that did not contain the necessary habitat requirements were omitted.

After the field validation was complete, the final core habitat boundaries that LANL would recognize were hand digitized using ArcGIS (Environmental Science Research Institute, Redlands, California) by LANL biological resources SMEs in and around the validated modeled polygon and areas between polygons if appropriate. The final identified core habitat at LANL occurs on the north-facing slopes of canyons. Toward the rim of the canyon the core boundaries end where the mixed conifer ends. In the canyon bottoms the core boundary extends to the edge of the stream channel. The upstream and downstream core boundaries end where the mixed conifer ends. A buffer habitat was extended around the core to a distance of 100 m (328 ft) outward. The LANL Fenton Hill satellite facility in the Jemez Mountains off of New Mexico Highway 126 is on land leased to DOE by the Santa Fe National Forest. The entire footprint is considered to be developed core habitat for the Jemez Mountains Salamander, since proposed critical habitat is adjacent to the facility.

### **3.2 Location and Number of Jemez Mountains Salamander AEIs**

The identified Jemez Mountains Salamander core habitats were grouped by canyon system into AEIs, which contain contiguous and noncontiguous habitat areas. The largest contiguous section of habitat at LANL is in Los Alamos Canyon. There are two noncontiguous areas of habitat in Two-mile Canyon, four in Pajarito Canyon, one contiguous area in Cañon de Valle, and the entire Fenton Hill facility.

## **4.0 AEI MANAGEMENT**

### **4.1 Overview**

This AEI management section provides guidelines for LANL operations to reduce or eliminate the threats to the Jemez Mountains Salamander from habitat alterations that reduce habitat quality. Habitat alterations are considered for all AEIs and for both core and buffer areas. Developed areas that have ongoing baseline levels of activities and are not suitable habitat for Jemez Mountains Salamander have different restrictions than undeveloped core or buffer areas. AEIs for different species may overlap, and an activity must meet the guidelines of all applicable site plans to be allowable. Protective measures are described as management practices that should be followed when working in AEIs.

### **4.2 Definition and Role of Occupancy in AEI Management**

Occupancy simply refers to whether or not an AEI is occupied by the Jemez Mountains Salamander. The Los Alamos Canyon AEI is known to be occupied based on past surveys. Surveys for the Jemez Mountains Salamander are known to have a very low detection rate for occupied areas, so at LANL all AEIs are assumed to be occupied at all times. If needed, site-specific surveys will be conducted by federally permitted LANL biological resources SMEs.

### **4.3 Definition and Role of Developed Areas in AEI Management**

Developed areas include all building structures, paved roads, improved gravel roads, and paved and unpaved parking lots. The majority of Jemez Mountains Salamander core habitat is in undeveloped areas, except for the satellite facility at Fenton Hill and a small amount of habitat in Los Alamos Canyon where West Road crosses the habitat. Generally, developed areas will not have restrictions; however, some of the undeveloped sections within the footprint of Fenton Hill may have restrictions because they may contain Jemez Mountains Salamanders when they move to the surface between July and October. Any project that occurs within developed core habitat will be evaluated by LANL biological resources SMEs for ESA compliance.

### **4.4 General Description of Core and Buffer Areas and Allowable Area Development**

The purpose of buffer areas is to protect core areas from habitat degradation. The current levels of development in buffer and core areas represent baseline conditions for this site plan. No further development is allowed in the core area under the guidelines of this site plan. Any development in a buffer area will be reviewed by LANL biological resources SMEs to ensure that there are no impacts to the core habitat.

### **4.5 Emergency Actions**

If safety and/or property are immediately threatened by something occurring within an AEI (for example, wildfire, water line breakage, etc.) please contact a LANL biological resources SME (1-505-665-3366) as soon as possible. If the emergency occurs outside of regular business hours, contact the Emergency Management Office (1-505-667-6211). This office will then communicate with the appropriate LANL personnel.

### **4.6 Introduction to AEI Management Guidelines**

Section 4.7 provides the guidelines for habitat alterations and allowable activities in AEI core and buffer areas. It describes what and where habitat alterations are allowed under the guidelines of this site plan. If an activity does not meet the restrictions given in the guidelines, the activity must be individually reviewed for ESA compliance. This site plan only provides guidelines for the Jemez Mountains Salamander AEIs. If an activity is desired in an area with overlapping AEIs, all applicable site plans must be consulted. AEI maps show the location of all AEIs in an area. LANL biological resources SMEs are always available to help interpret site plans and answer questions (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

### **4.7 Definition of and Restrictions on Habitat Alterations**

#### **4.7.1 Definition of Habitat Alterations**

Habitat alteration includes any action that alters the soil structure, vegetative components necessary to the species, water quality, or hydrology in undeveloped areas of an AEI. An actual activity may take place outside of the AEI and will be considered habitat alteration if consequences of the activity have effects inside the AEI core. Habitat alterations would also include soil pits for soil samples deeper than 15 cm (6 in) using either hand or mechanized augers. Any activity that might disturb the soil will need to be reviewed by LANL biological resources SMEs.

The habitat components most important to the Jemez Mountains Salamander include soil structure and vegetative structure. The forest structure within an area designated as a Jemez Mountains Salamander AEI is important because it provides the necessary moist, cool microclimate.

#### ***4.7.2 Fuels Management Practices to Reduce Wildfire Risk***

One of the primary threats to the Jemez Mountains Salamander is wildfire (FR 2012), but they also require habitat with a high canopy cover which makes fuels reduction challenging. Within undeveloped core areas, thinning trees to a level of 80 percent canopy cover or higher is approved. Trees may not be thinned below 80 percent canopy cover without further ESA review by LANL biological resources SMEs. Large logs on the ground should be left in place and not chipped. Understory thinning that does not reduce total canopy cover below 80 percent is permitted. Large trees that are felled should be left as large logs on the ground. Smaller trees and understory shrubs that may be thinned should be dispersed and left on-site to aid in soil moisture retention. Thinning activities should not occur during the rainy season between July to October (or when freezing temperatures begin, whichever comes first) when the Jemez Mountains Salamander is found on the surface.

In buffer areas, thinning of trees can occur to the current LANL-approved prescription level (LAAO 2000). LANL biological resources SMEs are available to provide guidance and mark trees for thinning (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

#### ***4.7.3 Utility Corridors***

Habitat alterations such as cutting down trees that threaten power lines are allowed within 8 m (26 ft) of either side of an existing electrical utility line at LANL under existing guidelines and engineering controls (Hathcock 2013). This level is approved in all areas of an AEI. New utility lines and utility lines requiring clearance of a right-of-way greater than 16 m (52 ft) total in core habitat must be individually reviewed for ESA compliance.

#### ***4.7.4 Restrictions on Habitat Alterations***

Habitat alterations other than the fuels management practices and utility corridor maintenance described above are not allowed in undeveloped core areas under the guidelines of this site plan. If a project or activity is planned that would alter habitat in an undeveloped core area, it must be individually evaluated for ESA compliance. Habitat alterations in buffer areas must be reviewed by LANL biological resources SMEs to ensure that there are no impacts to core habitat.

## REFERENCES CITED

- Allison, L.J., C.E. Paradzick, J.W. Rourke, and T.D. McCarthy. 2003. A characterization of vegetation in nesting and non-nesting plots for southwestern willow flycatchers in central Arizona. In *Ecology and Conservation of the Willow Flycatcher* (eds) M.K. Sogge, B.E. Kus, S.J. Sferra & M.J. Whitfield. Studies In Avian Biology: Cooper Ornithological Society.
- Brown, B.T., G.S. Mills, C. Powels, W.A. Russell, G.D. Therres, and J.J. Pottie. 1999. The influence of weapons-testing noise on bald eagle behavior. *Journal of Raptor Research* 33:227–32.
- Brown, B.T. and L.E. Stevens. 1997. Winter bald eagle distribution is inversely correlated with human activity along the Colorado River, Arizona. *Journal of Raptor Research* 31:7–10.
- Burns, M.J. 1995. White Rock noise measurements during PHERMEX tests, 11 March 1995. Los Alamos National Laboratory Memorandum DX-DO:DARHT-95-31 and 35.
- Cain, B.W. 1988. The impact of environmental contaminants on Southwestern USA raptors. *Proceedings of the Southwest Raptor Management Symposium and Workshop* (ed) by R.L. Glinski, B.G. Pendleton, M.B. Moss, M.N. LeFranc Jr., B.A. Millsap & S.W. Hoffman, 348–54. Tucson, AZ, USA, May 21–24, 1986: National Wildlife Federation, Washington, D.C., USA.
- Cummer, M. R., D. E. Green, and E. M. O'Neill. 2005. Aquatic chytrid pathogen detected in terrestrial plethodontid salamander. *Herpetological Review* 36(3):248–249.
- Degenhardt, W.G., C.W. Painter, and A.H. Price. 1996. *Amphibians and Reptiles of New Mexico*. University of New Mexico Press, Albuquerque, New Mexico.
- Delaney, D.K., T.G. Grubb, P. Beier, L.L. Pater, and M.H. Reiser. 1999. Effects of helicopter noise on Mexican spotted owls. *Journal of Wildlife Management* 63:60–76.
- Department of Energy (DOE). 1996. Dual-Axis Radiographic Hydrodynamic Test Facility final environmental impact statement mitigation action plan. DOE/EIS-0228.
- Durst, S.L., M.K. Sogge, H.C. English, S.O. Williams, B.E. Kus, and S.J. Sferra. 2006. Southwestern Willow Flycatcher breeding site and territory summary – 2005. USGS Southwest Biological Science Center report to the U.S. Bureau of Reclamation.
- Durst, S.L., T.C. Theimer, E.H. Paxton, and M.K. Sogge. 2008. Age, habitat, and yearly variation in the diet of a generalist insectivore, the southwestern willow flycatcher. *Condor* 110:514–25.
- Environmental Protection Agency (EPA). 2010. National Pollutant Discharge Elimination System Storm Water Individual Permit number NM0030759.

- Evans, A.M., R.G. Everett, S.L. Stephens, and J.A. Youtz. 2011. Comprehensive Fuels Treatment Practices Guide for Mixed Conifer Forests: California, Central and Southern Rockies, and the Southwest. Forest Guild 106pp.
- Everett, E. 2003. Habitat Characterization and Environmental Influences of the Jemez Mountains Salamander (*Plethodon neomexicanus*). M.S. Thesis, New Mexico State University, Las Cruces, New Mexico, 55pp.
- Federal Register. 2012. September 12, 2012. Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for the Jemez Mountains Salamander and Proposed Designation of Critical Habitat. Proposed Rule 77(177):56482-56513.
- Federal Register. 2013a. September 10, 2013. Endangered and Threatened Wildlife and Plants; Determination of Endangered Species Status for Jemez Mountains Salamander (*Plethodon neomexicanus*) Throughout Its Range. 78(175):55600-55627.
- Federal Register. 2013b. February 12, 2013. Endangered and Threatened Wildlife and Plants; Endangered Status and Designation of Critical Habitat for the Jemez Mountains Salamander. Proposed rule; reopening of comment period 78(29):9876-9882.
- Finch, D.M. and J.F. Kelly. 1999. Status and migration of the southwestern willow flycatcher in New Mexico. In *Rio Grande Ecosystems: Linking Land, Water, and People: Toward a Sustainable Future for the Middle Rio Grande Basin* (ed) D.M. Finch, J.C. Whitney, J.F. Kelly & S.R. Loftin, 197–203, Albuquerque, New Mexico.
- Fresquez, P.R., C. Hathcock, D. Keller, and J. Fair. 2013. “Foodstuffs and Biota Monitoring”, in Environmental Report 2012. Los Alamos National Laboratory report LA-UR-13-27065.
- Gallegos, A., G. Gonzales, K. Bennett, and L. Pratt. 1997. Preliminary Risk Assessment of the Mexican Spotted Owl under a Spatially-weighted Foraging Regime at the Los Alamos National Laboratory. LANL report LA-13259-MS.
- Gonzales, G., R. Rytty, P. Newell, A. Gallegos, and S. Sherwood. 2004. Modeled Ecological Risk to the Deer Mouse, Mexican Spotted Owl, and Western Bluebird at the Los Alamos National Laboratory using ECORSK.7. LANL report LA-14118.
- Gonzales, G., P. Gallegos, A. Gallegos, and K. Bennett. 2009. Site-wide Application of ECORSK.9 at the Los Alamos National Laboratory. LANL report LA-UR-09-02833.
- Ganey, J.L. and R.P. Balda. 1994. Habitat selection by Mexican spotted owls in northern Arizona. *Auk* 111:162–69.
- Gonzales, G.J., A.F. Gallegos, K.D. Bennett, M.A. Mullen, and T.S. Foxx. 1998. Preliminary Risk Assessment of the Southwestern Willow Flycatcher (*Empidonax traillii extimus*) at the Los Alamos National Laboratory. Los Alamos National Laboratory report LA-13508MS.

- Grubb, T.G. and W.W. Bowerman. 1997. Variations in breeding bald eagle responses to jets, light planes, and helicopters. *Journal of Raptor Research* 31:213–22.
- Grubb, T.G. and R.M. King. 1991. Assessing human disturbance of breeding bald eagles with classification tree models. *Journal of Wildlife Management* 55:500–11.
- Hansen, L.A. 2004. Sigma Mesa Construction Debris Recycling Project. Los Alamos National Laboratory Memorandum RRES/Ecol-04-0049.
- Hansen, L.A. 2005. A Biological Assessment of the Potential Effects of the Operation of an Asphalt Batch Plant and a Rock Crusher at Sigma Mesa on Federally Listed Threatened and Endangered Species. Los Alamos National Laboratory report LA-CP-05-0293.
- Hansen, L.A. 2009. Sound studies of the Biosafety Level 3 (BSL-3) Laboratory at TA-3, Building 1076. Los Alamos National Laboratory report LA-UR-09-05482.
- Hathcock, C.D. and T.K. Haarmann. 2008. Development of a predictive model for habitat of the Mexican spotted owl in Northern New Mexico. *Southwestern Naturalist* 53:34–38.
- Hathcock, C. D. 2008. The Status of the Jemez Mountains Salamander (*Plethodon neomexicanus*) at Los Alamos National Laboratory, 2008. Los Alamos National Laboratory Report LA-UR-08-0826.
- Hathcock, C.D., L.A. Hansen, and D.C. Keller. 2010. Occupancy of habitats by Mexican spotted owl in relation to explosives noise and recreational access at Los Alamos National Laboratory. *Western Birds* 41:102–06.
- Hathcock, C. D. 2013. Email from C. D. Hathcock to S. Martinez on June 20, 2013, Los Alamos National Laboratory communication.
- Hatten, J.R. and C.E. Paradzick. 2003. A multiscaled model of southwestern willow flycatcher breeding habitat. *Journal of Wildlife Management* 67:774–88.
- Holthuijzen, A.M.A., W.G. Eastland, A.R. Ansell, M.N. Kochert, R.D. Williams, and L.S. Young. 1990. Effects of blasting on behavior and productivity of nesting prairie falcons. *Wildlife Society Bulletin* 18:270–81.
- Huchton, K., S.W. Koch, and R.J. Robinson. 1997. An analysis of background noise in selected canyons of Los Alamos County. Los Alamos National Laboratory report LA-13372-MS.
- Johnson, J.A. and T.H. Johnson. 1985. Timber type model of spotted owl habitat in northern New Mexico. New Mexico Department of Game and Fish report, Santa Fe, New Mexico.
- Johnson, T.H. 1994. Peregrine falcon habitat management in national forests of New Mexico. USDA Forest Service unpublished report.



- Johnson, T.H. 1998. Topographic-Landsat model of suitable spotted owl habitat around Los Alamos National Laboratory. Los Alamos National Laboratory unpublished report.
- Keller, D.C. and T.S. Foxx. 1997. Biological assessment for threatened and endangered species at the DP Road Tract land transfer. Los Alamos National Laboratory unpublished report.
- Keller, D.C. and D. Risberg. 1995. Biological and floodplain/wetland assessment for the Dual-Axis Radiographic Hydrodynamics Test Facility (DARHT). Los Alamos National Laboratory report LA-UR-95-647.
- Knight, J.L. and S.S. Vrooman. 1999. A study of construction machinery noise levels at Los Alamos National Laboratory. Los Alamos National Laboratory report LA-UR-99-5740.
- Department of Energy, Los Alamos Area Office (LAAO). 2000. Environmental Assessment for the Wildfire Hazard Reduction and Forest Health Improvement Program at Los Alamos National Laboratory, Los Alamos, New Mexico. DOE-EA-1329.
- Los Alamos National Laboratory (LANL). 2013. Environmental Protection. Los Alamos National Laboratory Program Description 400, Revision 2.
- McKown, B., S.W. Koch, R.G. Balice, and P. Neville. 2003. Land Cover Classification Map for the Eastern Jemez Region. Los Alamos National Laboratory report LA-14029.
- New Mexico Department of Game and Fish (NMDGF), April 2006. Threatened and Endangered Species of New Mexico—2006 Draft Biennial Review and Recommendations. Authority: Wildlife Conservation Act (NMSA 17-2-37+B1 through 17-2-46, 1978).
- New Mexico Environment Department (NMED). 2005. Compliance Order on Consent New Mexico Environment Department.
- Paakkonen, R. 1991. Low-frequency noise impulses from explosions. *Journal of Low Frequency Noise & Vibration* 10:78–82.
- Pounds, J.A., M.R. Bustamante, L.A. Coloma, J.A. Consuegra, M.P.L. Fogden, P.N. Foter, E. La Marca, K.L. Masters, A. Merino-Viteri, R. Puschendorf, S.R. Ron, G.A. Sanchez-Azofeifa, C.J. Still, and B.E. Yound. 2006. Widespread amphibian extinctions from epidemic disease driven by global warming. *Nature* 439(7073):161-167.
- Ramotnik, C.A. 1986. Status Report: *Plethodon neomexicanus* Jemez Mountains Salamander. U.S. Fish and Wildlife Service Report.
- Reilly, E.C., D. Clayton, R.S. Nauman, D.H. Olson, H.H. Welsh Jr, B. Devlin. 2009. Spatial Model of Optimal Habitat for the Siskiyou Mountains Salamander (*Plethodon stormi*) North of the Siskyou Crest. Chapter 2. In: Olson, D.H., D. Clayton, R.S. Nauman, and H.H. Welsh Jr (Editors). 2009. Conservation of the Siskiyou Mountains Salamander (*Plethodon stormi*). *Northwest Fauna* 6:1-73.



- Stebbins, R.C., and W.J. Riemer. 1950. A New Species of Plethodontid Salamander from the Jemez Mountains of New Mexico. *Copeia* 1950(2):73–80.
- Steidl, R.J. and R.G. Anthony. 2000. Experimental effects of human activity on breeding bald eagles. *Ecological Applications* 10:258–68.
- Swarthout, E.C.H. and R.J. Steidl. 2001. Flush responses of Mexican spotted owls to recreationists. *Journal of Wildlife Management* 65:312–17.
- Swarthout, E.C.H. and R.J. Steidl. 2003. Experimental effects of hiking on breeding Mexican spotted owls. *Conservation Biology* 17:307–15.
- Trujillo, C.T. and E. Racine. 1995. Meeting notes on the 13.8-kV transmission line tree trimming. Los Alamos National Laboratory Memorandum FSS-8-95-114.
- U.S. Fish and Wildlife Service (USFWS). 1995. Recovery plan for the Mexican spotted owl. Albuquerque, New Mexico.
- U.S. Fish and Wildlife Service (USFWS). 2012. Recovery plan for the Mexican Spotted Owl, First Revision. Albuquerque, New Mexico.
- U.S. Fish and Wildlife Service (USFWS). 2002. Southwestern willow flycatcher recovery plan. Albuquerque, New Mexico.
- Vigil, E.A. 1995. Noise measurements at State Road 4 and Bandelier turn-off at State Road 4 during PHERMEX test on March 11, 1995. Los Alamos National Laboratory Memorandum ESH-5:95-11825.
- Vrooman, S.S., S.W. Koch, and J.L. Knight. 2000. Temporal and spatial variation in background noise levels at Los Alamos National Laboratory. Los Alamos National Laboratory report LA-13684-MS.
- Wiesenborn, W.D. and S.L. Heydon. 2007. Diets of breeding southwestern willow flycatchers in different habitats. *Wilson Journal of Ornithology* 119:547–57.
- Willey, D.W. 2013. Diet of Mexican Spotted Owls in Utah and Arizona. *The Wilson Journal of Ornithology* 125(4):775-781.
- Yong, W. and D.M. Finch. 1997. Migration of the willow flycatcher along the middle Rio Grande. *Wilson Bulletin* 109:253–68.

## APPENDIX

**Table A-1. The percentage of each food type found in Mexican Spotted Owl food remains at LANL**

<b>Species</b>	<b>Relative Abundance</b>
<i>Neotoma</i> spp.	26.22
<i>Peromyscus</i> spp.	10.22
<i>Microtus</i> 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**

		<b>Distance from Source</b>			
	Source (street light)	5 m	10 m	15 m	20 m
ftc	3.70	2.28	1.20	0.62	0.32

**Attachment 13: MSGP IPAC TRUST RESOURCES REPORT**

# MSGP

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## *IPaC Trust Resource Report*

Generated July 27, 2015 07:29 PM MDT



US Fish &amp; Wildlife Service

# IPaC Trust Resource Report



## Project Description

NAME

MSGP

PROJECT CODE

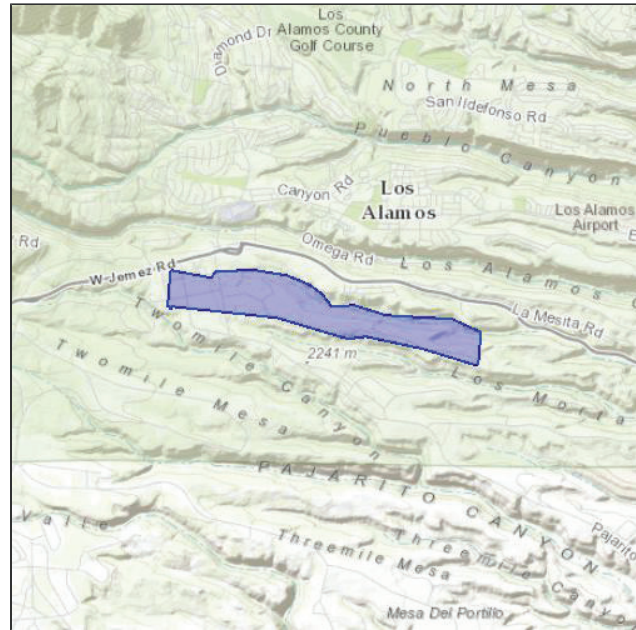
LXATM-TI5EJ-BAJEQ-3NC5E-SOGYTE

LOCATION

Los Alamos County, New Mexico

DESCRIPTION

Facilities that discharge to Sandia Canyon within TA-3 and TA-60. Industrial facilities subject to the MSGP. July, 2015.



## U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

### New Mexico Ecological Services Field Office

2105 Osuna Road Ne

Albuquerque, NM 87113-1001

(505) 346-2525

# Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the [Endangered Species Program](#) and should be considered as part of an effect analysis for this project.

This unofficial species list is for informational purposes only and does not fulfill the requirements under [Section 7](#) of the Endangered Species Act, which states that Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action." This requirement applies to projects which are conducted, permitted or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can be obtained by returning to this project on the IPaC website and requesting an Official Species List from the regulatory documents section.

## Amphibians

### Jemez Mountains Salamander *Plethodon neomexicanus*

Endangered

#### CRITICAL HABITAT

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=D019>

## Birds

### Mexican Spotted Owl *Strix occidentalis lucida*

Threatened

#### CRITICAL HABITAT

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B074>

### Southwestern Willow Flycatcher *Empidonax traillii extimus*

Endangered

#### CRITICAL HABITAT

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B094>

### Yellow-billed Cuckoo *Coccyzus americanus*

Threatened

#### CRITICAL HABITAT

There is **proposed** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B06R>

## Mammals

### New Mexico Meadow Jumping Mouse *Zapus hudsonius luteus*

Endangered

#### CRITICAL HABITAT

There is **proposed** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=A0BX>

## Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area



# Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service ([1](#)). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

<b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i> Season: Wintering <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B008">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B008</a>	<b>Bird of conservation concern</b>
<b>Bendire's Thrasher</b> <i>Toxostoma bendirei</i> Season: Breeding	<b>Bird of conservation concern</b>
<b>Brewer's Sparrow</b> <i>Spizella breweri</i> Season: Migrating <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0HA">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0HA</a>	<b>Bird of conservation concern</b>
<b>Brown-capped Rosy-finch</b> <i>Leucosticte australis</i> Season: Wintering	<b>Bird of conservation concern</b>
<b>Burrowing Owl</b> <i>Athene cunicularia</i> Season: Breeding	<b>Bird of conservation concern</b>
<b>Cassin's Finch</b> <i>Carpodacus cassinii</i> Year-round	<b>Bird of conservation concern</b>
<b>Flammulated Owl</b> <i>Otus flammeolus</i> Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0DK">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0DK</a>	<b>Bird of conservation concern</b>
<b>Fox Sparrow</b> <i>Passerella iliaca</i> Season: Wintering	<b>Bird of conservation concern</b>
<b>Golden Eagle</b> <i>Aquila chrysaetos</i> Year-round <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0DV">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0DV</a>	<b>Bird of conservation concern</b>
<b>Grace's Warbler</b> <i>Dendroica graciae</i> Season: Breeding	<b>Bird of conservation concern</b>
<b>Juniper Titmouse</b> <i>Baeolophus ridgwayi</i> Year-round	<b>Bird of conservation concern</b>
<b>Lewis's Woodpecker</b> <i>Melanerpes lewis</i> Year-round	<b>Bird of conservation concern</b>
<b>Loggerhead Shrike</b> <i>Lanius ludovicianus</i> Year-round <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0FY">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0FY</a>	<b>Bird of conservation concern</b>

<b>Mountain Plover</b> Charadrius montanus	<b>Bird of conservation concern</b>
Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B078">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B078</a>	
<b>Olive-sided Flycatcher</b> Contopus cooperi	<b>Bird of conservation concern</b>
Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0AN">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0AN</a>	
<b>Peregrine Falcon</b> Falco peregrinus	<b>Bird of conservation concern</b>
Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FU">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FU</a>	
<b>Pinyon Jay</b> Gymnorhinus cyanocephalus	<b>Bird of conservation concern</b>
Year-round	
<b>Prairie Falcon</b> Falco mexicanus	<b>Bird of conservation concern</b>
Year-round <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0ER">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0ER</a>	
<b>Swainson's Hawk</b> Buteo swainsoni	<b>Bird of conservation concern</b>
Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B070">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B070</a>	
<b>Williamson's Sapsucker</b> Sphyrapicus thyroideus	<b>Bird of conservation concern</b>
Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FX">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FX</a>	
<b>Willow Flycatcher</b> Empidonax traillii	<b>Bird of conservation concern</b>
Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F6">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F6</a>	

## Refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

# Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

## DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

## DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

## DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

There are no wetlands identified in this project area

**Attachment 14: EPC-CP-QAPP-MSGP**

The EPC-CP-QAPP-MSGP is in the process of being updated and finalized. The current document, ENV-CP-QAPP-MSGP R-5, is included in the attachment and will be replaced in the hard copy of the SWPPP once the new document is completed.

Effective Date: 11/04/2013

Next Review Date: 11/04/2015

**Environment, Safety, Health Directorate****Environmental Protection Division – Compliance Programs Group****Quality Assurance Project Plan****Stormwater Multi-Sector General Permit for  
Industrial Activities Program****Reviewers:**

Name:	Organization:	Signature:	Date:
Melanie Lamb	ADESH-OIO, QA Specialist	Signature on File	

**Derivative Classifier:** ☐ Unclassified ☒ DUSA ENVPRO

Name:	Organization:	Signature:	Date:
Ellena Martinez	ADESH-OIO	Signature on File	

**Approval Signatures:**

Subject Matter Expert:	Organization:	Signature:	Date:
Holly Wheeler	ENV-CP	Signature on File	
Responsible Line Manager:	Organization:	Signature:	Date:
Mike Saladen	ENV-CP, Team Lead	Signature on File	
Responsible Line Manager:	Organization:	Signature:	Date:
Anthony Grieggs	ENV-CP, Group Leader	Signature on File	

**CONTROLLED DOCUMENT**

This copy is uncontrolled. The controlled copy can be found on the ENV Division Web page.

Users are responsible for ensuring they work to the latest approved version.

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### History of Revisions

<b>Document Number</b> <i>[Include revision number, beginning with Revision 0]</i>	<b>Effective Date</b> <i>[Document Control Coordinator inserts effective date]</i>	<b>Description of Changes</b> <i>[List specific changes made since the previous revision]</i>
0	06/03	New Document
1	12/05	Annual review and revision
2	07/07	Annual review, incorporated organizational restructure changes.
3	07/09	Biennial Review and Revision
4	07/09	Biennial Review and Revision
5	10/13	Biennial Review and Revision. New format implemented.



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## 1.0 QUALITY PROGRAM

LANL will comply with the monitoring requirements as specified by the 2008 National Pollutant Discharge Elimination System (NPDES) Stormwater Multi-Sector General Permit for Industrial Activities. Compliance will be demonstrated through the successful implementation of this project plan and applicable procedures.

Los Alamos National Laboratory (the Laboratory) has established a comprehensive stormwater program for its industrial activities. Historically, the Laboratory operated under the NPDES Baseline General Permit and then under the NPDES 1995, 2000, and 2008 Multi-Sector General Permits. The Laboratory submitted its NOI for 2008 coverage in December 2008.

The 2008 MSGP was issued on September 22, 2008 and became effective on September 29, 2008.

The purpose of this project plan is to ensure compliance with the following:

- 2008 NPDES Multi-Sector General Permit (MSGP) and the Clean Water Act (CWA)
- DOE Order 450.1, *Environmental Protection Program*, and DOE Order 5400.5, *Radiation Protection of the Public and Environment*, which establish environmental protection program policies, requirements, and responsibilities

The Environmental Protection, Environmental Compliance Programs (ENV-CP) Water Quality Team has been tasked with overseeing institutional stormwater compliance related activities at the Laboratory.

### 1.1 QUALITY PROGRAM PURPOSE

This Quality Assurance Project Plan (QAPP) describes the policies and requirements that ensure MSGP activities are conducted in a consistent, agreed-upon manner.

This QA Project Plan describes the policies and requirements that ensure the MSGP processes are conducted in a consistent, agreed-upon manner. Drivers for the quality plan include:

- DOE Order 414.1C, *Quality Assurance*
- SD330, *LANL Quality Assurance Program*

This QA Project Plan (QAPP), including implementing procedures, is a sub-tier document to the SD330, *LANL Quality Assurance Program*. The following documents provide requirements to ensure that the MSGP Program is operated in accordance with established plans and procedures:

- SD330, *LANL Quality Assurance Program*
- QA Project Plan for the MSGP (this document)
- Implementing procedures

### 1.2 ORGANIZATION

ENV-CP is responsible for compliance oversight of the Laboratory's MSGP coverage. The Group is organized by teams under the line management direction of the Group Leader. Teams are cross-functional and focus on specific Laboratory water quality responsibilities, deliverables, or

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products. Teams are guided by Team Leaders who have the responsibility to assure the program is completed and properly implemented.

The Team Leader coordinates the project and reports to the ENV-CP Group Leader. The Project Lead implements program oversight, coordinates contractor efforts (if there are any), and reports to the Team Leader. A QA Specialist is assigned to work for the Team Leader to provide quality assurance assistance, advice, and review. In addition, representatives from other groups may participate and contribute to this team as subject matter experts for project activities. The project organization is shown in Attachment 1.

Applicable regulatory drivers include the following:

- Clean Water Act (CWA)
- 2008 NPDES Multi-Sector General Permit (MSGP)
- DOE Order 450.1, *Environmental Protection Program*
- DOE Order 5400.5, *Radiation Protection of Public and Environment*
- [P401, Procedure to Identify, Communicate, and Implement Environmental Requirements](#)

### 1.3 RESPONSIBILITIES

The following table lists specific responsibilities:

Who	What
Group Leader	Assure that qualified staff complies with regulatory requirements associated with the MSGP.
Project Lead	Ensure that MSGP-related activities are performed in accordance with the requirements specified in this plan.
ENV-CP Staff	Perform MSGP-related activities as assigned by the Team Leader or Project Leader

## 2.0 PERSONNEL DEVELOPMENT

Qualified team members will be hired and trained as prescribed in [ENV-DO-QP-115, Personnel Training](#). Minimum training requirements for ENV personnel are described in the ENV Division Qualification Standards. The LANL Human Resources Division maintains documentation of education qualification. Required MSGP qualifications and training plans are listed below.

### 2.1 MSGP CURRICULA

The MSGP Program requires personnel with the following training requirements:

#### MSGP Inspectors

Curricula 10697 ENV-RCRA MSGP Inspector

Item 43337 ENV-CP-QAPP-MSGP

Item 54892 ENV-RCRA-QP-022 MSGP Stormwater Corrective Actions

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Item 42415 ENV-DO-QP-101 *Environmental Reporting Requirements for Releases or Events*  
 Item 42547 ENV-DO-QP-111 *Reporting Environmental Releases to Pueblo Governments*  
 Item 40708 ENV-DO-QP-108 *Preparation of External Correspondence for Review and Approval*  
 Item 43172 ENV-DO-QP-112 *Coordinating Regulatory Inspections*  
 Item 42891 ENV-DO-QP-113 *Tracking Issues and Actions*  
 Item 43805 ENV-DO-QP-114 *Logbook Use and Control*  
 Item 45777 ENV-DO-QP-100 *General Field Safety*

Curricula 131 Field Worker Training Requirements

Item 43562 or 3583 or 16585 CPR/AED: LANL Workplace  
 Item 3574 or 13264 First Aid

MSGP SWPPP Preparers

Curricula 7814 ENV-RCRA MSGP SWPPP Preparer

Item 43337 ENV-CP-QAPP-MSGP  
 Item 56593 ENV-RCRA-QP-044 *Preparing Storm Water Discharge Monitoring Reports (MDMRs) for the NPDES Multi-Sector General Permit*  
 Item 40708 ENV-DO-QP-108 *External Correspondence*  
 Item 43172 ENV-DO-QP-112 *Coordinating Regulatory Inspections*  
 Item 42891 ENV-DO-QP-113 *Tracking Issues and Actions*  
 Item 43805 ENV-DO-QP-114 *Logbook Use and Control*  
 Item 45777 ENV-DO-QP-100 *General Field Safety*

Curricula 51 ENV-RCRA Design Engineer

Item 44269, COE Review of LANL Produced Design Documents, AP-341-620  
 Item 44266, COE System Design Descriptions, AP-341-61  
 Item 44263, COE Engineering Drawings and Sketches, AP-341-608  
 Item 44261, COE Calculation, AP-341-605  
 Item 44258, COE Requirements and Criteria Document, AP-341-602  
 Item 44257, COE Functions & Requirements Document, AP-341-601  
 Item 43658, CORE Engineering Overview  
 Item 55428, COE Management Level Determination, AP-341-502  
 Item 54168, P342 Engineering Standards  
 Item 47029, COE LANL Review of Design by External Agencies, AP-341-622  
 Item 43666, Engineering Design Management  
 Item 43663, Engineering Technical Baseline  
 Item 44225, COE Evaluation of Vendor Information, AP-341-701

MSGP Visual Assessors

Curricula 10698 ENV-RCRA MSGP Visual Assessor

Item 43337 ENV-RCRA-QAPP-MSGP  
 Item 50493 ENV-RCRA-QP-064 *MSGP Storm Water Visual Assessments*  
 Item 42415 ENV-DO-QP-101 *Environmental Reporting Requirements for Releases or Events*  
 Item 42547 ENV-DO-QP-111 *Reporting Environmental Releases to Pueblo Governments.*  
 Item 40708 ENV-DO-QP-108 *External Correspondence*

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Item 43172 ENV-DO-QP-112 *Coordinating Regulatory Inspections*

Item 42891 ENV-DO-QP-113 *Tracking Issues and Actions*

Item 43805 ENV-DO-QP-114 *Logbook Use and Control*

Item 45777 ENV-DO-QP-100 *General Field Safety*

Curricula 131 Field Worker Training Requirements

Item 43562 or 3583 or 16585 CPR/AED: LANL Workplace

Item 3574 or 13264 First Aid

## 2.2 MSGP INSPECTOR QUALIFICATIONS

### Inspections:

- Post high school education or experience in engineering or environmental science or a related field; or industrial site field experience involving stormwater pollution prevention.
- 2 years experience of completing MSGP inspections or 1 year MSGP inspection experience with the Certified Inspector of Sediment and Erosion Control (CISEC) certification.
- 6 months knowledge of LANL facility operations.
- Demonstrated ability, as determined by the Multi-Sector General Permit Project Lead and/or Water Quality Team Leader, to successfully and effectively evaluate and identify the following at industrial sites:
  - Conditions and activities that could impact stormwater quality at the facility.
  - Inadequate or ineffective BMPs.
  - Required modification or maintenance of existing BMPs.
  - Locations requiring new or additional BMPs.
  - Potential pollutant sources associated with the facility.
  - Appropriate and correct site stabilization measures.
- Demonstrated ability, as determined by the Multi-Sector General Permit Project Lead and/or Water Quality Team Leader, to evaluate the compliance status of each industrial facility and document identified issues during an inspection.
- Demonstrated ability, as determined by the Multi-Sector General Permit Project Lead and/or Water Quality Team Leader, to properly and effectively complete inspection reports, including the ability to perform the following:
  - Prepare reports in a clear, concise manner, identifying site conditions and issues.
  - Write legibly and describe conditions clearly and accurately.
  - Use proper spelling and grammar.
  - Complete the MSGP Routine Inspection Report forms accurately.
  - Accurately enter findings into the Corrective Actions Report database.
- Conduct inspections in a professional manner.
- Be a member of, or contractor supporting, ENV-RCRA or ENV Division.

## 2.3 MSGP SWPPP PREPARER QUALIFICATIONS

### SWPPP Preparation:

One of the 2 criteria below must be satisfied:

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- BS degree or experience in engineering, environmental science, or related field, with a background involving stormwater pollution prevention and regulatory compliance relating to MSGP sites and a 1 year minimum of LANL facility operations knowledge and 1 year experience of completing MSGP inspections; or
- Certified Professional in Erosion and Sediment Control (CPESC) or Professional Engineer (PE) with a demonstrated background in stormwater management, sediment and erosion control, and regulatory compliance.

In addition to:

- Demonstrated ability, as determined by the Multi-Sector General Permit Project Lead and/or Water Quality Team Leader, to:
  - Prepare SWPPPs per LANL format and in compliance with NPDES MSGP requirements.
  - Identify and specify appropriate BMPs and stabilization measures.
  - Identify potential pollutant sources associated with the facility.
  - Perform necessary calculations to meet regulatory requirements.
  - Prepare a site map.
  - Be a member of, or contractor supporting, ENV-CP or ENV Division.

#### 5.4 MSGP VISUAL ASSESSOR QUALIFICATIONS

##### Quarterly Visual Assessments:

- Education or experience in engineering, environmental science, or a related field; or industrial site field experience involving stormwater pollution prevention; and
- Completed ENV-RCRA training on how to collect and evaluate visual assessment; and
- Demonstrated ability, as determined by the Multi-Sector General Permit Program Lead and/or Water Quality Team Leader, to:
  - Collect quarterly visual samples at the designated outfall.
  - Complete the applicable portions of the MSGP Quarterly Visual Assessment Form.
  - Have working knowledge of the regulatory requirements in Section 4.2 of the MSGP.

#### 5.5 TRAINING RESPONSIBILITIES

All personnel performing MSGP project-related work are required to obtain appropriate training prior to performing work governed by a procedure. Training for all project personnel will be performed and documented in accordance with [ENV-DO-QP-115, \*Personnel Training\*](#).

The following table lists specific responsibilities regarding training requirements.

Who	What
Group Leader	Ensure project personnel meet all Laboratory training requirements.
Program Lead	Establish and document job descriptions for each position within the MSGP Project.  Ensure all project personnel have the appropriate level of education,



	experience, and training.
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### 3.0 QUALITY IMPROVEMENT

The MSGP Project subscribes to the principles of problem prevention and continuous improvement. The Project Lead is committed to evaluating improvement opportunities identified by trending and reporting.

The Project Lead provides verbal and written updates, as needed, to the Team Leader and Group Leader to keep group management apprised of the focus of the MSGP Project activities and to address any shortcomings that may be identified.

#### 3.1 CORRECTIVE ACTIONS WITHIN ENV-RCRA

Corrective actions for all ENV-RCRA programs and projects are initiated, tracked, corrected, and documented according to *P330-6 Nonconformance Reporting*, *P322-4 Laboratory Performance Feedback and Improvement Process*, *SD330, Los Alamos National Laboratory Quality Assurance Program*, and Division/Group procedures.

#### 3.3 QUALITY IMPROVEMENT RESPONSIBILITIES

The following table lists specific responsibilities for quality improvement:

Who	What
Project Lead	Monitor program performance and ensure issues are corrected in a timely manner.
ENV-CP Staff	<p>Identify opportunities for process improvement, health and safety enhancement, environmental protection, or other improvements of the program's operations.</p> <p>Discuss the identified opportunities with the Project Lead.</p> <p>Ensure issues are reported and corrected in a timely manner.</p>

### 4.0 DOCUMENT CONTROL/RECORDS MANAGEMENT

The program lead, at least one reviewer, and the Group Leader will approve all revisions to this plan. Revisions to the plan will be provided to the QA Specialist. This plan will be reviewed and revised (if necessary) biennially.

This document will be controlled under the organization's document control system (*ENV-DO-QP-106, Document Control*). Controlled copies of ENV documents are located on the Internet: <http://int.lanl.gov/orgs/env/rcra/qa.shtml>, all other copies are uncontrolled.

Procedures will be developed as necessary and in accordance with *ENV-DO-QP-105, Preparation, Review, and Approval of Procedures*.

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Phone calls, email, or fax communications will be documented and controlled if the content provides direction or results in decisions.

#### 4.1 PROGRAM RECORDS

The number, type, and detail of all records to be kept will provide sufficient information to allow an individual with equivalent education and training to verify or reconstruct the results. Implementing procedures specify the records, forms, logbook entries, or other information to be kept as documentation of the performance of the procedure.

Records to be kept in the ENV-CP records system include the following:

- Copy of the Multi-Sector General Permit
- Annual Site Compliance Evaluation reports
- Corrective Action Reports
- Reports and certifications required by MSGP
- Records of all data used to complete MSGP Notice of Intent
- Discharge Monitoring Reports

Records to be kept by the Deployed Environmental Professional assigned to the FOD in which the industrial facility resides includes the following:

- Copies of Stormwater Pollution Prevention Plans
- Reports and certifications required by MSGP
- Routine Inspection Forms
- Supporting analytical data reports including Visual Assessment Forms
- Corrective Action Reports
- Discharge Monitoring Reports
  - Annual Site Compliance Evaluation reports

All ENV-CP records will be maintained and available (after the deadline for submittal as given in applicable procedures) for auditing in the records center at ENV-CP ([ENV-DO-QP-110, Records Management](#)). Records will be archived in compliance with Laboratory and DOE requirements for records retention, storage, and management.

#### 4.2 PROGRAM RECORDS RESPONSIBILITIES

The following table lists specific responsibilities for program records management:

Who	What
Team Leader	Ensure QAPP meets minimum specifications for documentation and records of the <i>SD330, Los Alamos National Laboratory Quality Assurance Program</i>
Program Lead	Conduct annual review of records to ensure compliance with project requirements.

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### 4.3 ELECTRONIC MEDIA

The project will utilize electronic means as necessary to maintain data and perform calculations on these data. Electronic means will not however replace paper copies. All records that must be maintained to meet the requirements of the Permit will be kept in hard copy as the official record.

### 4.4 DATABASES

Analytical data will be maintained in the LANL Water Quality Database (WQDB). Security, verification, and validation of data are maintained in accordance with LANL procedures.

Security -- ENV data will be maintained electronically in a secure manner and will be protected from loss by being maintained as part of an official dataset that is backed up at least weekly.

Verification of data -- All ENV data, either electronic or hardcopy must undergo a verification and validation process that includes the following:

#### Verification

- Paper deliverables match electronic data that are stored in an official dataset. Paper deliverables include:
  - chain of custody for sample data
  - field log, if applicable, for sample data
  - data packages for analytical data
  - documentation packages for supporting data (e.g., geographic information system)
- All hand-entered data have been verified by a person other than the individual performing the entry
- Electronic uploads of data (e.g., electronic data deliverables) have been spot checked (at least 10%) to ensure the upload performed as expected
- Hard copy supporting information (e.g., data packages, chains of custody, validation reports, etc.) is evaluated for completeness, archived, and available for audit

Validation --analytical data validation is the responsibility of the EP Directorate. The process will include the following:

- Validate that sample and quality assurance/quality control data and information meet contract specifications
- Assign validation flags, as appropriate
- Identify the analytical supplier
- Identify the analytical method

Verification of calculations -- A person other than the person who generated the query will review for accuracy all compliance related calculations performed in a database through queries. This review will be documented and forwarded to the appropriate record series.

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### **Spreadsheets:**

Backups -- All spreadsheets used to hold data and generate reports to be used in demonstrating compliance will be maintained in a secure location. The preferred location is on the Group server. Spreadsheets will be backed up at least weekly.

Verification of data -- All compliance-related data uploaded into a spreadsheet will be verified to be accurate against the original paper copy. Data that are uploaded through electronic means will undergo a 10% verification. Data that are uploaded through manual means will undergo a 100% verification. Someone other than the data entry person must perform the 100% review. This review will be documented and forwarded to the appropriate record series.

Verification of calculations -- A person other than the person who generated the spreadsheet will review for accuracy all compliance-related calculations performed in a spreadsheet. This review will be documented and forwarded to the appropriate record series. Modifications to the function of these spreadsheets will also be verified in this manner.

Software control -- The integrity of spreadsheets will be ensured by limiting access to these spreadsheets to only trained, authorized personnel. Additionally, at least once per year, the function of the spreadsheets will be verified by hand calculations. Documentation of this review will be forwarded to the appropriate record series.

## **4.4 IMPLEMENTATION RESPONSIBILITIES**

The following table lists specific responsibilities:

<b>Who</b>	<b>What</b>
Program Lead	Regularly assess data integrity methods used by MSGP personnel.

## **5.0 PLANNING AND PERFORMING WORK**

Work conducted under this program ensures compliance with the 2008 Multi-Sector General Permit; the Clean Water Act; and DOE Orders 450.1, *Environmental Protection Program*, and 5400.5, *Radiation Protection of the Public and Environment*.

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

Work will be performed according to applicable plans and implementing procedures. The team leader will provide first line supervision of personnel assigned to project tasks to ensure work is performed to achieve project quality specifications. Before changing a work process that affects the project quality specifications, the team leader will ensure the same level of planning and review as used in the initial project planning steps.

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## 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.

All work is planned and performed using the principles of Integrated Safety Management and in compliance with [P300, \*Integrated Work Management for Work Activities\*](#).

## 5.3 WORK PERFORMANCE

Management should ensure that the following are clearly identified and conveyed to workers prior to beginning work:

- customer and data requirements for the work and final product;
- acceptance criteria applicable to work and final product;
- hazards associated with the work;
- technical standards applicable to work and final product; and
- safety, administrative, technical, and environmental controls to be employed during the work.

The work processes used to meet the regulatory requirements and the requirements of this plan can be divided as follows:

- Stormwater Pollution Prevention Plans (Multi-Sector General Permit Section 5.0)
- Inspections (Multi-Sector General Permit Section 4.0)
- Monitoring (Multi-Sector General Permit Section 6.0)
- Discharge Monitoring Reports (Multi-Sector General Permit Section 7.1 – Reporting Monitoring Data to EPA)
- Best Management Practices (Multi-Sector General Permit Section 2.0 –Control Measures)
  - Reporting and Recordkeeping (Multi-Sector General Permit Section 7.0)

## 5.4 STORMWATER POLLUTION PREVENTION PLAN

Stormwater Pollution Prevention Plan (SWPPP) development and implementation by the regulated industrial facility is required for MSGP compliance (refer to Section 8.0 of the 2008 MSGP for *Sector-Specific Requirements for Industrial Activity* and Appendix D, *Sectors of Industrial Activity Covered by This Permit*). 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

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action) requirements identified in the 2008 MSGP permit. The SWPPP is a written assessment of potential sources of pollutants in stormwater runoff and control measures that will be implemented at the specific industrial facility to minimize the discharge of pollutants in runoff from the site. These control measures include site-specific Best Management Practices (BMPs), inspections, employee training, and reporting. The 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 requiring Facility Management support in implementation, improvement, and revision of the Plans.

#### **5.4.1 DISCHARGE MONITORING REPORTS**

The Laboratory is required to submit analytical results of stormwater monitoring and to keep the results with the facility specific SWPPP. The Laboratory must certify and submit analytical monitoring results obtained from each facility specific sampling location (i.e., the sampling station located at the monitored outfalls) associated with industrial activity on a Discharge Monitoring Report (DMR) form or use it to report any of the following:

- no discharge for all outfalls for a specific monitoring period;
- the industrial facility status has changed to inactive and unstaffed;
- the facility status has changed to active; or
- no further pollutant reductions are achievable for all outfalls and for all pollutants (see Section 6.2.1.2 of the 2008 MSGP).

#### **5.4.2 ANNUAL SITE COMPLIANCE EVALUATION REPORT**

The Laboratory is required to submit an annual report (Attachment 2) to the Environmental Protection Agency (EPA) that includes the findings from the comprehensive site inspection and any corrective action documentation. The documentation must include the following:

- identification of the condition triggering the need for corrective action review;
- date and description of the problem identified;
- summary of the corrective action taken or to be taken;
- notice of whether SWPPP modifications are required as a result of the discovery or corrective action;
- date corrective action was initiated; and
- date corrective action was completed or is expected to be completed.

The following table lists responsibilities:

<b>Who</b>	<b>What</b>
Project Lead	Ensure that SWPPP requirements are performed in accordance with the MSGP.

Facility Management Support	Implement SWPPP requirements as recommended by the Project Lead.
ENV-CP Staff and Deployed Environmental Professionals (DEPs)	Assure SWPPP implementation as required by MSGP.
DEPs	Develop, modify, and update SWPPPs and assist facility personnel with SWPPP implementation.

## 5.5 INSPECTIONS

The MSGP requires periodic inspection of industrial processes and maintenance of (BMPs) to assure effectiveness of control measures. The Laboratory has implemented a quarterly or monthly inspection process (depending on the industrial facility) to support this determination. A copy of the Routine Inspection Form is provided in Attachment 3.

## 5.6 STORMWATER MONITORING

Benchmark stormwater monitoring is the required mechanism for determining the effectiveness of corrective actions and meeting the requirements of the MSGP. Refer to Attachment 4, *MSGP Facilities and Stormwater Monitored Outfalls Associated with Industrial Activity 2011*, for a list of Laboratory sites that have monitoring requirements. Laboratory management has made an investment in time and materials, in addition to a commitment to comply with the 2008 MSGP Permit. All stormwater monitoring is conducted by ENV-CRP personnel. The MSGP Project currently has a network of 23 monitoring stations. Considerations to be used for MSGP stormwater monitoring development decisions will include MSGP requirements, new state water quality standards, Administrative Authority requests, or new permit requirements. Stormwater monitoring will be conducted as specified in the MSGP.

Effluent Limitations stormwater monitoring is required for the following type of facility of LANL:

Regulated Activity	Parameter	Effluent Limit	Monitoring Frequency	Sample Type
Discharges from asphalt emulsion facilities	Total Suspended Solids	23.0 mg/L daily max.  15.0 mg/L, 30-day avg.	1/year	grab
	pH	6.0-9.0 s.u.	1/year	grab
	Oil and Grease	10.0 mg/L  30-day avg.	1/year	grab



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This determination was made in accordance with Section 1.1.2.4 of the MSGP. The TA-60 Asphalt Batch Plant meets the criteria for effluent limitations monitoring in this section. Exceedances of the effluent limits in this table require immediate action. In addition, if follow-up monitoring after corrective actions also exceeds an effluent limit guideline, an Exceedance Report for Numeric Effluent Limits must be submitted to EPA no later than 30 days after lab results have been received and verified.

Impaired Waters stormwater monitoring is required for discharges made to an impaired water. The canyons within and surrounding Los Alamos National Laboratory are declared as Impaired Waters by the New Mexico Environment Department. The pollutants vary from canyon to canyon and are listed in Attachment 5, *Pollutants Under Impaired Waters Monitoring*. 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.

Visual assessments are also required by the MSGP and are an important tool for collecting information to determine the effectiveness of controls in preventing potential contaminants from migrating off Laboratory property. Accordingly, field personnel must 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 will document all observations that are required by the MSGP (see [ENV-RCRA-QP-064, Multi-Sector General Permit Storm Water Visual Inspections](#)).

The Laboratory's MSGP permit requires stormwater quality monitoring to evaluate compliance with water quality standards and evaluation against benchmarks. Parameters sampled at the monitoring stations are selected based on permit requirements and the results of the previous year.

Four stormwater samples per year are required under the 2008 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 Section 6.1.5 of the MSGP). Sample locations are listed in Attachment 4, *MSGP Facilities and Stormwater Monitored Outfalls Associated with Industrial Activity 2011*, and collection will be conducted in accordance with LANL and NPDES Permit requirements and the current year MSGP Sampling and Analysis Plan.

Stormwater samples are used to demonstrate compliance with water quality standards and requirements to evaluate results against benchmark parameters (Attachments 5 and 6). Any persons involved in the preparation, retrieval, and analysis must maintain positive control of samples at all times until sample disposal. ENV-RCRA personnel will follow guidance in the Associate Directorate for Environmental Programs (ADEP) document [ENV-WQH-QP-029, Creating and Maintaining a Chain of Custody](#), as well as, [ENV-RCRA-QP-047, Inspecting Storm Water Runoff Samplers and Retrieving Samples](#), and [ENV-RCRA-QP-048, Processing MSGP Storm Water Samples](#).

Chain of custody is maintained during:

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

The LANL Sample Management Office (SMO) will be the central point for all analytical laboratory selection, evaluations, sample submittal, and data return. The SMO will evaluate potential analytical laboratories, prepare analytical statements of work that include requirements, and arrange contracts with selected laboratories for analysis of all samples. The SMO will accept samples from field collection personnel, process the sample, ship the samples to the off-site analytical laboratories, and receive the data packages from the laboratories.

All analytical data will be received from analytical laboratories in electronic format and uploaded into a database. All received data will be checked for completeness and adherence to contract requirements. After uploading, all data will undergo verification and validation (V&V) 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 will be verified and validated by the SMO when field personnel deliver samples to the SMO.

If significant V&V issues are identified, results will be forwarded to and discussed with the responsible project leads.

Data issues that result from procedural failures, personnel errors, or other failures to follow requirements will be documented as issues and corrected according to [ENV-DO-QP-113, Tracking Issues and Actions](#).

The following table lists responsibilities:

Who	What
Project Lead	<p>Ensure that all project monitoring requirements are performed in accordance with the MSGP.</p> <p>Review and update the MSGP Sampling and Analysis Plan annually.</p>

	When complete, communicate findings to the team members for implementation. Make appropriate arrangements with the SMO to accept, process, and submit samples to an analytical laboratory for required analyses as specified in the SAP.
MSGP Water Quality Compliance Personnel	<ul style="list-style-type: none"> <li>Implement monitoring program as required by the MSGP Project Lead.</li> <li>Conduct stormwater sampling in accordance with the MSGP Sampling and Analysis Plan and applicable procedures.</li> <li>Ensure procedures for sample handling and control during sample preparation and retrieval are followed.</li> </ul>
Sample Management Office	<ul style="list-style-type: none"> <li>Develop Statements of Work (SOW) for all analytical laboratories that perform analytical work for the MSGP project in accordance with <a href="#">P840-1, Procurement Quality</a>.</li> <li>Ensure analytical laboratories comply with the DOE's SOW. Conduct an annual audit of the laboratory to ensure compliance with the SOW.</li> <li>Approve Statements of Work for analytical laboratories that are contracted to analyze water samples.</li> <li>Approve analytical laboratories that are contracted to analyze water samples for regulatory compliance purposes.</li> <li>Accept samples and submit them to an approved analytical laboratory for analysis.</li> <li>Track progress of samples at the analytical laboratory and resolve issues with sample analysis.</li> <li>Receive data packages from the analytical laboratory and enter data into the database.</li> <li>Provide the MSGP Project Lead with monthly invoice updates.</li> <li>Perform V&amp;V of field data submitted and uploaded from forms when samples are submitted to the SMO.</li> </ul>
Operations Integration Office (OIO), Systems Integration (SI)	Perform V&V of data packages uploaded by the SMO or send data packages to a subcontractor company for independent V&V.

## 5.7 DISCHARGE MONITORING REPORTS

The Laboratory is required to submit analytical results of stormwater monitoring and to keep the results with the specific SWPPP. The Laboratory must submit analytical monitoring results obtained from each monitoring station associated with industrial activity on a MSGP Discharge Monitoring Report (MDMR) form (one form must be submitted for each storm event from which, a sample was collected).

MDMRs shall be written in accordance with [ENV-RCRA-QP-044, Preparing Storm Water Discharge Monitoring Reports \(MDMRs\) for the NPDES Multi-Sector General Permit](#). MDMRs shall be submitted to EPA within 30 calendar days of receiving validated

analytical results. Refer to the DMR language under the SWPPP Section above for additional requirements.

Site analytical requirements are defined by the industrial activity in the MSGP permit. All MSGP analytes applicable to LANL are consistent with the requirements of 40 CFR Part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants*.

Sample analytical requirements vary by site depending on the industrial activities performed at the site. Refer to Attachment 5 for a list of analytes by industrial sector. If an insufficient quantity of sample is available, then sample collection will be prioritized at that location for future events. Additional samples may be collected to meet permit requirements.

ENV-RCRA shall refer to the requirements of the 2008 Multi-Sector General Permit, and the most current MSGP Sampling and Analysis Plan to determine the priorities of required analyses.

The following table lists responsibilities:

Who	What
Project Lead	<ul style="list-style-type: none"> <li>• Ensure implementing procedures for sample analyses are used.</li> <li>• Ensure that MDMRs are submitted to EPA and NMED in accordance with the MSGP.</li> </ul>
MSGP Water Quality Compliance Personnel	Assure MDMRs are completed and certified as required by the MSGP and have received a full quality assurance review.

## 5.8 ADVERSE WEATHER CONDITIONS AND CLIMATES WITH IRREGULAR STORMWATER RUNOFF

Section 4.2.3 of the 2008 MSGP allows the industrial facility to take a substitute sample during the next qualifying storm event when adverse weather conditions prevent the collection of samples during a specific quarter. 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. Documentation of the rationale for no visual assessment for the quarter must be included in the facility specific SWPPP.

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, LANL has identified an alternative monitoring period 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

The following table lists specific responsibilities.

Who	What
Project Lead	Ensure that the monitoring schedule is documented in facility specific SWPPPs and provided to EPA on the MDMRs.

## 5.9 REPORTING AND RECORDKEEPING

All monitoring data shall be collected in accordance with the requirements specified in the 2008 MSGP. LANL will submit monitoring results to EPA within 30 days of receiving validated laboratory results. The address for submittal of monitoring results is as follows.

U.S. Environmental Protection Agency  
 Office of Water, Water Permits Division  
 Mail Code 4203M, ATTN: MSGP Reports  
 1200 Pennsylvania Avenue, NW  
 Washington, D.C. 20460

LANL shall keep 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 2008 MSGP)
- Additional documentation requirements as identified in Section 5.4 of the MSGP
- All reports and certifications required by the MSGP
- Monitoring data
- Records of all data used to complete the NOI.

The following table lists specific responsibilities:

Who	What
Project Lead	Periodically audit MSGP records to ensure documentation of compliance is being retained.
Deployed Environmental Professionals	Retain records as required by the MSGP for industrial facilities located in their FOD.

## 5.10 BEST MANAGEMENT PRACTICES

It is critical that the Laboratory be able to effectively inspect and maintain the Best Management Practices that have been installed at various locations. Quarterly inspections must be completed and provided to the Project Lead for inclusion into the records system. In addition, the Project Leader conducts a Comprehensive Annual Site Inspection and writes a report to document the status of BMPs and other identified corrective actions. This report is sent to 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.

The following table lists responsibilities.

Who	What
Project Lead	Assist facility personnel and Deployed Environmental Professionals with implementation, inspection, and maintenance of BMPs at MSGP facilities.
Facility Management Support	<ul style="list-style-type: none"> <li>• Coordinate with Project Lead and provide funding as needed to install, inspect, maintain and implement identified BMPs.</li> <li>• Certify the corrective actions identified by the Project Lead and/or facility personnel (or their representatives) for their individual facilities in the Annual Report.</li> </ul>

## 5.11 INFORMATION MANAGEMENT

The Water Quality Database is a database information system designed in part to support the information management (IM) needs of the Laboratory's MSGP. MSGP support includes stormwater discharge monitoring reporting, Geographic Information System (GIS) development, and other IM activities as needed.

The following table lists responsibilities:

Who	What
Project Lead	Coordinate with IM support personnel to meet regulatory requirements.

## 5.12 RESPONDING TO WATER QUALITY EXCEEDANCES

The identification of a pollutant source(s) contributing to a water quality exceedance will be addressed through the creation of a corrective action that is entered into the Corrective Action

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Report database in accordance with [ENV-DO-QP-113, \*Tracking Performance Feedback and Actions\*](#) and [ENV-RCRA-QP-022, \*MSGP Stormwater Corrective Actions\*](#). Federal stormwater regulations implemented under the Laboratory's MSGP (40 CFR 122, EPA Administered Permit Programs: The National Pollutant Discharge Elimination System) require that corrective action be taken if exceedances of water quality standards or MSGP numeric effluent limits are identified. Corrective actions are typically accomplished by modifying, as appropriate, existing BMPs and SWPPPs.

When a water quality exceedance occurs, the Laboratory will submit the data on the required MDMRs, investigate the occurrence, and document corrective actions.

When an exceedance of the MSGP benchmark parameters is detected, the Project Lead will assure the analytical data is reviewed, notify appropriate SWPPP owners, and recommend and track corrective actions where required.

The following steps lead to corrective actions:

STEP	Action
1	Establish that an analytical result from a location is valid and has exceeded a standard or MSGP benchmark.
2	Evaluate and demonstrate that the analyte is of LANL origin, if possible.
3	Determine the source and assign responsibility for the corrective action.
4	Develop a corrective action plan.

The following table lists responsibilities:

Who	What
Project Lead	<ul style="list-style-type: none"> <li>Assure that analytical data is reviewed and accurate.</li> <li>Notify appropriate SWPPP owners, Laboratory management, and Deployed Environmental Professionals.</li> <li>Develop a corrective action plan.</li> <li>Follow up with corrective actions if required.</li> <li>Track corrective actions.</li> </ul>
Facility Management and DEP	<ul style="list-style-type: none"> <li>Review analytical data with Project Lead and provide input into a possible corrective action necessary to improve water quality where needed.</li> <li>Evaluate and improve BMPs in accordance with site conditions, industry standards, and manufacturer</li> </ul>



	recommendations.
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### 5.13 INSTRUMENTATION AND EQUIPMENT

Compliance will be tracked by performing inspections of samplers and other associated equipment, inspecting BMPs, and conducting annual site compliance evaluations. Adequate records will be maintained to demonstrate the operating history of essential instrumentation and equipment.

LANL will properly operate and maintain all systems of monitoring and control and related appurtenances which 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. All technical work that depends upon the accuracy of data will be performed using equipment for which the calibration status and limits of accuracy are known and controlled.

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

The following table lists specific responsibilities.

Who	What
Project Lead	<ul style="list-style-type: none"> <li>• Ensure data are collected and equipment is operated and maintained in accordance with project requirements.</li> <li>• Provide equipment maintenance and calibration specifications and ensure MSGP Water Quality Compliance Team personnel operate and conduct field activities in accordance with implementing procedures and specific work orders.</li> </ul>

## 6.0 DESIGN

Design activities will be conducted and reviewed in accordance with [PD340, \*Conduct of Engineering\*](#) and [P341, \*Engineering Process Manual\*](#).

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

Design inputs will be specified and approved on a timely basis for making design decisions. Inputs will 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, will be 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.

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.

The following table lists responsibilities.

Who	What
Project Lead	<ul style="list-style-type: none"> <li>• Provide input to the design process in accordance with appropriate standards, requirements, and implementing procedures.</li> <li>• Determine the qualifications required to perform a review of design documents.</li> <li>• Identify a resource with skills, knowledge, ability, training, and certifications required to complete the review of the facility engineering design documents.</li> <li>• Communicate the results of the review to the requestor.</li> </ul>
ENV-CP Staff	<p>Review design documents and requests as assigned.</p> <p>Inform the Project Lead of concerns regarding the facility engineering designs.</p>

## 7.0 PROCUREMENT

Items and services required for this process are commercial grade in nature and no special procurement requirements or needs are necessary. All procurements will be made in accordance with [P840-1, Procurement Quality](#). For items and all services for which special requirements are necessary, the Project Lead and project members will identify such items or services.

The following table lists responsibilities:

Who	What
Group Leader	Ensure all procurements are conducted in accordance with P840-1.
Project Lead	<p>Recommend to Group Leader contracting items and services.</p> <p>Develop acceptance criteria.</p>
ENV-CP Staff	Identify potential suppliers of products or services necessary to complete work activities that must be procured from outside ENV-RCRA.

## 8.0 INSPECTION AND ACCEPTANCE TESTING

Any materials or services will be inspected and/or tested prior to acceptance for use in this project in accordance with [P330-8, \*Inspection and Test for Acceptance\*](#). Most supplies used during performance of project activities are commercial grade in nature and require no special acceptance practices or procedures.

The following table lists responsibilities:

Who	What
Group Leader	Ensure procedures for inspection meet <a href="#">SD330, <i>Los Alamos National Laboratory Quality Assurance Program</i></a> requirements.
Project Lead	Verify that all materials and services meet acceptance criteria.
ENV-CP Staff	Follow established procedures for inspection and acceptance testing.

## 9.0 MANAGEMENT ASSESSMENT

The ENV-CP Group conducts internal management assessments of projects and programs in accordance with the requirements in [P328-3, \*Management Assessment\*](#) and [P328-4, \*Management Observation and Verification\*](#). Assessments of the program are documented and filed as records.

When violations of requirements are found during a management assessment, a nonconformance report is initiated in accordance with [P330-6, \*Nonconformance Reporting\*](#) for nonconforming items.

Nonconforming services or processes are tracked and documented in accordance with [P322-4, \*Issues and Corrective Action Management\*](#).

The following table lists responsibilities:

Who	What
Group Leader	Ensure management self-assessments for the MSGP program are conducted as specified in implementing procedures.
Project Lead	Ensure program management self-assessments are conducted.

## 10.0 INDEPENDENT ASSESSMENT

Independent assessments are those assessments conducted by organizations external to ENV-RCRA. 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](#).

Periodically audits/assessments will be conducted, with input from the Project Lead identifying one or more areas of the project to be audited.

The following table lists responsibilities:

Who	What
Project Lead	<ul style="list-style-type: none"> <li>• Approve audit schedules.</li> <li>• Provide input to the QA Specialist as to the content of audit.</li> <li>• Review audit reports for factual accuracy. Address all findings and implement corrective actions as appropriate.</li> </ul>
QA Specialist	<ul style="list-style-type: none"> <li>• Identify areas to be addressed during internal audits.</li> <li>• Contract with the Quality Management Group to perform annual internal audits.</li> <li>• Review audit procedures to ensure they meet the requirements in this section.</li> </ul>
Team Members	<p>Cooperate with auditors by providing information, data, etc.</p> <p>Implement corrective actions as directed by the Project Lead.</p>

## 11.0 ATTACHMENTS

Attachment 1- MSGP Program Organization

Attachment 2 – Annual Reporting Form

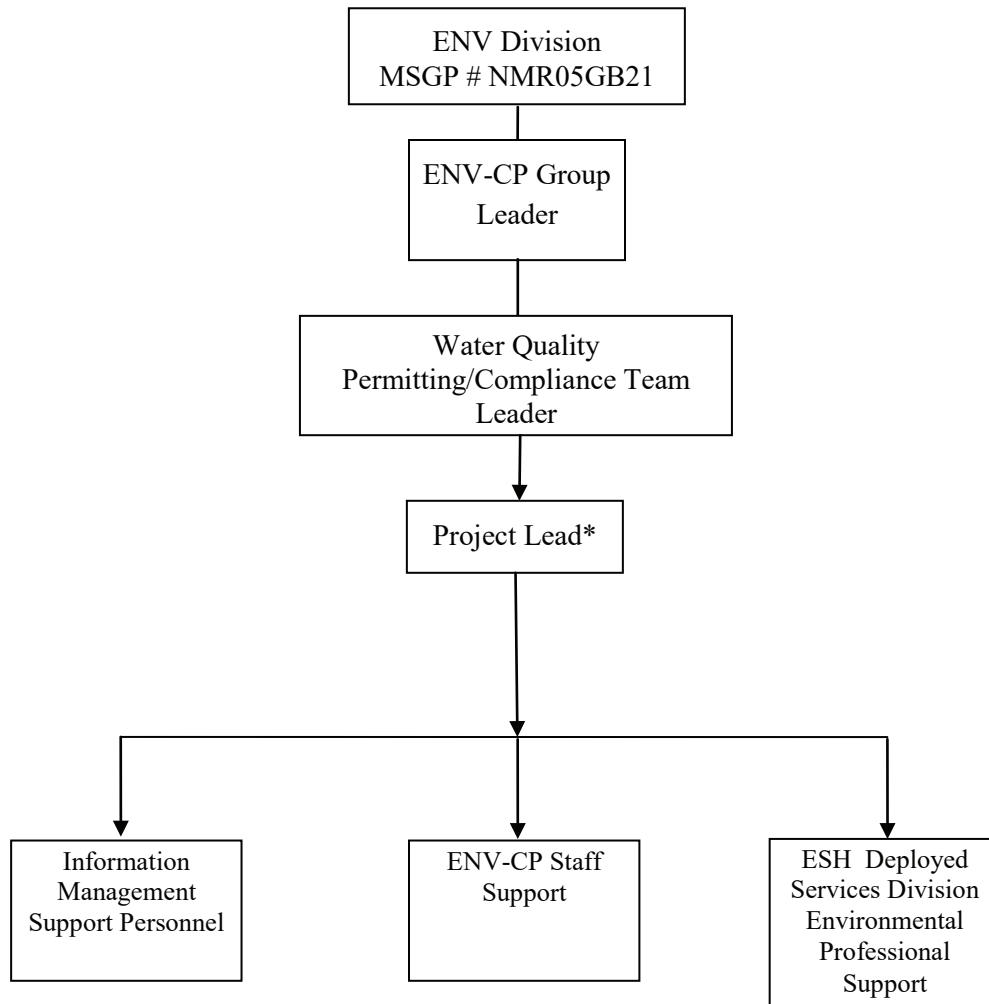
Attachment 3 – Routine Inspection Form

Attachment 4 – MSGP Facilities and Storm Water Monitored Outfalls Associated with Industrial Activity 2011, Permit NMR05GB21

Attachment 5 – Pollutants under Impaired Waters Monitoring

Attachment 6 – Analytes by Industrial Sector

Attachment 7 – References and Guidance Documents

**ATTACHMENT 1- MSGP PROGRAM ORGANIZATION**

\*Project Lead acts as liaison and will work directly with Team Leaders for staff assignments.

## ATTACHMENT 2 – ANNUAL REPORTING FORM

NPDES Permit Tracking No.:

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

# Annual Reporting Form

### A. GENERAL INFORMATION

1.	Facility Name:
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**2. NPDES Permit Tracking No.:**

3. Facility Physical Address:

a. Street:

b. City: | | | | | | | | | | | | | | | | | | | | | | c. State: | | d. Zip Code: | | | | | | - | | |

4. Lead Inspectors Name: \_\_\_\_\_ Title: \_\_\_\_\_

Additional Inspectors Name(s):

[illegible][illegible]

6. Inspection Date: | | / | | / | | |

## B. GENERAL INSPECTION FINDINGS

1. As part of this comprehensive site inspection, did you inspect all potential pollutant sources, including areas where industrial activity may be exposed to stormwater?  
☐ YES ☐ NO

If NO, describe why not:

**NOTE:** Complete Section C of this form for each industrial activity area inspected and included in your SWPPP or as newly identified in B.2 or B.3 below where pollutants may be exposed to stormwater.

2. Did this inspection identify any stormwater or non-stormwater outfalls not previously identified in your SWPPP? ☐ YES ☐ NO

If YES, for each location, describe the sources of those stormwater and non-stormwater discharges and any associated control measures in place:

NPDES Permit Tracking No.:

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3. Did this inspection identify any sources of stormwater or non-stormwater discharges not previously identified in your SWPPP? ☐ YES ☐ NO

If YES, describe these sources of stormwater or non-stormwater pollutants expected to be present in these discharges, and any control measures in place:

4. Did you review stormwater monitoring data as part of this inspection to identify potential pollutant hot spots? ☐ YES ☐ NO ☐ NA, no monitoring performed

If YES, summarize the findings of that review and describe any additional inspection activities resulting from this review:

5. Describe any evidence of pollutants entering the drainage system or discharging to surface waters, and the condition of and around outfalls, including flow dissipation measures to prevent scouring:

6. Have you taken or do you plan to take any corrective actions, as specified in Part 3 of the permit, since your last annual report submission (or since you received authorization to discharge under this permit if this is your first annual report), including any corrective actions identified as a result of this annual comprehensive site inspection?

☐ YES ☐ NO

If YES, how many conditions requiring review for correction action as specified in Parts 3.1 and 3.2 were addressed by these corrective actions?

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**NOTE:** Complete the attached Corrective Action Form (Section D) for each condition identified, including any conditions identified as a result of this comprehensive stormwater inspection.



NPDES Permit Tracking No.:

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**C. INDUSTRIAL ACTIVITY AREA SPECIFIC FINDINGS**

*Complete one block for each industrial activity area where pollutants may be exposed to stormwater. Copy this page for additional industrial activity areas.*

In reviewing each area, you should consider:

- Industrial materials, residue, or trash that may have or could come into contact with stormwater;
- Leaks or spills from industrial equipment, drums, tanks, and other containers;
- Offsite tracking of industrial or waste materials from areas of no exposure to exposed areas; and
- Tracking or blowing of raw, final, or waste materials from areas of no exposure to exposed areas.

INDUSTRIAL ACTIVITY AREA \_\_\_\_\_:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO

3. Have any control measures failed and require replacement? ☐ YES ☐ NO

4. Are any additional/revised control measures necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

INDUSTRIAL ACTIVITY AREA \_\_\_\_\_:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO

3. Have any control measures failed and require replacement? ☐ YES ☐ NO

4. Are any additional/revised c necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

INDUSTRIAL ACTIVITY AREA \_\_\_\_\_:

Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO

3. Have any control measures failed and require replacement? ☐ YES ☐ NO

4. Are any additional/revised BMPs necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

NPDES Permit Tracking No.:

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**NOTE:** Copy this page and attach additional pages as necessary

INDUSTRIAL ACTIVITY AREA \_\_\_\_\_:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO3. Have any control measures failed and require replacement? ☐ YES ☐ NO4. Are any additional/revised BMPs necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

INDUSTRIAL ACTIVITY AREA \_\_\_\_\_:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO3. Have any control measures failed and require replacement? ☐ YES ☐ NO4. Are any additional/revised BMPs necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

INDUSTRIAL ACTIVITY AREA \_\_\_\_\_:

1. Brief Description:

2. Are any control measures in need of maintenance or repair? ☐ YES ☐ NO3. Have any control measures failed and require replacement? ☐ YES ☐ NO4. Are any additional/revised BMPs necessary in this area? ☐ YES ☐ NO

If YES to any of these three questions, provide a description of the problem: (Any necessary corrective actions should be described on the attached Corrective Action Form)

NPDES Permit Tracking No.:

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**D. CORRECTIVE ACTIONS**

**Complete this page for each specific condition requiring a corrective action or a review determining that no corrective action is needed. Copy this page for additional corrective actions or reviews.**

Include both corrective actions that have been initiated or completed since the last annual report, and future corrective actions needed to address problems identified in this comprehensive stormwater inspection. Include an update on any outstanding corrective actions that had not been completed at the time of your previous annual report.

1. Corrective Action # 

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 for this reporting period.

2. Is this corrective action:

- ☐ An update on a corrective action from a previous annual report; or  
☐ A new corrective action?

3. Identify the condition(s) triggering the need for this review:

- ☐ Unauthorized release or discharge  
☐ Numeric effluent limitation exceedance  
☐ Control measures inadequate to meet applicable water quality standards  
☐ Control measures inadequate to meet non-numeric effluent limitations  
☐ Control measures not properly operated or maintained  
☐ Change in facility operations necessitated change in control measures  
☐ Average benchmark value exceedance  
☐ Other (describe): \_\_\_\_\_

4. Briefly describe the nature of the problem identified:

5. Date problem identified: 

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6. How problem was identified:

- ☐ Comprehensive site inspection  
☐ Quarterly visual assessment  
☐ Routine facility inspection  
☐ Benchmark monitoring  
☐ Notification by EPA or State or local authorities  
☐ Other (describe): \_\_\_\_\_

7. Description of corrective action(s) taken or to be taken to eliminate or further investigate the problem (e.g., describe modifications or repairs to control measures, analyses to be conducted, etc.) or if no modifications are needed, basis for that determination:

8. Did/will this corrective action require modification of your SWPPP? ☐ YES ☐ NO

9. Date corrective action initiated: 

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10. Date correction action completed: 

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 or expected to be completed: 

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11. If corrective action not yet completed, provide the status of corrective action at the time of the comprehensive site inspection and describe any remaining steps (including timeframes associated with each step) necessary to complete corrective action:

NPDES Permit Tracking No.:

[illegible]

### E. ANNUAL REPORT CERTIFICATION

### 1. Compliance Certification

Do you certify that your annual inspection has met the requirements of Part 4.2 of the permit, and that, based upon the results of this inspection, to the best of your knowledge, you are in compliance with the permit? ☐ YES ☐ NO

If NO, summarize why you are not in compliance with the permit:

## 2. Annual Report Certification

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

Authorized Representative  
Printed Name:

[illegible]

**Title:**

Signature: \_\_\_\_\_ Date Signed: \_\_\_\_\_

ATTACHMENT 3 – ROUTINE INSPECTION FORM

Name of Facility:		Responsible FOD (Name & Organization):	
Qualified Inspector(s): Others Present:		Inspection type: <input type="checkbox"/> Quarterly <input type="checkbox"/> Other	Date of inspection (MM/DD/YYYY): Time of inspection:
Weather: <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain <input type="checkbox"/> Sleet <input type="checkbox"/> Fog <input type="checkbox"/> Snow <input type="checkbox"/> High Winds <input type="checkbox"/> Other: _____ Temperature: _____ Is Inspection Being Conducted During a Storm Water Discharge? <input type="checkbox"/> Yes <input type="checkbox"/> No			
#	Structural Control Measures (BMP)s	Location	Operating Effectively (Yes or No)? If No, Need to Maintain (M), Repair (R) or Replace (RP)? Corrective Action Needed and Notes (Identify needed maintenance and repairs, or any failed control measures that need replacement)
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
Were additional BMPs or Control Measures implemented? <input type="checkbox"/> Yes <input type="checkbox"/> No Describe:			
Were previously identified conditions corrected before the next anticipated storm event? <input type="checkbox"/> Yes <input type="checkbox"/> No If No, describe reason:			
Area/Activity (Areas of Industrial Materials or Activities Exposed to Storm Water)	Inspected ?	Controls Adequate?	Corrective Action Needed and Notes (List area letter with comments below)
A. Material loading/unloading & storage areas			
B. Equipment operations & maintenance areas			
C. Fueling Areas			
D. Outdoor vehicle & equipment washing areas			
E. Waste Handling & disposal areas			
F. Erodible areas / construction			
G. Non-storm water / illicit connections			

H. Salt storage piles or pile containing salt			
I. Dust generation & vehicle tracking			
Are the SWPP Plan maintenance, schedules and procedures being implemented at the facility? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Were any Corrective Actions initiated or completed? <input type="checkbox"/> Yes <input type="checkbox"/> No Describe:			
Are there any conditions requiring Corrective Action? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, List Number of Corrective Actions Required _____			
(Note – You need enter a Corrective Action in the MSGP Corrective Action Report database for each listed)			

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**ATTACHMENT 4 -- MSGP FACILITIES AND STORM WATER MONITORED OUTFALLS ASSOCIATED WITH INDUSTRIAL ACTIVITY 2011,  
PERMIT NMR05GB21**

Location	Permitted Facility	Operation	Activity	Sector	Monitored Outfall	Canyon
TA-15-185	TA-15-185 PHERMEX	Vehicle Maintenance Shop	Vehicle Maintenance	P	15-PHRMX-1	• Water
TA-3-0034	TA-3-0034 Metal Shop	Fabricated Metals	Fabricated Metals	AA	3-MST-1	• Mortandad
TA-3-22	TA-3-22 Power & Steam Plant	Power Plant	Steam Electric Power	O	3-PSP-1	• Sandia
					3-PSP-5	•
					3-PSP-8	•
TA-3-38	TA-3-38 Metals Fab Shop	Metal Shop	Fabricated Metals	AA	3-MFS-1	• Sandia
TA-3-39	TA-3-39 & 102 Metal Shop	Metal Shop	Fabricated Metals	AA	3-TS-1	• Pajarito
TA-3-66	TA-3-66 Sigma Complex	Sigma Foundry	Primary Metals	F	3-Sigma-6	• Sandia
TA-54	TA-54 Area G	Area G - South Side	TSD	K	54-G-1	• Pajarito
TA-54	TA-54 Area G	Area G -North Side	TSD	K	54-G-2	• Canada del Buey
TA-54	TA-54 Area G	Area G - South Side	TSD	K	54-G-3	• Pajarito
TA-54	TA-54 Area G	Area G - South Side	TSD	K	54-G-4	• Pajarito
TA-54	TA-54 Area L	Area L	TSD	K	54-L-1	• Canada del Buey
TA-54-38	TA-54 RANT	RANT	TSD	K	54-RANT-1	• Canada del Buey
TA-60	TA-60 Asphalt Batch Plant	Asphalt Batch Plant	Asphalt Paving	D	60-ABP-1	• Mortandad
TA-60	TA-60 MRF	Materials Recycling Facility	Scrap Recycling	N	60-MRF-1	• Sandia
TA-60-250	TA-60 Roads and Grounds	Roads & Grounds Facility	Vehicle Maintenance & Storage	P	60-RG-1	• Mortandad
				P	60-RG-3	• Sandia
				P	60-RG-8	• Sandia
TA-60-1	TA-60-1 Heavy Equipment Yard	Motor pool	Vehicle Maintenance	P	60-HEY-2	• Sandia
TA-60-2	TA-60-2 Warehouse	Motor pool	Vehicle Maintenance	P	60-WH-1	• Sandia
TA-9-28	TA-9-28 Heavy Equipment Maintenance	Motor pool	Vehicle Maintenance	P	9-HEM-1	• Pajarito



## ATTACHMENT 5 – POLLUTANTS UNDER IMPAIRED WATERS MONITORING

Permitted Facility	Monitored Outfall	Assessment Unit	Canyon	Pollutant
TA-54 Area G	54-G-2	NM-128.A_00	Canada del Buey (within LANL)	PCBs
TA-54 Area L	54-L-1			Aluminum
TA-54-RANT	54-RANT-1			Gross Alpha
TA-54 Area G	54-G-1	NM-128.A_08	Pajarito Canyon (within LANL below Arroyo de la Delfe)	PCBs
TA-54 Area G	54-G-3			Aluminum
TA-54 Area G	54-G-4			Copper
				Gross Alpha
TA-15-185 PHERMEX	15-PHRMX-1	NM-128.A_13	Water Canyon (within LANL below Area-A Canyon)	PCBs
				Aluminum
				Gross Alpha
TA-3-39 & 102 Metal Shop	3-TS-1	NM-128.A_15	Two Mile Canyon (Pajarito to headwaters)	PCBs
				Aluminum
				Gross Alpha
TA-9-28 Heavy Equipment Maintenance	9-HEM-1	NM-128.A_16	Arroyo de la Delfe (Pajarito Canyon to headwaters)	Aluminum
				Mercury
				Gross Alpha
TA-60 Asphalt Batch Plant	60-ABP-1	NM-9000.A_042	Mortandad Canyon (within LANL)	Aluminum
TA-3-0034 Metal Shop	3-MST-1			Copper
TA-60 Roads and Grounds	60-RG-1			Gross Alpha
TA-3-38 Metals Fab Shop	3-MFS-1	NM-9000.A_047	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	PCBs
TA-3-22 Power & Steam Plant	3-PSP-1			Aluminum
TA-3-22 Power & Steam Plant	3-PSP-5			Copper
TA-3-22 Power & Steam Plant	3-PSP-8			Gross Alpha
TA-3-66 Sigma Complex	3-Sigma-6			Mercury
TA-60-1 Heavy Equipment Yard	60-HEY-2			
TA-60 MRF	60-MRF-1			
TA-60 Roads and Grounds	60-RG-3			
TA-60 Roads and Grounds	60-RG-8			
TA-60-2 Warehouse	60-WH-1			

# **ATTACHMENT 6 – ANALYTES BY INDUSTRIAL SECTOR**

Permitted Facility	Monitored Outfall	Sector	Activity	Analyte	Monitoring Requirement
TA-3-0034 Metal Shop	3-MST-1	AA	Fabricated Metals	Aluminum	Quarterly Benchmark Monitoring (QBM)
TA-3-38 Metals Fab Shop	3-MFS-1			Iron	QBM
TA-3-39 & 102 Metal Shop	3-TS-1			Nitrate plus Nitrite Nitrogen	QBM
				Zinc	QBM
TA-60 Asphalt Batch Plant	60-ABP-1	D	Asphalt Paving	Oil and Grease	Effluent Limitations Guidelines (ELG)
				pH	ELG
				Total Suspended Solids	QBM and ELG
TA-3-66 Sigma Complex	3-Sigma-6	F	Primary Metals	Copper	QBM
				Zinc	QBM
TA-54 Area G	54-G-1	K	Treatment, Storage or Disposal Facility (TSD)	Ammonia	QBM
TA-54 Area G	54-G-2			Arsenic	QBM
TA-54 Area G	54-G-3			Cadmium	QBM
TA-54 Area G	54-G-4			Chemical Oxygen Demand	QBM
TA-54 Area L	54-L-1			Cyanide	QBM
TA-54 RANT	54-RANT-1			Lead	QBM
				Magnesium	QBM
				Mercury	QBM
				Selenium	QBM
				Silver	QBM
TA-60 MRF	60-MRF-1	N	Scrap Recycling	Aluminum	QBM
				Chemical Oxygen Demand	QBM
				Copper	QBM
				Iron	QBM
				Lead	QBM
				Total Suspended Solids	QBM
				Zinc	QBM
TA-3-22 Power & Steam Plant	3-PSP-1	O	Steam Electric Power	Iron	QBM
	3-PSP-5				
	3-PSP-8				

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## ATTACHMENT 7 – REFERENCES AND GUIDANCE DOCUMENTS

- 40 CFR 122, *EPA Administered Permit Programs*
- 40 CFR 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants*.
- Clean Water Act, Title 33 U.S.C. 1251
- DOE O 414.1C, *Quality Assurance*
- DOE Order 450.1, *Environmental Protection Program*
- DOE Order 5400.5, *Radiation Protection of Public and Environment*
- EPA QA/G-4, *Guidance for the Data Quality Objectives Process*

### **LANL Documents:**

- P322-4, *Laboratory Performance, Feedback, and Improvement*
- P328-3, *Management Assessments*
- P328-4, *Management Observation and Verification*
- P330-6, *Nonconformance Reporting*
- P330-8, *Inspection and Test for Acceptance*
- P340, *Conduct of Engineering*
- P341, *Engineering Process Manual*
- P401, *Procedure to Identify, Communicate, and Implement Environmental Requirements*
- P407, *Water Quality*
- P840-1, *Procurement Quality*

### **ENV Documents:**

- ENV-DO-QP-105, *Preparation, Review, and Approval of Procedures*
- ENV-DO-QP-106, *Document Control*
- ENV-DO-QP-113, *Tracking Performance Feedback and Actions*
- ENV-DO-QP-115, *Personnel Training*
- ENV-CP-QP-022, *MSGP Storm Water Corrective Actions*
- ENV-CP-QP-044, *Preparing Storm Water Discharge Monitoring Reports (MDNRs) for NPDES MSGP*
- ENV-CP-QP-047, *Inspecting Storm Water Runoff Samplers and Retrieving Samples*
- ENV-CP-QP-048, *Processing MSGP Storm Water Samples*
- ENV-CP-QP-064, *Multi-Sector General Permit Storm Water Visual Inspections*
- ENV-WQH-QP-029, *Creating and Maintaining a Chain of Custody*
- Surface Water Monitoring Plan, October 2001, Rev. 0.0

**Attachment 15:EPC-CP-QP-023 MSGP ROUTINE FACILITY INSPECTIONS**

EPC-CP-QP-023

Revision: 0



Effective Date: 05/17/2018

Next Review Date: 05/17/2021

## Environment, Safety, and Health Directorate

### Environmental Protection and Compliance Division – Compliance Programs

### Quality Procedure

## MSGP Routine Facility Inspections

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#### REVISION HISTORY

<b>Document Number and Revision</b> <i>[Include revision number, beginning with Revision 0]</i>	<b>Effective Date</b> <i>[Document Control Coordinator inserts effective date]</i>	<b>Description of Changes</b> <i>[List specific changes made since the previous revision]</i>
EPC-CP-QP-023 R0	05/17/2018	New Document. Process formerly part of procedure ENV-RCRA-QP-022 R2, <i>MSGP Corrective Actions</i> .

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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, (Tracking Number NMR053195) 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.

Los Alamos National Security, LLC (LANS) 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

Parts 3.1 and 3.1.2 of the MSGP contain specific requirements for conducting and documenting periodic industrial routine facility inspections. This procedure governs the activities of LANS 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 LANS 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 subcontractor personnel (as applicable) 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 the MSGP are provided below.

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## 2.1 EPC-CP MSGP Stormwater Team

EPC-CP MSGP Stormwater 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 Form to add new Best Management Practices (BMPs) or decommission retired ones;
- Training personnel to use MC Express;
- Performing a quality review of routine facility inspections and “no exposure” site inspections submitted in Maintenance Connection (MC); and
- Assisting customers with issues associated with MC Express.

## 2.2 Deployed Environmental Professionals

DEPs are responsible for the following.

- Implementing this procedure;
- Being educated (i.e., 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-QAPP-MSGP, *Stormwater Multi-Sector General Permit for Industrial Activities Program*;
- Being trained on EPC-CP-QP-022, *Multi-Sector General Permit (MSGP) Corrective Actions*;
- Being trained on UTrain course number 53040, *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;
- Performing routine facility inspections, either monthly or quarterly throughout the year at regulated sites within their FOD [depending on inspection frequency identified in site-

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specific Stormwater Pollution Prevention Plans (SWPPPs)] and documenting results accurately;

- Acting as liaison between the FOD, Deployed Environment, Safety, and Health Services (DESHS) Manager and facility/operations personnel to ensure corrective actions are addressed appropriately by overseeing maintenance and/or installation of additional controls;
- Educating appropriate facility/operations personnel on the MSGP and site-specific SWPPPs so they successfully implement the conditions of the permit; and
- Notifying EPC-CP MSGP stormwater personnel when additional or substitute BMPs have been installed or old BMPs have been removed so the site-specific MSGP Routine Facility Inspection Form can be modified.

### **2.3 EPC-CP Stormwater Permitting and Compliance Team Leader**

The EPC-CP Stormwater Permitting and Compliance Team Leader is responsible for compliance oversight relative to the MSGP. The Team Leader ensures adequate resources needed to implement the regulatory requirements identified in the MSGP are identified and environmental risks are assessed. The Team Leader will notify upper management of these required 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 makes the final determination of the required action. The Team Leader notifies upper management of instances of non-compliance with the permit.

### **2.4 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 or Team Lead also acts as the duly authorized signatory that certifies the Annual Report, MSGP Routine Facility Inspections, or “no exposure” site inspections conducted by EPC-CP personnel. The Group Leader notifies upper management of instances of non-compliance with the permit or other identified environmental risk.

### **2.5 DESHS Manager**

The DESHS manager works with programmatic entities and the FOD to identify adequate resources for their industrial facilities to ensure permit requirements can be implemented. The DESHS Manager is responsible for the performance of DEPs under their management and to maintain trained and qualified DEPs. They also provide oversight by ensuring that industrial facilities complying with the MSGP and will notify upper management of instances of non-compliance with the permit or other identified environmental risk.

## **3.0 PRECAUTIONS AND LIMITATIONS**

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

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Field inspections may be discontinued during periods or conditions that make sites dangerous for worker safety or prevent personnel from safely accessing sites (e.g., weather-related events such as flash floods, flooding, lightning, wildfires, hail, icy roads, deep snow, or LANL operations such as firing shots or burns).

#### **4.0 PREREQUISITE ACTIONS**

##### **4.1 Planning and Coordination**

1. Schedule work to be completed by the target date appearing on the inspection or as requested by the MSGP program lead if an inspection 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. Obtain any necessary additional paperwork before conducting this work, including SWPPPs and maps (as necessary).

##### **4.2 Tools and Equipment**

Ensure the following equipment is available.

- Sturdy hiking boots or steel toed shoes with soles that grip and other facility specific PPE as needed
- 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-Form-1020, *MSGP Routine Facility Inspection*
- 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 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. The inspections are performed on the following facility areas:

- Areas where industrial materials or activities are exposed to stormwater;

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- 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 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.

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## 5.1 Conducting the Inspection

See Attachment 1 for screen shot examples of EPC-CP-Form-1020, *MSGP Routine Facility Inspection* in MC Express. See Attachment 2 for a crosswalk of the inspection form in hard copy format.

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

If the inspector needs space, additional comments can be entered in the “Labor Report” field (see Section 5.2) when the work order is updated to “Complete” status in MC Express. If completing a hard copy enter additional comments in the “Labor Report” field at the bottom of the form.

1. Use the Internet Explorer web browser on a tablet or similar portable computer and navigate to <http://express.maintenanceconnection.com>. Log into the MC Express application using your login credentials.
2. Open the inspection form for the location to be inspected and select “Tasks” to navigate to the Tasks page.

**Note:** Each item number listed in red font below corresponds to a numbered box on both screen shots (Attachment 1) and hard copy format (Attachment 2).

3. **Item 1:** Observe the weather at time of inspection. Describe the weather and record the temperature in the “Comments” field. Document this task is or is not completed by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”.

### CAUTION

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

4. **Item 2:** Observe and document the facility is free of **new** discharges of pollutants **since the last inspection** by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Describe any new discharges and the specific location in the “Comments” field of the task line.
5. **Item 3:** If the response to **Item 2** is “Complete” click the expand arrow located on the right side of this task line and change the “N/A” line to “Yes”. If the response to **Item 2** is “Failed” document any CAR previously initiated for the discharge by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”.
6. **Item 4:** Observe and document the facility is free of discharges of pollutants at the time of inspection by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Describe any pollutant discharge and the specific location in the “Comments” field of the task line.

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7. **Item 5:** Observe and document the facility is free of evidence of pollutants entering the drainage system OR the potential for pollutants entering the drainage system by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Describe any discharge or potential discharge and the specific location in the “Comments” field of the task line.
8. **Item 6:** Observe and document the outfall does not have any **new** evidence of erosion **since the last inspection** by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Describe any erosion observed in the “Comments” field of the task line.
9. **Item 7:** Observe and document all flow dissipation devices are operating effectively and are not in need of repair by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Describe any non-functional status of devices in the “Comments” field of the task line.
10. **Item 8:** Observe and document the outfall is free of evidence of pollutants in the discharge and/or the receiving water by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Describe any pollutants observed in the “Comments” field of the task line.
11. If the location has more than one outfall, complete Steps 8 through 10 for each outfall shown on the work order.
12. **Item 9:** Observe and document each control measure is operating effectively by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. 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.
13. If the location has more than one control measure complete Step 12 for each control measure shown on the work order.
14. **Item 10:** Observe and document each sector of NPDES specified industrial area/activity (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) is inspected for exposure to stormwater by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”.  
  
Determine if the control measures associated with each industrial area/activity are appropriate for the activity, effectively controlling stormwater exposure, and operating. 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.
15. If the facility has more than one sector of NPDES specified industrial area/activity complete Step 14 for each industrial area/activity shown on the work order. If an industrial activity does not apply to the facility click the expand arrow located on the right side of the task line and change the “N/A” line to “Yes”.



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16. **Item 11:** Observe and document the facility is free of discharges of any non-compliance not documented elsewhere on the inspection form by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Describe any additional incidences of non-compliance in the “Comments” field of the task line.
17. **Item 12:** Observe and document the facility meets the MSGP requirements with existing control measures by clicking the expand arrow located on the right side of the task line and changing the “Complete” to “Yes”. If additional control measures are needed to comply with the Permit, clicking the expand arrow located on the right side of the task line and changing the “Failed” to “Yes” and describe the control measures in the “Comments” field of the task line.
18. When all task lines have been completed, make sure you have clicked the “Save” bar at the bottom of the page.
19. 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.

**Always log out of MC Express when you have finished work OR if work is interrupted.**

## 5.2 Completing the Inspection Form in MC Express

See Attachment 1 for screen shot examples of EPC-CP-Form-1020, *MSGP Routine Facility Inspection* in MC Express.

1. Click the checkered flag in the upper right corner of the work order Summary page.

### CAUTION

MC Express automatically changes the work order status to “Closed” and auto-populates the date and time fields.

2. **Item 13:** Click on the expand arrow located on the right side of the “New Status” field and select “Completed” from the available dropdown menu. Ensure the date and time auto-populated are the date and time the on-site **field inspection was completed** (not the date/time the form was filled out).

If these fields need to be updated, click the “Date” field to modify it. Make necessary adjustments using the available timestamp application and click “Set” to apply changes.

3. **Item 14:** The inspector types in his/her name in the “Labor Report Update” field.  
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” section.
4. 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.
5. **Item 15:** Capture an electronic signature by drawing with a finger on the tablet screen. The field inspector is certifying that the information submitted is “true, accurate, and complete” by electronically signing work order.

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**Note:** If using MC Express on a desktop screen (not a tablet), the mouse is used to draw a signature.

6. Click on the “Save” bar at the bottom of the page to close the “Signature” field.
7. Click on the “Back” button located in the upper left hand corner to return to the “My Open Work Orders” page.
8. Once you have completed an inspection, click on the Menu button again, and then click the “Logout” bar. Close the browser. All work will be automatically uploaded from the MC Express application to the MC database.

**Always log out of MC Express when you have finished work OR if work is interrupted.**


### 5.3 Completing the Inspection Form on Hardcopy

See Attachment 2 for a crosswalk of EPC-CP-Form-1020, *MSGP Routine Facility Inspection* to hard copy format.

1. **Item 13:** Write in the date and time the **inspection was completed** and **not the date/time the form was filled out**. If an inspection needs to be performed over multiple days, note the date and time the inspection began in the Labor Report field.
2. **Item 14:** The field inspector prints his/her name.
3. **Item 15:** The field inspector reviews the inspection form for accuracy and certify that the information submitted is “true, accurate, and complete” by signing his/her name and dating when the form was signed.

### 5.4 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 Internet Explorer web browser on a desktop computer, navigate to <http://www.maintenanceconnection.com>. Log into the MainConn desktop application using your login credentials.
2. Click “Open” in the tool bar at the top of the page to open the MainConn module selections. Click on the “Work Orders” module.
3. Click on the “Search” tab at the top left of the page and enter the work order number in the “Search Value” field. 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 and select “Print” from the options. The print dialog box will open. Select the print options as appropriate for your local printer.

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6. **Item 16:** Obtain a printed name and title, signature, and date on the certification statement. 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). The manager is certifying the information submitted is “true, accurate, and complete” by signing the form.
7. Attach the completed, signed, and certified inspection form to the facility SWPPP.

## 6.0 TRAINING

The following personnel require training before implementing this procedure.

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

For EPC-CP staff, the training method for this procedure is “self-study” (reading). Other participating groups may require training documentation pursuant to local procedures.

Personnel performing this procedure will be familiar with the most current versions of the following procedures.

- EPC-CP QAPP-MSGP *Quality Assurance Project Plan for the Stormwater Multi-Sector General Permit for Industrial Activities*
- EPC-CP-QP-022, *Multi-Sector General Permit (MSGP) Corrective Actions*
- Training Course 53040, *MSGP Routine Inspections OJT*

## 7.0 RECORDS

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

## 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).

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**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](#).

EPC-CP	Environmental Protection and Compliance – Compliance Programs
DEP	Deployed Environmental Professional
DESHS	Deployed Environment, Safety, and Health Services
IWD	Integrated Work Document
FOD	Facility Operations Director
LANL	Los Alamos National Laboratory
LANS	Los Alamos National Security, LLC
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.

## 10.0 ATTACHMENTS

**Attachment 1:** *Screenshot Example of EPC-CP-Form-1020, MSGP Routine Facility Inspection in MC Express*

**Attachment 2:** *Crosswalk of EPC-CP-Form-1020, MSGP Routine Facility Inspection to Hard Copy Format*

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# **ATTACHMENT 1: SCREENSHOT EXAMPLE OF EPC-CP-FORM-1020, MSGP ROUTINE FACILITY INSPECTION IN MC EXPRESS**

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MC Express

WORK ORDER: MSGP-RI-52112

Tasks

**Weather Information**

1 Describe the weather at time of inspection and document the temperature (F°).

**Within the Facility Boundary**

2 Is the facility free of new discharges of pollutants that have occurred since the last inspection? If "Failed" describe.

3 If "No" has a CAR been previously initiated for this new discharge?

4 Is the facility free of discharge of pollutants at the time of inspection? If "No" describe.

5 Is the facility free of evidence of, or the potential for, pollutants entering the drainage system. If "No" describe.

Refresh List

MC Express

WORK ORDER: MSGP-RI-52112

Tasks

**Outfall Inspection (identify needed maintenance and repairs, failed control measures that need replacement, or a description of corrective actions in relevant task comment)**

6 Free of Evidence of Erosion? If "No", describe.  
Asset: [073] Monitored Outfall

7 Flow Dissipation Devices Operating Effectively? If "No", describe.  
Asset: [073] Monitored Outfall

8 Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.  
Asset: [073] Monitored Outfall

120 Free of Evidence of Erosion? If "No", describe.  
Asset: [074] Substantially Identical Outfall

130 Flow Dissipation Devices Operating Effectively? If "No", describe.  
Asset: [074] Substantially Identical Outfall

140 Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.  
Asset: [074] Substantially Identical Outfall

Refresh List

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**ATTACHMENT 1: SCREENSHOT EXAMPLE OF EPC-CP-FORM-1020, MSGP ROUTINE FACILITY INSPECTION IN MC EXPRESS (CONT.)**

Page 2 of 3

MC Express

WORK ORDER: MSGP-RI-52112

Tasks

**Control Measures (identify needed maintenance and repairs, failed control measures that need replacement, or a description of corrective actions in relevant task comments).**

160  
Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement. →  
Asset: [0300503040002] Asphalt Berm

170  
Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement. →  
Asset: [0300504060001] Rip Rap

180  
Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement. →  
Asset: [0300503200003] EnviroSoxx w/ MetallLoxx

Refresh

List

MC Express

WORK ORDER: MSGP-RI-52112

Tasks

**Area/Activity exposed to stormwater (identify needed maintenance or a description of corrective actions in relevant task comment).**

200  
Material loading/unloading and storage areas: controls adequate (appropriate, effective, and operating)? If "No" describe. →

210  
Transfer areas for substances in bulk: controls adequate (appropriate, effective, and operating)? If "No" describe. →

220  
Product/chemical storage areas (raw material): controls adequate (appropriate, effective, and operating)? If "No" describe. →

230  
Liquid tank storage/secondary containment: controls adequate (appropriate, effective, and operating)? If "No" describe. →

Refresh

List

MC Express

WORK ORDER: MSGP-RI-52112

Tasks

**Non-Compliance**

390  
Free of incidents of observed non-compliance not already identified above? If "No" describe. →

**Additional Control Measures**

410  
Are permit requirements satisfied with existing control measure(s)? If "No" describe additional control measures needed. →

Refresh

List

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**ATTACHMENT 1: SCREENSHOT EXAMPLE OF EPC-CP-FORM-1020, MSGP ROUTINE FACILITY INSPECTION IN MC EXPRESS (CONT.)**

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MC Express

WORK ORDER: MSGP-RI-52112

Summary

[03005] TA-3-38 Carpenter Shop  
RG121.9  
Issued / Completed

Hard Copy Example

- Tasks 34
- Assignments 1
- Labor 0
- Parts 0
- Other Costs 0
- Attachments 2
- Asset History 30

More Work Order Detail...

Refresh List

MC Express

WORK ORDER: MSGP-RI-52112

Status Update

Issued / Completed

New Status **13**

Completed

Date

10/25/2017 04:22 PM

Percent Complete 100%

Labor Report Update **14**

Select Comments to Add.....

Jane Doe Admin

Cancel Save

MC Express

WORK ORDER: MSGP-RI-52112

Status Update

Signature **15**

(Remove)

Jane Doe Admin

Cancel Save



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## ATTACHMENT 2: CROSSWALK OF EPC-CP-FORM-1020, MSGP ROUTINE FACILITY INSPECTION TO HARD COPY FORMAT

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Los Alamos National Lab - ADESH

Work Order MSGP-RI-52112

MSGP Routine Inspection  
Printed 10/25/2017 - 4:07 PM (Duplicate Copy)

Maintenance Details					
<b>Requested By:</b> Admin, Jane on 10/25/2017 <b>Taken By:</b> Admin, Jane <b>Procedure:</b> MSGP Routine Facility Inspection (EPC-CP-Form-1020.1)  <b>Last PM:</b> N/A <b>Reason:</b> EXAMPLE MSGP Routine Facility Inspection <b>Special Instructions:</b> NMR053195	<b>Target:</b> 12/31/2020 <b>Priority/T ype:</b> / Inspection <b>Department:</b> Utilities and Infrastructure	<div style="display: flex; justify-content: space-between;"> <div>  MSGP Program   RG121.9   TA-3-38 Carpenter Shop           </div> <div> <b>Contact:</b> Admin, Jane  <b>Phone:</b> 665-1234           </div> </div>			


  

Tasks						
	#	Description	Meas.	No	N/A	Yes
		Weather Information				
1	20	Describe the weather at time of inspection and document the temperature (F).		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Within the Facility Boundary				
2	40	Is the facility free of new discharges of pollutants that have occurred since the last inspection? If "Failed" describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	50	If "No" has a CAR been previously initiated for this new discharge?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	60	Is the facility free of discharge of pollutants at the time of inspection? If "No" describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	70	Is the facility free of evidence of, or the potential for, pollutants entering the drainage system. If "No" describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		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 [073] Free of Evidence of Erosion? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	100	Monitored Outfall [073] Flow Dissipation Devices Operating Effectively? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	110	Monitored Outfall [073] Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	120	Substantially Identical Outfall [074] Free of Evidence of Erosion? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	130	Substantially Identical Outfall [074] Flow Dissipation Devices Operating Effectively? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	140	Substantially Identical Outfall [074] Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Control Measures (identify needed maintenance and repairs, failed control measures that need replacement, or a description of corrective actions in relevant task comments).				
9	160	Asphalt Berm [0300503040002] Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	170	Rip Rap [0300504060001] Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	180	EnviroSoxx w/ MetalLoxx [0300503200003] Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Area/Activity exposed to stormwater (identify needed maintenance or a description of corrective actions in relevant task comment).				
10	200	Material loading/unloading and storage areas: controls adequate (appropriate, effective, and operating)? If "No" describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	210	Transfer areas for substances in bulk: controls adequate (appropriate, effective, and operating)? If "No" describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	220	Product/chemical storage areas (raw material): controls adequate (appropriate, effective, and operating)? If "No" describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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230	Liquid tank storage/secondary containment: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
240	Industrial processing and finished product storage areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
250	Equipment operation and maintenance areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
260	Fueling areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
270	Outdoor vehicle and equipment washing areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
280	Machinery: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
290	Waste handling and disposal areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
300	Erodible areas/construction: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
310	Locations and sources of run-on to the site: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
320	Non-stormwater/illicit connections: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
330	Salt storage piles or pile containing salt: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
340	Dust generation and vehicle tracking: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
350	Housekeeping (Industrial materials/residues/trash in contact with stormwater): controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
360	Leaks and spills: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
370	Sector A [03005-] Wood processing, transport or treated wood storage areas: controls adequate (appropriate, effective, and operating)? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-Compliance				
11 390	Free of incidents of observed non-compliance not already identified above? If "No" describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Additional Control Measures				
12 410	Are permit requirements satisfied with existing control measure(s)? If "No" describe additional control measures needed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Labor Report				
13	Completed: 10/25/2017 10:08:00 AM			
14	Report: Jane Doe Admin			
15	 Signature / Name	10/25/2017 Date	 Signature / Name	 Date
I confirm the information as recorded is true, accurate and complete.				

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HARD COPY FORMAT (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, DSESH Group Leader, EPC Group Leader)**

**16** Print name and title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

EPC-CP-Form-1020.1 03/2018

**Attachment 16: 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:**

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**Derivative Classifier:** ☒ **Unclassified**

Name:	Organization:	Signature:	Date:
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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

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### Revision History

<b>Document Number and Revision</b> <i>[Include revision number, beginning with Revision 0]</i>	<b>Effective Date</b> <i>[Document Control Coordinator inserts effective date]</i>	<b>Description of Changes</b> <i>[List specific changes made since the previous revision]</i>
0	08/10	New Document.
1	11/10	Incorporated EPC-CP-QP-062 <i>MSGP Routine Inspections</i> 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.

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## 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).

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### **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](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.

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- 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.

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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.

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#### 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.

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#### **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**:



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- [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).

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[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

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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 of 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

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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](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

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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](mailto: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 performing 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

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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](mailto: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.

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- **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.



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- [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](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](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.

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### 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:

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- 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.

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## 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

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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](#)

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- [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

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## Attachment 1 – Screenshot Example of CAR Database

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### Corrective Action Header tab

MSGP\_CORRECTIVEACTIONREPORT

Corrective Action Header    Corrective Action Details

**NPDES MSGP CORRECTIVE ACTION REPORT**      Id. Number : 1150      (Assigned by computer)

1 \* Name of Facility : TA-60-1 Heavy Equipment Yard      List

2 \* Date problem was identified : 05/19/2017 09:00      \* Date of Notification to EPC-CP : 05/19/2017 12:00      3

4 \* FOD Responsible for CA (Name & Org) : UI      Erickson Andrew W

5 Describe Specific Evaluation Location : Trench drain east of the high bay that drains to the oil water separ

6 \* Inspector Z-Number : 123456      Doe, Jane      EPC-CP

7 \* Person Identifying Condition Z-Number : 123456      Doe, Jane      EPC-CP

Date Format Must be entered as MM/DD/YYYY HH24:MI

8 Status: 1      A new corrective action ?      Annual Report ID (s):

9 Void Comments:

\* required fields

10

Enter New Corrective Action      Back To Record Selection      Save      Cancel

Prev Rec.      Next Rec.      Print Summary



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## Attachment 1 – Screenshot Example of CAR Database (cont.)

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### Corrective Action Details tab

Action Edit Query Block Record Field Help Window

MSGP\_CORRECTIVEACTIONREPORT

Corrective Action Header Corrective Action Details

\*3. Identify the condition triggering the need for this review: If other, (describe here):

11 Control measures not properly operated or maintained List 12

\*4. Briefly describe the nature of problem identified: (e.g., Erosion problem identified during inspection).

13 The trench drain east of the high bay at TA-60 HEY that drains to an oil/water separator was not draining during a precipitation event. This is a repeat issue that was previously identified on 3/22/2017 (see CAR #1067), when discharge resulted in an oily sheen at SIO 025.

\*6. How problem was identified: If other, (describe here):

14 Other (describe) : List During monitoring after a storm event 15

\*7. Description of corrective action taken or to be taken to eliminate or further investigate the problem (e.g., describe modifications, repairs to control measures, analyses to be conducted, etc.) or if no modifications are needed, basis for that determination:

16 On 05/19/2017, HEY personnel pumped water from the trench drain into storage tanks to prevent overflow and release and removed sediment from the trench drain and placed into drums. An on-site supervisor submitted FSR to unclog the line was submitted. 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.

17 8. Was the problem identified at an outfall that is Substantially Identical? Yes/No : Y

18 9. Which SIO Affected? 021, 023, 024, and 025

19 10. If yes, provide documentation of how corrective action taken is appropriate for all related SIOs:  
5/19/2017: Temporarily pumping water will prevent discharge from reaching the SIOs. 6/5/2017: Unclogging the trench drain and maintenance on the oil/water separator will prevent unauthorized discharges such as oil.

20 \* 11. Did/will this corrective action require modification of your SWPPP ? Yes/No : Y

21 \* 12. Date corrective action initiated (MM/DD/YYYY HH24:MI): 05/19/2017 14:00 OR expected completion :

22 \* 13. Date corrective action completed (MM/DD/YYYY HH24:MI): 06/05/2017 16:00

23 14. If corrective action is not or will not be completed within 14 days of discovery, describe any remaining steps and the formal schedule necessary to complete the corrective action:  
MSS and subcontractor are scheduled for 06/05/2017 AM to unclog trench drain and perform maintenance on the oil/water separator. Schedule exceeded 14 days due to no standing maintenance contract on the oil/water separator being in place. Standing maintenance contract is now in place.

24 15. Date EPA Notified of Intent to Exceed 45 Days (MM/DD/YYYY HH24:MI):

\* required fields

List Values Prev Rec. Next Rec. BackToRecordSelection 25 Save Cancel

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### **Attachment 1 – Screenshot Example of CAR Database (cont.)**

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#### **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.

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## Attachment 2 – Lists of Limited Values in the CAR Database

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**Name of Facility (*Item 1 on Attachment 1 Screenshot*)**

Valid MSGP Facilities

Find:

Msgp_Facility_Desc
TA-14-23 OBOD
TA-15-185 PHERMEX
TA-15-313 Machine Shop
TA-16-0388 Burning Ground
TA-16-0399 Burning Ground
TA-22-52 Machine Shop
TA-3-22 Power & Steam Plant
TA-3-30 Warehouse
TA-3-32 Metal Shop
TA-3-34 Metal Shop
TA-3-38 Carpenter Shop
TA-3-38 Metals Fab. Shop
TA-3-39 & 102 Metal Shop
TA-3-66 Sigma Facility
TA-33-113 Machine Shop
TA-33-39 Machine Shop
TA-35-125 Machine Shop
TA-35-2 Machine Shop
TA-36-8 Minie
TA-39-57 OBOD
TA-39-6 OBOD
TA-46-31 Machine Shop
TA-46-77 Machine Shop
TA-48-8 Machine Shop
TA-50-37 WCRRF
TA-50-54 Metal Shop
TA-50-69 WCRRF
TA-53-16 Machine Shop
TA-53-18 Machine Shop
TA-53-2 Machine Shop
TA-53-22 Machine Shop
TA-53-26 Machine Shop
TA-53-39 Shop and Storage Building
TA-54 Area G
TA-54 Area L
TA-54 Maintenance Facility W
TA-54 RANT
TA-55 Plutonium Facility
TA-55-314 Warehouse
TA-60 Asphalt Batch Plant
TA-60 MRF
TA-60 Roads and Grounds
TA-60-1 Heavy Equipment Yard
TA-60-2 Warehouse
TA-63 Transuranic Waste Facility
TA-9-28 Heavy Equipment Maintenance Operations Facility

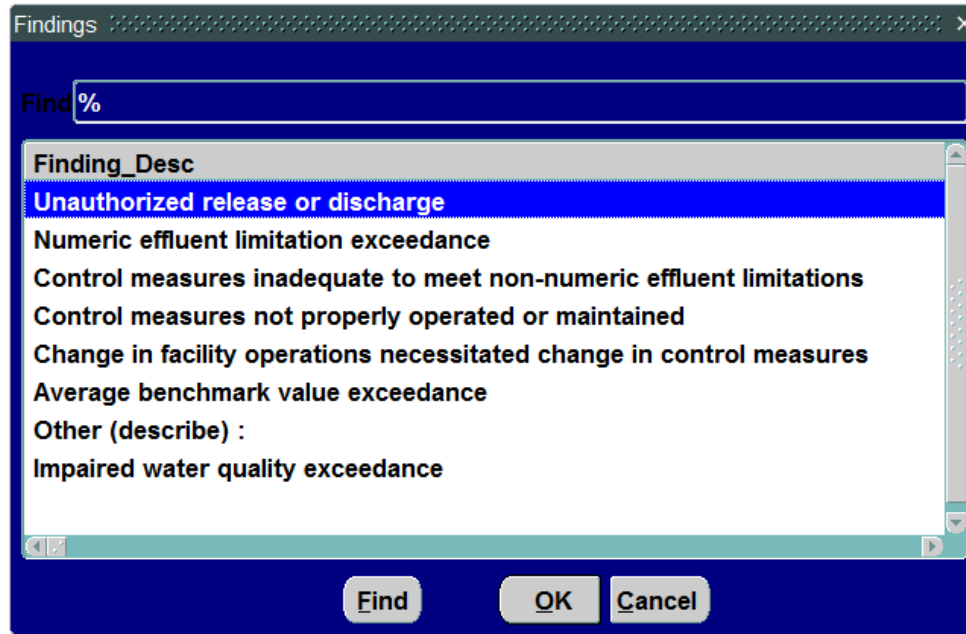
Find OK Cancel

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## Attachment 2 – Lists of Limited Values in the CAR Database (cont.)

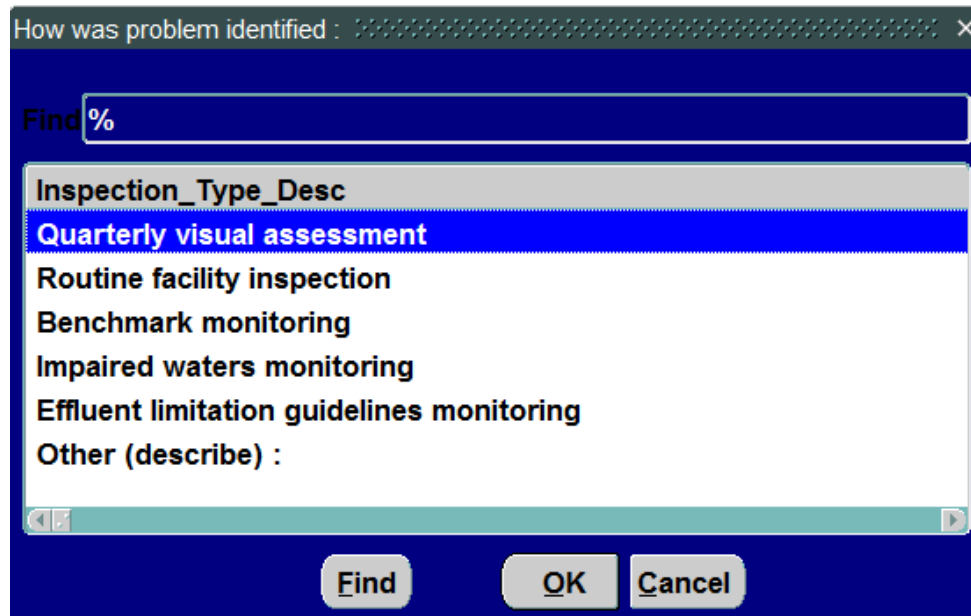
Page 2 of 2

### Finding Description/Condition Triggering Need for Review (*Item 11 on Attachment 1 Screenshot*)



The 'Findings' dialog box has a title bar with 'Findings' and a close button. It contains a search field labeled 'Find %' with a '%' symbol. Below the search field is a list box titled 'Finding\_Desc'. The list contains the following items: 'Unauthorized release or discharge' (highlighted in blue), 'Numeric effluent limitation exceedance', 'Control measures inadequate to meet non-numeric effluent limitations', 'Control measures not properly operated or maintained', 'Change in facility operations necessitated change in control measures', 'Average benchmark value exceedance', 'Other (describe) :', and 'Impaired water quality exceedance'. At the bottom of the dialog are three buttons: 'Find', 'OK', and 'Cancel'.

### Inspection Type/How Problem was Identified (*Item 14 on Attachment 1 Screenshot*)



The 'How was problem identified' dialog box has a title bar with 'How was problem identified : ' and a close button. It contains a search field labeled 'Find %' with a '%' symbol. Below the search field is a list box titled 'Inspection\_Type\_Desc'. The list contains the following items: 'Quarterly visual assessment' (highlighted in blue), 'Routine facility inspection', 'Benchmark monitoring', 'Impaired waters monitoring', 'Effluent limitation guidelines monitoring', and 'Other (describe) :'. At the bottom of the dialog are three buttons: 'Find', 'OK', and 'Cancel'.



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## Attachment 3 – Example New Corrective Action Finding Notification

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**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 to the start of work the operator noticed the forklift was leaking 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 must 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.

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## Attachment 4 – Example Weekly Notification of Outstanding Corrective Action Findings

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**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 must 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.

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## Attachment 5 – Example Outstanding Corrective Action Report

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**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.
<b>Total Findings:</b>											<b>2</b>	

**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 17: EPC-CP-QP-064 MSGP STORMWATER VISUAL ASSESSMENTS**

**EPC-CP-QP-064**Revision: **1**

Effective Date: 10/09/2018

Next Review Date: 10/09/2021

**Environment, Safety, Health Directorate****Environmental Protection and Compliance-Compliance Programs****Quality Procedure****MSGP Stormwater Visual Assessments****Document Owner:**

Name:	Organization:	Signature:	Date:
Holly L. Wheeler	EPC-CP	Signature on File	9-11-18

**Derivative Classifier:** ☒ **Unclassified** or ☐ \_\_\_\_\_

Name:	Organization:	Signature:	Date:
Jacob Meadows	EPC-CP	Signature on File	9-11-18

**Approval Signatures:**

Subject Matter Expert:	Organization:	Signature:	Date:
Holly L. Wheeler	EPC-CP	Signature on File	9-11-18
Responsible Line Manager:	Organization:	Signature:	Date:
Terrill W. Lemke	EPC-CP Team Leader	Signature on File	9-12-18
Responsible Line Manager:	Organization:	Signature:	Date:
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#### REVISION HISTORY

<b>Document Number and Revision</b> <i>[Include revision number, beginning with Revision 0]</i>	<b>Effective Date</b> <i>[Document Control Coordinator inserts effective date]</i>	<b>Description of Changes</b> <i>[List specific changes made since the previous revision]</i>
ENV-RCRA-QP-064, R0	7/09	New document <i>MSGP Storm Water Visual Inspections</i> .
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.

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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). 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 outfall locations where LANL conducts stormwater monitoring activities 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 Storm Water Pollution Prevention Plan (SWPPP) and visually inspected for water quality characteristics. Stormwater samples are collected with an automated sampler, single stage sampler, or by taking a grab sample.

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.

**Note:** 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

Hazards in the work described in this procedure are controlled through site specific Integrated Work Documents (IWDs). The hazard level for the activities described in this procedure is **low**. The IWD Part II (2101 Form) will address site-specific requirements and training for Facility Operations Divisions (FODs).

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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).

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. 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.
2. Obtain necessary additional paperwork (if required) before conducting this work, including IWD’s, and excavation permits.
3. As specified in the IWD, inform (e.g., by e-mail) facility contacts and/or DEP (Deployed Environmental Professional) 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.

**Note:** For some FODs (e.g., Utilities and Institutional Facilities), 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.

4. The IWD Part II (2101 Form) addresses specific requirements and training for FODs.
5. Gather the required equipment (see Section 3.2) 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 using your login credentials. Confirm that the work order list displayed in the “My Open Work Orders” section matches your sites. If work orders are not displayed, click the “Refresh” bar at the bottom of the page. The page will refresh and any work orders issued since you logged in will be loaded to the application. If the work order lists still do not match, contact the MSGP Data Management Team for clarification.

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8. 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 at all times, with no daylight saving time adjustment.

### 3.2 Tools and Equipment

Ensure the following equipment is available in the field vehicle:

- Safety glasses with side shields
- Nitrile gloves
- Sturdy hiking boots or steel toed shoes with soles that grip and other facility specific Personal Protective Equipment
- 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)
- Current copy of the MSGP Sampling and Analysis Plan
- Site Map(s) (as needed)
- Current electronic work order or paper inspection form
- Government issued electronic tablet 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 and station keys
- Certified clean replacement sample bottles (clear glass or clear poly)
- Paper Towels

### 4.0 VISUAL ASSESSMENT OF STORMWATER

1. Take the sample bottle with water out of automated sampler or single stage jar off the ground, or fill a clear sample bottle with a grab sample and wipe off exterior.  
**Note:** If a grab sample is collected, it 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. 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.
3. Click on the “Tasks” bar to navigate to the work order Tasks page. See MC Express screen shot examples in Attachment 1 and a hard copy example in Attachment 2.



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4. Any additional comments not documented in the “Reading” field will be entered in the “Comments” field of the same task line. If the inspector needs more space, additional comments will be entered in the “Labor Report Update” field (see Section 4.3) when the work order is updated to “Complete” status.
5. Click the “Save” bar after all entries for a task line have been completed and before proceeding to the next question. Failure to “Save” results in lost data entries.

#### 4.1 Documenting Sample Information

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).

1. **Item 1:** Document the monitoring period by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Describe the monitoring period (e.g., Apr-May, Jun-Jul, Aug-Sep, and Oct-Nov).

**Note:** If the discharge collected is from a rain event from the previous monitoring period but the visual assessment is made in the following monitoring period, document monitoring period on the inspection to correspond to the period in which the rain event took place.

2. **Item 2:** Check the date and time stormwater discharge began and document by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”.

Enter the date and time in the following date formats: MM/DD/YY, or MM-DD-YY. Time must be entered in 24-hr format.

**Note:** If the discharge date/time is not available (e.g., precipitation report) when the visual is performed in the field, leave this Task Line incomplete and complete when the information is available.

3. **Item 3:** Check the date and time the sample was collected and document by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”.

Enter the date and time in the following date formats: MM/DD/YY, or MM-DD-YY. Time must be entered in 24-hr format.

**Note:** If the collection date/time is not available (e.g., precipitation report) when the visual is performed in the field, leave this Task Line incomplete and complete when the information is available.

4. **Item 4:** Check the date and time stormwater was visually assessed and document by clicking on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”.

Enter the date and time in the following date formats: MM/DD/YY, or MM-DD-YY. Time must be entered in 24-hr. format.

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5. **Item 5:** Observe the nature of the discharge and document by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Describe the discharge (e.g., rainfall or snowmelt) and the TOTAL amount of precipitation from the event.

**Note:** If the total amount of precipitation is not available (e.g., precipitation report) when the visual is performed in the field, leave this Task Line incomplete and complete when the information is available.

6. **Item 6:** Check the sample was collected in the first 30 minutes of discharge and document by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample must be collected as soon as practicable after the first 30 minutes. The field inspector will document the reason a sample could not be collected within the first 30 minutes.

## 4.2 Assessing Parameters

While conducting the visual examinations, personnel will constantly be attempting to relate any pollutant that is observed in the sample to a pollutant source on the site.

If there are any potential sources of pollutants on site, document the following, and contact the EPC-CP MSGP Project Lead within 24 hrs. of identification.

- Potential sources;
  - Indicate if there are any Best Management Practices (BMPs) on site and evaluate and note effectiveness; and
  - If no BMPs, determine if installation could correct future pollutant migration.
7. **Item 7:** Observe the color of the discharge in the sample container and document by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Describe the color.
  8. **Item 8:** Observe any odors detected from sample and document by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Describe the odor (e.g., musty, sewage, sulfur, sour, solvents, petroleum/gas, etc.).
  9. **Item 9:** Observe the clarity of the discharge and document by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Describe the clarity (e.g., slightly cloudy, cloudy, opaque).

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.

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10. **Item 10:** Observe any floating solids and document by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. 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). Describe any floating solids observed.
11. **Item 11:** Observe any settled solids in the sample and document by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Describe any settled solids observed (e.g., fine, course).

Settled solids may be an indicator of unstable ground cover combined with a high intensity stormwater runoff event.

12. **Item 12:** Observe any suspended solids in the sample and document by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Describe any suspended solids observed (e.g., fine, course).

Most often suspended solids include fine sediment. This may be an indication of an unstable channel with eroding banks. Some water appears to be colored because of relatively coarse particulate material in suspension such as sediment.


13. **Item 13:** Check the sample is free of foam and document by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Gently shake the sample container. Describe any bubbles in or on the surface of the water and the color of the foam.

If it is determined that foam is caused by a pollutant, complete the visual assessment and contact the EPC-CP MSGP Project Leader **immediately following completion of the assessment**. Follow-up action is required within 24 hours.

14. **Item 14:** Check the sample is devoid of any oil sheen and document by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. If an oil sheen is present, describe the thickness and consistency (e.g., flecks, globs).


If an oil sheen is present, contact the EPC-CP MSGP Project Leader **immediately following completion of the visual assessment**. Determine the nature of the discharge (rain, snow, hail), the source of the oil sheen and if existing BMPs are effective in mitigation of potential pollutants or if a new BMP needs to be installed. Follow-up action is required within 24 hours.

15. **Item 15:** Check the discharge is free of any other indicators of stormwater pollution not described in any other task line above and document by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Describe any observations.

16. When all task lines have been completed, click the “Back” button  in the upper left hand corner to exit the work order Tasks page and return to the work order Summary page.

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#### 4.3 Completing the 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 checkered flag  in the upper right corner of the work order Summary page. The work order will open in the display to the Status Update page.

**MC Express automatically changes the work order status to “Closed” and auto populates the date/time fields.**

3. **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. 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**. If work needs to be performed over multiple days, enter the date and time the work began in the Labor Report field. To update the date or time, click the “Date” field and make necessary adjustments using the available timestamp application. Click “Set” to apply changes.
4. **Item 17:** The inspector enters/prints his/her name in the “Labor Report Update” field.  
Any additional notes, observations, or site conditions not documented in a task line “Reading” or “Comments” field will be documented in the “Labor Report Update” field.
5. 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.
6. **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:** If using MC Express on a desktop screen (not a tablet), the mouse must be used to sign electronically.


7. Click on the “Save” bar at the bottom of the page to close the “Signature” field.
8. Click on the “Back” button in the upper left hand corner to return to the “My Open Work Orders” page.
9. Once you have completed an inspection, click on the Menu button again, and then click the “Logout” bar. Close the browser. All work will automatically upload from the MC Express application to the MC database.

**Always log out of MC Express when you have finished work OR if work is interrupted.**

#### 4.4 Completing the Certification Statement

1. Using the Safari web browser on a desktop computer, navigate to <http://www.maintenanceconnection.com>. Log into the MainConn desktop application using your login credentials.

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2. Click “Open” in the tool bar at the top of the page to open the MainConn module selections. Click on the “Work Orders” module. See Attachment 3 for screenshot examples of printing from MainConn.
3. Click on the “Search” tab at the top left of the page and enter the work order number in the “Search Value” field. 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 and select “Print” from the options. The print dialog box will open. Select the print options as appropriate for your local printer.
6. **Item 19:** Obtain a printed name and title, signature, and date on the certification statement (see Attachment 2). The visual assessment 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; Deployed Environmental, Safety, and Health Group Leader; EPC Group Leader, EPC-CP Team Leader). The manager is certifying the information submitted is “true, accurate, and complete” by signing the form.

EPC-CP will send out completed visual assessment forms 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.

7. Place the completed and signed visual assessment into the facility SWPPP.

## 5.0 EVIDENCE OF STORMWATER POLLUTION

If stormwater contamination is identified through visual assessment personnel will attempt to identify the pollutant source. Personnel will evaluate whether or not BMPs have already been implemented and evaluate whether or not these are working correctly or need maintenance. A design change could also be incorporated into the stormwater pollution prevention plan to eliminate or minimize the contaminant source from occurring in the future. Personnel will evaluate whether or not implementation of additional BMPs are needed in the pollution prevention plan to address the observed contaminant.

A cleanup of the site should be conducted if the pollutant source is known and well defined. The FOD, DEP, and MSGP representative of EPC-CP should also be contacted and made aware of the situation.

Refer to EPC-CP-QP-022, *MSGP Corrective Actions*.

## 6.0 TRAINING

The following personnel require training before implementing this procedure:

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- EPC-CP technical staff and subcontract or other personnel who retrieve stormwater samples and conduct visual assessments at automated samplers, single stage stormwater samplers, or by grab sample for the MSGP.

For EPC-CP staff, the training method for this procedure is “self-study” (reading). Other participating groups may require training documentation pursuant to local procedures.

Personnel performing this procedure will be familiar with the most current versions of the following procedures and operation manuals:

- EPC-CP MSGP Sampling and Analysis Plan for the current monitoring year

## 7.0 RECORDS

Records generated by this document and signed by the EPC-CP certifier will be submitted to the EPC-CP Records Management designated point of contact or document manager in accordance with P1020-1, *Laboratory Records Management* and with ADESH-AP-006, *Records Management Plan*.

- EPC-CP-Form-1021, *MSGP Quarterly Visual Assessment*

## 8.0 DEFINITIONS AND ACRONYMS

See LANL *Definition of Terms*.

### 8.1 Definitions

**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).

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**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.

## 8.2 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 Express	Maintenance Connection MC Express web application
MSGP	Multi-Sector General Permit
NPDES	National Pollutant Discharge Elimination System
SWPPP	Storm Water 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: September 29, 2008, Volume 73, Number 189

P1020-1, Laboratory Records Management

ADESH-AP-006, Records Management Plan

EPC-CP-QP-022, MSGP Corrective Actions

## 10.0 ATTACHMENTS

**Attachment 1:** *Screenshot Examples of EPC-CP-Form-1021 in MC Express*

**Attachment 2:** *EPC-CP-Form-1021 Hard Copy Example*

**Attachment 3:** *Screenshot Examples of Printing from Maintenance Connection*



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## Attachment 1 – Screenshot Examples of EPC-CP-Form-1021 in MC Express

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Work Order Summary Page (section 4.0, step 2)

The screenshot displays the MC Express interface for a work order summary. At the top, the header bar shows a back arrow, the text 'MC Express', and a menu icon. Below the header, the work order number 'WORK ORDER: MSGP-4344' is displayed, followed by a 'Summary' tab and flags. A card below shows a clipboard icon and the text '[MSGP00901] MSGP00901 TA-3-22 Power & Steam Plant Requested'. A section titled 'EXAMPLE MSGP Visual Assessment' contains a list of items:

Item	Count
Tasks	15
Assignments	1
Labor	0
Parts	0
Other Costs	0
Attachments	2
Asset History	121

Below the list is a 'More Work Order Detail...' link with a right arrow icon. The bottom navigation bar includes an information icon, a 'Refresh' button, a grid icon, and a 'List' button.

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## Attachment 1 – Screenshot Examples of EPC-CP-Form-1021 in MC Express

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### Work Order Tasks Page – Documenting Sample Information (Section 4.0, Step 3)

MC Express

WORK ORDER: MSGP-4344

Tasks

The result of this VA applies to associated SIOs as defined in the SWPPP, where applicable.

**Sample information**

30	Document the monitoring Period (e.g., Apr-May)	↓
40	Document the Date/Time Discharge began in the "Reading" field of this line (using mm/dd/yy hh:mm format).	↓
50	Document the Date/time sample collected in the "Reading" field of this line (using mm/dd/yy hh:mm format).	↓
60	Document the Date/time sample visually assessed in the "Reading" field of this line (using mm/dd/yy hh:mm format).	↓
70	Document the nature of discharge (e.g., rain, snowmelt). Document the TOTAL amount (in) in the "Reading" field of this line.	↓
80	Sample collected in first 30 minutes of discharge? If "Failed" or unknown, provide a reason.	↓

Refresh List

MC Express

WORK ORDER: MSGP-1423

Edit Task

30 Document the monitoring Period (e.g., Apr-May)

Reading

Jun-July

Initials

Failed?

No

Not Applicable?

No

Complete?

Yes

Comments

Cancel Save

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## Attachment 1 – Screenshot Examples of EPC-CP-Form-1021 in MC Express (cont.)

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### Work Order Tasks Page – Assessing Parameters (section 4.2, step 7)

MC Express

WORK ORDER: MSGP-4344

Tasks

Parameters

110

Is sample colorless? If "Failed", describe.

↓

120

Is sample odorless? If "Failed", provide description (e.g. musty, sewage, sulfur, sour, solvent, petroleum/gas)

↓

130

Is sample clear? If "Failed", provide description (e.g., slightly cloudy, cloudy, opaque).

↓

140

Is sample free of floating solids? If "Failed", describe if raw or waste material(s) in the comments of this line.

↓

150

Is sample free of settled solids? If "Failed", provide description (e.g., fine, coarse).

↓

160

Is sample free of suspended solids? If "Failed", provide description (e.g., fine, coarse).

↓

170

Is sample foamless after gently shaking? If "Failed" describe foam color and location (e.g., 'on the surface' or 'in the sample').

↓

180

Is sample devoid of an oil sheen? If "Failed", describe color and thickness (e.g. flecks, globs).

↓

190

Is sample free of other obvious indicators of pollution? If "Failed", describe.

↓

Refresh

List

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## Attachment 1 – Screenshot Examples of EPC-CP-Form-1021 in MC Express (cont.)

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Work Order Status Update Page (section 4.3, steps 3 and 4)

MC Express

WORK ORDER: MSGP-4344  
Status Update

Issued / Completed

New Status **16**

Completed

Date

6/19/2018 10:48 AM

Percent Complete 100%

Labor Report Update **17**

Select Comments to Add.....

Jane Admin

Cancel Save

Work Order Status Update Page (section 4.3, step 6)

MC Express

WORK ORDER: MSGP-4344  
Status Update

Signature **18**

(Remove)

Jane Admin


Cancel Save

**Attachment 2 – EPC-CP-Form-1021 Hard Copy Example**

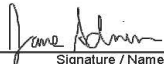
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Los Alamos National Lab - ADESH

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**Target:** 12/31/2018**Procedure:** MSGP Quarterly Visual  
Assessment (EPC-CP-  
Form-1021.2)**Priority/Type:** / Inspection**Last PM:** 5/5/2010**Department:** Utilities and Infrastructure MSGP Program RG121.9 TA-3-22 Power & Steam Plant Monitored Outfall (009) MSGP00901**Reason:** EXAMPLE MSGP Visual Assessment**Contact:** Admin, Jane**Phone:** 123-4567**Special Instructions:** NMR053195**Tasks**

#	Description	Meas.	No	N/A	Yes
The result of this VA applies to associated SIOs as defined in the SWPPP, where applicable.					
<b>Sample information</b>					
1 30	Document the monitoring Period (e.g., Apr-May)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 40	Document the Date/Time Discharge began in the "Reading" field of this line (using mm/dd/yy hh:mm format).		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 50	Document the Date/time sample collected in the "Reading" field of this line (using mm/dd/yy hh:mm format).		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 60	Document the Date/time sample visually assessed in the "Reading" field of this line (using mm/dd/yy hh:mm format).		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 70	Document the nature of discharge (e.g., rain, snowmelt). Document the TOTAL amount (in) in the "Reading" field of this line.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 80	Sample collected in first 30 minutes of discharge? If "Failed" or unknown, provide a reason.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Parameters</b>					
7 110	Is sample colorless? If "Failed", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8 120	Is sample odorless? If "Failed", provide description (e.g. musty, sewage, sulfur, sour, solvent, petroleum/gas)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9 130	Is sample clear? If "Failed", provide description (e.g., slightly cloudy, cloudy, opaque).		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10 140	Is sample free of floating solids? If "Failed", describe if raw or waste material(s) in the comments of this line.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11 150	Is sample free of settled solids? If "Failed", provide description (e.g., fine, coarse).		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12 160	Is sample free of suspended solids? If "Failed", provide description (e.g., fine, coarse).		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13 170	Is sample foamless after gently shaking? If "Failed" describe foam color and location (e.g., 'on the surface' or 'in the sample').		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14 180	Is sample devoid of an oil sheen? If "Failed", describe color and thickness (e.g. flecks, globs).		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15 190	Is sample free of other obvious indicators of pollution? If "Failed", describe.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Labor Report**16 **Completed:** 6/19/2018 10:48:00 AM17 **Report:** Jane Admin18   
Signature / Name6/19/2018  
Date

Signature / Name

Date

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

EPC-CP-Form-1021.2 09/2018

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## Attachment 2 – EPC-CP-Form-1021 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: \_\_\_\_\_

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### Attachment 3 – Screenshot Examples of Printing from Maintenance Connection

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#### Maintenance Connection Modules Page (Section 4.4)

The first screenshot shows the 'Work Orders' module in the 'Home - Summary' view. The 'Work Orders' icon is circled in red. A dashed arrow points from the 'Work Orders' icon to the 'Search' button in the second screenshot.

The second screenshot shows the 'Work Orders' search interface. The 'Search' button is circled in red. A dashed arrow points from the 'Search' button to the 'Report' button in the third screenshot.

The third screenshot shows the 'Work Order: MSGP-58534' details page. The 'Report' button is circled in red. A dashed arrow points from the 'Report' button to the 'Print' button in the bottom screenshot.

The bottom screenshot shows the 'Work Order: MSGP-58534' details page with the 'Print' button circled in red. The page title is 'Work Order: MSGP-58534' and the location is 'Los Alamos National Lab - ADESH'. The page content includes 'MSGP Monitoring Stations' and 'Printed 9/21/2016 - 2:26 PM (Duplicate Copy)'. The 'Print' button is circled in red.



Attachment 18: **EPC-CP-QP-047 INSPECTING STORMWATER RUNOFF SAMPLERS AND RETRIEVING  
SAMPLES FOR THE MSGP**

**EPC-CP-QP-047**

Revision: 2



Effective Date: 09/06/2017

Next Review Date: 09/06/2020

**Environment, Safety, and Health Directorate****Environmental Protection and Compliance Division – Compliance Programs****Quality Procedure****Inspecting Stormwater Runoff Samplers and  
Retrieving Samples for the MSGP****Document Owner/Subject Matter Expert:**

Name:	Organization:	Signature:	Date:
Holly L. Wheeler	EPC-CP	Signature on File	9-5-17

**Derivative Classifier:** ☐ Unclassified or ☒ DUSA ENVPRO

Name:	Organization:	Signature:	Date:
Ellena I. Martinez	EPC-CP	Signature on File	8-22-17

**Approval Signatures:**

Subject Matter Expert:	Organization:	Signature:	Date:
Holly L. Wheeler	EPC-CP	Signature on File	9-5-17
Responsible Line Manager:	Organization:	Signature:	Date:
Terrill W. Lemke	EPC-CP Team Leader	Signature on File	9-5-17
Responsible Line Manager:	Organization:	Signature:	Date:
Anthony R. Grieggs	EPC-CP Group Leader	Signature on File	9-6-17

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#### REVISION HISTORY

<b>Document Number and Revision</b> <i>[Include revision number, beginning with Revision 0]</i>	<b>Effective Date</b> <i>[Document Control Coordinator inserts effective date]</i>	<b>Description of Changes</b> <i>[List specific changes made since the previous revision]</i>
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, and added crosswalk to electronic form in MC Express. This document replaces ENV-RCRA-QP-047 R1.

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## 1.0 INTRODUCTION

Los Alamos National Security, LLC (LANS) 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 Los Alamos National Laboratory (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 stormwater samplers and retrieving stormwater runoff samples from monitored outfall locations where LANS conducts stormwater monitoring activities pursuant to the NPDES, MSGP at LANL.

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.)

### 1.2 Scope

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.

The MSGP Program Lead is the primary person with responsibility for the steps in this procedure. EPC-CP personnel will be appointed with responsibility for a subset of sampling stations.

### 1.3 Applicability

Stormwater runoff samples are collected at MSGP Program stations either with a refrigerated Avalanche® or ISCO 3700 automated sampler, single stage sampler or grab sample. ISCOs are designed to automatically collect water when the water surface is high enough to trigger a liquid level actuator and fill the sample bottles. 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 program personnel.

## 2.0 PRECAUTIONS AND LIMITATIONS

Hazards in the work described in this procedure are controlled thorough site specific Integrated Work Documents (IWDs). The hazard level of the activities in this procedure is **moderate**.

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.

Inspections may be discontinued during periods or conditions that make sites dangerous for worker safety or prevent personnel from safely accessing sites (e.g., weather-related events such as flash

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floods, flooding, lightning, wildfires, hail, icy roads, deep snow, or LANL operations such as firing shots or burns).

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. 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.
2. Inform (e.g., by e-mail) Facility contacts, as specified in the IWD, of the schedule for sampler inspection work and locations up to a week (preferred) before but no later than the day before (for minor changes) to be added to the appropriate plan of the day.

**Note:** For some Facility Operations Divisions (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.

3. The IWD Part II (2101 Form) addresses specific requirements and training for FODs.
4. Obtain any necessary additional paperwork before conducting this work, including IWD’s, and excavation permits (as necessary).
5. Gather the required equipment (see section below) for the work to be done.
6. Using the Safari 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 using your login credentials.
8. Confirm that the work order list displayed in the “My Open Work Orders” section matches your sites (see example in Attachment 1). If work orders are not displayed, click the “Refresh” bar at the bottom of the page. The page will refresh and any work orders issued since you logged in will be loaded to the application. If the work order lists still do not match, contact the MSGP Data Management Team for clarification.
9. 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 at all times, with no daylight saving time adjustment.

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### 3.2 Tools and Equipment

Ensure the following equipment is available in the field vehicle:

- Safety glasses with side shields
- Sturdy hiking boots or steel toed shoes with soles that grip
- Nitrile gloves
- Cell phone (only government cell phones with batteries removed are allowed in secure areas)
- Copy of this procedure
- Copy of the Integrated Work Documents (IWDs)
- Copy of the MSGP Sampling and Analysis Plan
- Site Map(s) (as needed)
- Current electronic or paper inspection form EPC-CP-Form-1010, MSGP ISCO Sampler Inspection and Sample Retrieval
- Sample Collection Log/Field Chain of Custody (see EPC-CP-QP-048)
- Government issued iPad equipment with Safari web browser and Good™ app.
- Necessary access and station keys
- 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
- Zip lock bags
- Chain of custody seals



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- 0.45 micron filter (where applicable)

#### 4.0 INSPECTING STORMWATER SAMPLERS AND RETRIEVING SAMPLES

Throughout this procedure the field inspector should document comments and notations in the “Reading” field of the associated task line. Any additional comments not documented in a “Reading” field can be entered in the “Comments” field of the same task line. If the inspector needs 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.

#### 4.1 Inspecting the Sampler

1. If conditions prevent a sampler inspection, document the conditions in the “Labor Report Update” field on the work order and notify the Program Lead or designee within 24 hours. Multiple attempts can be documented on the original inspection work order. If the target date cannot be met, the inspector must contact the MSGP Program Lead no less than 24 hours before target date for guidance.
2. In MC Express open the work order issued for the current location by clicking on the appropriate line. If needed, use the expand arrow located on the right side of the display to expand the work order detail information. The work order will open in the display to the work order Summary page.
3. Click on the “Tasks” bar to navigate to the work order Tasks page.
4. Remove the top cover from the sampler.

##### 4.1.1 On Arrival

5. **Item 1:** Verify and document the sampler is ON and its condition upon arrival by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes” (see example in Attachment 1). Explain any non-functional status (remember to use the “Reading” field unless more space is needed for comments). A hard copy inspection example is provided in Attachment 2 as a crosswalk to the electronic format.  
  
If a sampler has been inactivated (e.g., sample collection completed) prior to this inspection but continues to appear on the inspection form, change the “N/A” line to “Yes”. Subsequent questions regarding this sampler may be left unanswered in this section.

#### **CAUTION**

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

6. **Item 2:** Verify and document the ISCO programming displays the following by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”.

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ISCO 3700 sampler display should indicate “Sampler Inhibited”

OR

Avalanche sampler display should indicate “Program Disabled”

If the display does not indicate these messages, describe the messages (e.g., “Done X samples”, “sampler off”, etc.). If there is no indication of flow and the sampler triggered due to a non-flow event (e.g., animal, tumbleweed, etc.), describe this. Document any messages from the ISCO display.

7. **Item 3:** Verify and document the sampler is set to the correct Mountain Standard Time +/- no more than 1 minute by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. If the sampler is set incorrectly, reprogram for the correct Mountain Standard Time. Describe the work performed and correction applied (e.g., “ISCO clock was X minutes slow”).
8. If the location has more than one sampler complete Steps 5 through 7 for each sampler.
9. Don nitrile gloves and safety glasses.
10. Remove the center section from the sampler.

#### **4.1.2 Water Collection Information**

11. **Item 4:** Document any evidence of storm water flow at the sampling location by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Describe the evidence of flow (e.g. sediment or vegetation movement, erosion, standing water).
  - If the sampler did not trip but there is evidence of flow, document the date and time storm water discharge began from the precipitation report.
  - If the sampler tripped or collected storm water, document the date/time stamp from the sampler if available or from the precipitation report.
12. **Item 5:** Document if any storm water was collected (from either a sampler or by grab sample) by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. If any water was collected, complete the Bottle Information section (**Item 20**). Document if the water is taken by grab sample. Follow the steps in Section 4.2 of this procedure to retrieve samples.
13. **Item 6:** For Avalanche samplers only, verify and document the current refrigerator temperature of the sampler if water was collected by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Record the temperature. If unable to review temperature, check “No” and describe the condition (e.g. dead battery, electrical short).

If no water was collected the field inspector may change the “N/A” line to “Yes”.

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14. **Item 7:** For Avalanche samplers equipped with an ISCO pH and Temp Module, verify and document a pH measurement was taken on the collected water by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Record the pH measurement taken at the time of Bottle 1 as “Average: Minimum:Maximum.” If unable to review pH, check “No” and describe the condition (e.g. damaged meter).

If no water was collected the field inspector may change the “N/A” line to “Yes”.

#### **4.1.3 Water Retrieval Information**

15. **Item 8:** Verify and document whether a sample volume was retrieved (from either a sampler or by grab sample) and taken off site by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. If sample volume was retrieved, record the total volume **taken off site**.
16. **Item 9:** Verify and document whether a visual assessment of the water was performed by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. The MSGP program visual assessment form is not included in this procedure (see EPC-CP-QP-064). Ensure this form is submitted with the sampler inspection form. If the sample was filtered, conduct the visual assessment and document “Filtered sample.”

#### **4.1.4 On Departure**

17. **Item 10:** Verify all cable and electrical connections are attached and firmly tightened (not loose) upon departure from the site by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”.

Connections may work loose over time due to temperature changes and if there are dissimilar metals at the connection points. The loose connections can introduce voltage spikes which inherently cause current spikes that may result in blown fuses.

If the cables require replacement, connections require tightening, or other maintenance performed, describe the work performed (e.g., “tightened connectors on battery”).

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).

18. **Item 11:** Verify and document power supply function. Use a voltage meter to check the voltage of the battery(s) and record the voltage(s). Change the “Complete” or “Failed” line to “Yes” to indicate if battery voltage is acceptable upon departure from the station ( $\geq 11.7$  for non-floating charged batteries at ISCO 3700 samplers and  $\geq 11.0$  for floating-charged batteries at Avalanche samplers).

Check the voltage of the solar panel if access can be gained to the weather protected terminal covers on the back of the panel.

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#### 4.1.5 Equipment Specific Tasks

19. **Item 12:** Verify and document the sampler passes the diagnostic test by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Directions for running the diagnostics test is provided in ENV-CP-QP-045.

If a sampler has been inactivated (e.g., sample collection completed) prior to this inspection but continues to appear on the inspection form, change the “N/A” line to “Yes” on this task line. Subsequent questions regarding this sampler may be left unanswered in this section.

#### **Warning**

The internal pump tubing must be replaced if the pump tubing life has reached or exceeded the preset pump counts. The internal pump tubing life is set 500,000 pump counts for the 3700 and 1,000,000 for the Avalanche.

Only reset the pump counts after replacing the internal tubing.

If maintenance is necessary and can be performed at the time of inspection, describe the work performed. If maintenance cannot be completed at the time of inspection, then describe the condition and follow up with a description of work needed.

If a sampler has been inactivated (e.g., sample collection completed) prior to this inspection but continues to appear on the inspection form, change the “N/A” line to “Yes” on this task line. Subsequent questions regarding this sampler may be left unanswered in this section.

20. **Item 13:** Verify and document the sample tubing is free or clear of debris by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”.

Check the physical condition of the sampler including the actuator and intake line for correct location and height in the channel. The actuator, intake line and strainer (if used) should be placed on the cutting side of the channel to help minimize the possibility of sediment burying the intake line/strainer. Adjust as necessary to capture flow within the channel. The actuator, intake line and strainer must be clear of debris (sediment, pine needles, etc.).

If maintenance (e.g., clearing the tube, reposition tubing intake) is necessary and can be performed at the time of inspection, perform the work and describe. If maintenance cannot be completed at the time of inspection (e.g., can’t clear intake tubing and spare intake tubing not on hand to replace) then describe the condition and follow up with description of work needed.

21. **Item 14:** Verify and document the sample tubing has passed a suction test by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. Check the condition of sample tubing and vent tubing.

If maintenance (e.g., replace internal pump tubing) is necessary and can be performed at the time of inspection, perform the work and describe. If maintenance (e.g., replace sampler

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pump) cannot be completed at the time of inspection then describe the condition and follow up with description of work needed.

22. **Item 15:** Verify and document the sampler is ON prior to departing the site by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”.
23. **Item 16:** Verify and document the liquid level actuator has been set to “Latch” prior to departing the site by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. If the sampler tripped and requires reset of the sampling program, reset the actuator by toggling the switch to “Reset” and then back to “Latch”.
24. **Item 17:** Verify and document the ISCO programming displays the following by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”.

ISCO 3700 sampler display should indicate “Sampler Inhibited”

OR

Avalanche sampler display should indicate “Program Disabled”

If an error occurs, reconfigure the sampler per EPC-CP-QP-045.

25. If the location has more than one sampler complete Steps 19 through 24 for each sampler.

#### **4.1.6 Maintenance Information**

26. **Item 18:** Verify and document any maintenance completed while on site that is not documented elsewhere on work order by changing the “Complete” or “Failed” line to “Yes”. Describe the work performed.

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.

If a battery was replaced record the voltage of the new battery and the battery identification number. If the battery does not have an identification number, contact the MSGP Program Manager to have one assigned. Once assigned, the number must be painted or written in a permanent manner on the battery.

27. **Item 19:** Verify and document any maintenance needed that could not be completed while on site that is not documented elsewhere on work order by changing the “Complete” or “Failed” line to “Yes”. Describe any work needed. Refer to EPC-CP-QP-045 for sampler operation and maintenance.

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#### 4.1.7 Bottle Information

28. **Item 20:** Document water collected by clicking the expand arrow located on the right side of each bottle's task line and change the "Complete" or "Failed" line to 'Yes'. Record 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 of water in the bottle
- Type of bottle (e.g. G for glass, P for poly)
- Specific ISCO displayed message, if present

If the sampler(s) did not trigger, change the "N/A" line to 'Yes' for Bottle #1 of each sampler and leave the other Bottle task lines unanswered.

If a sampler has been inactivated (e.g., sample collection completed) prior to this inspection but continues to appear on the inspection form, change the "N/A" line to "Yes" on this task line. Subsequent questions regarding this sampler may be left unanswered in this section.

29. If the location has more than one sampler complete Step 28 for each sampler.
30. Replace and secure the sampler top cover and secure the sampler shelter (if sampler is in a shelter).

#### 4.2 Retrieving Samples

1. Don nitrile gloves and safety glasses.
2. Add up the volume of water collected (see flow chart in Attachment 3) and check that the total volume of water in glass and poly matches the required volume for the specific location identified in the MSGP Sampling and Analysis Plan. The volume of water required to complete analytical may vary by monitored location.
  - If sample volume is sufficient to fulfill all analytical requirements, continue with Step 3.
  - If sample volume is sufficient to fulfill part of the analytical requirements, consult the prioritization order on the MSGP Sampling and Analysis Plan to determine which analytical to fulfill OR contact the MSGP Data Manager, continue with Step 3 but retrieve only the volume needed.
  - If the collected sample will NOT fulfill the minimum required volume for any analytical:
    - Record total volume retrieved as "0" in **Item 8**
    - Complete a Visual Assessment (see EPC-CP-QP-064)
    - Pour out all water on the ground
    - Skip to Step 10 below

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#### **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. Refer to the MSGP Sampling and Analysis Plan for preservation requirements.

3. Remove filled and partially-filled bottles from the carousel.
4. For samples retrieved, immediately place lids onto the sample bottles and securely seal. Place custody seal tape on each bottle.
5. Write the date and time collected, Sampler Location number, and the corresponding carousel number on each retrieved sample bottle. Retrieve the sample collection date and time from the ISCO sampler.
6. Record total volume retrieved in **Item 8**.
7. Conduct a Visual Assessment (see EPC-CP-QP-064).
8. Place retrieved sample bottles in a cooler with blue ice (or equivalent).
9. Return any excess water or collected volume that exceeded the amount required to the ground at the location collected.
10. Install new certified clean sample bottles in the carousel to replace those bottles that collected stormwater. The number and type of bottles may vary. Ensure bottles match the configuration specified in the MSGP Sampling and Analysis Plan.
11. The 0.45 micron filter may also need to be replaced. Consult the most current revision of the Sampling and Analysis Plan for specifics. If the sampler is turned off for the quarter but new certified clean sample bottles and/or the filter have not been replaced, note this as follow-up maintenance required (see **Item 19**).
12. Replace and secure the center section of the sampler.
13. Return to steps in Section 4.1.

#### **4.3 Completing the Inspection Form**

1. When 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.

#### **CAUTION**

MC Express automatically changes the work order status to “Closed” and auto-populates the date and time fields.



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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. Ensure the date and time auto-populated are the date and time the inspection was completed.

If these fields need to be updated, click the “Date” field to modify it. Make necessary adjustments using the available timestamp application and click “Set” to apply changes.

6. **Item 22:** The inspector must type in his/her name in the “Labor Report Update” field.  
Any additional notes, observations, or site conditions not documented in a task line “Reading” or “Comments” field can also 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.
8. **Item 23:** 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:** If using MC Express on a desktop screen (not a tablet), the mouse must be used to sign electronically.

9. Click on the “Save” bar at the bottom of the page to close the “Signature” field.
10. Click on the “Back” button located in the upper left hand corner to return to the “My Open Work Orders” page.
11. Once you have completed an inspection, click on the Menu button again, and then click the “Logout” bar. Close the browser. All work will automatically uploaded from the MC Express application to the MC database.

**Always log out of MC Express when you have finished work OR if work is interrupted.**

#### **4.4 REMOVING STORMWATER SAMPLES FROM THE FIELD**

1. If samples were collected, deliver the samples and corresponding Sample Collection Log/Field Chain of Custody form to the EPC-CP Stormwater Program Laboratory at TA-59-1.
2. Sign the Sample Collection Log/Field Chain of Custody and place it with the sample(s) in the refrigerator. Ensure custody seal tape is intact on each sample bottle. Lock the refrigerator to prevent tampering. Refer to EPC-CP-QP-048, *Processing MSGP Stormwater Samples* for instruction on processing samples and submitting samples for shipping to an analytical laboratory.

#### **5.0 TRAINING**

The following personnel require training before implementing this procedure:

- EPC-CP technical staff and subcontract or other personnel who inspect automated stormwater samplers and retrieve stormwater samples for the MSGP.

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For EPC-CP staff the training method for this procedure is “self-study” (reading). Other participating groups may require training documentation pursuant to local procedures.

Personnel performing this procedure will be familiar with the most current versions of the following procedures and operation manuals:

- EPC-CP MSGP Sampling and Analysis Plan for the current monitoring year
- Manual for Teledyne ISCO Sampler Model 3700
- Manual for Teledyne ISCO Avalanche® sampler
- Manual for Teledyne ISCO 701 pH/Temperature module (if equipped at station)

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.

## 6.0 RECORDS

Records generated by this document will be submitted to the EPC-CP Records Management designated point of contact or document manager in accordance with P1020-1, *Laboratory Records Management* and with ADESH-AP-006, *Records Management Plan*.

- Completed ISCO Sampler Inspection and Sample Retrieval form(s)

## 7.0 DEFINITIONS AND ACRONYMS

### 7.1 Definitions

See LANL *Definition of Terms*.

### 7.2 Acronyms

See LANL *Acronym Master List*.

EPC-CP	Environmental Protection and Compliance-Compliance Programs
IWD	Integrated Work Document
LANL	Los Alamos National Laboratory
LANS	Los Alamos National Security, LLC
MC Express	Maintenance Connection MC Express web application
MSGP	Multi-Sector General Permit
NPDES	National Pollutant Discharge Elimination System

## 8.0 REFERENCES

None.

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## 9.0 ATTACHMENTS

**Attachment 1:** Screenshot Examples of EPC-CP-Form-1010.02 in MC Express

**Attachment 2:** Crosswalk of EPC-CP-Form-1010.02 Hard Copy Format to Electronic Format Example

**Attachment 3:** Flow Chart for Sample Retrieval

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## Attachment 1: Screenshot Examples of EPC-CP-Form-1010.02 in MC Express

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**MC Express**

**WORK ORDERS**  
All Repair Centers / All Shops

- My Open Work Orders**  
Open work orders assigned to me **3**
- My Completed Work Orders**  
Completed work orders assigned to me **1**
- All Open (Unassigned)**  
All open work orders that are unassigned **13**
- All Open (Not Complete)**  
All open work orders that are not complete **115**
- All Open (Overdue)**  
All overdue work orders that are not complete **9**
- All Open**  
All open work orders **200**
- All Closed**  
All closed work orders **6,662**

**ASSETS**  
All Repair Centers / All Shops

- Asset Hierarchy**  
Hierarchical view of assets
- Asset List**  
List view of all assets **2,955**

**Refresh**

**MC Express**

**WORK ORDERS**  
My Open Work Orders

- #MSGP-59941**  
MSGP07302  
ISCO Sampler Inspection and Sample Retrieval  
12/31/2017
- #MSGP-4342**  
TA-3-22 Power & Steam Plant  
MSGP Single Stage Sampler Inspection  
12/30/2016
- #MSGP-1423**  
MSGP07302  
MSGP Visual Assessment Example  
12/31/2017

**3 Records**

**Refresh**

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## Attachment 1: Screenshot Examples of EPC-CP-Form-1010.02 in MC Express (cont.)

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MC Express

WORK ORDER: MSGP-59941  
Summary

[MSGP07302] MSGP07302  
TA-3-38 Carpenter Shop  
Issued

Hard Copy Inspection Example

- Tasks 44
- Assignments 1
- Labor 0
- Parts 0
- Other Costs 0
- Attachments 2
- Asset History 52

More Work Order Detail...

Refresh List

MC Express

WORK ORDER: MSGP-59941  
Tasks

ON ARRIVAL

- 20  
Is sampler ON and functioning properly upon arrival?  
Asset: [210C01437] ISCO 3700 Sampler
- 30  
Does the sampler display "Sampler Inhibited"? If No, record specific message(s).  
Asset: [210C01437] ISCO 3700 Sampler
- 40  
Is sampler time delta < 1 min (MST)? If No, record adjustment  
Asset: [210C01437] ISCO 3700 Sampler
- 50  
Is sampler ON and functioning properly upon arrival?  
Asset: [210J01522] ISCO Avalanche Sampler
- 60  
Does the Avalanche display "Program Disabled"? If No, record specific message(s).  
Asset: [210J01522] ISCO Avalanche Sampler
- 70  
Is sampler time delta < 1 min (MST)? If No, record adjustment  
Asset: [210J01522] ISCO Avalanche Sampler

Refresh List

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## Attachment 1: Screenshot Examples of EPC-CP-Form-1010.02 in MC Express (cont.)

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MC Express

WORK ORDER: MSGP-59941  
Edit Task

20  
Is sampler ON and functioning properly upon arrival?  
[210C01437] ISCO 3700 Sampler

Reading

Sampler knocked over by bear, power disconnected

Initials

Failed?

Yes

Not Applicable?

No

Complete?

No

Comments

Cancel Save

MC Express

WORK ORDER: MSGP-59941  
Tasks

Water Collection Information

90  
Is there evidence of flow? If YES (but no water collected), describe and record date/time of discharge.

100  
Is any water collected? If YES, complete Bottle Information section.

110  
If water was collected, record current refrigerator temperature (C).  
Asset: [210J01522] ISCO Avalanche Sampler

120  
If water was collected, record the pH measurement corresponding to the sample date/time: AVERAGE: ...  
Asset: [211C01137] ISCO pH and Temp Module

Water Retrieval information

140  
Was sample volume RETRIEVED? If Yes, record total volume retrieved.

150  
Was a Visual Assessment performed? If Yes, complete the MSGP Visual Assessment form (EPC-CP-TP-064).

Refresh List

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## Attachment 1: Screenshot Examples of EPC-CP-Form-1010.02 in MC Express (cont.)

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This screenshot shows the 'ON DEPARTURE' section of the MC Express interface. At the top, there is a blue header with a back arrow, the text 'MC Express', and a menu icon. Below the header, a grey bar displays 'WORK ORDER: MSGP-59941' and 'Tasks' with a checkered flag icon and a dropdown arrow. A black bar with white text reads 'ON DEPARTURE'. The main area contains two task entries, each with a flag icon, a red box with a number, a task description, and a right-pointing arrow. The first task is labeled '170' and asks 'Are electrical connections secure?'. The second task is labeled '180' and asks 'Record voltage of battery(ies) powering sampler. Voltage(s) >=11.7V?'. At the bottom, a blue bar contains an information icon, the text 'Refresh', a grid icon, and the text 'List'.

This screenshot shows the 'Equipment specific tasks' section of the MC Express interface. It features the same blue header and grey work order bar as the previous screenshot. A black bar with white text reads 'Equipment specific tasks'. The main area contains six task entries, each with a flag icon, a red box with a number, a task description, and a right-pointing arrow. The tasks are labeled 200, 210, 220, 230, 240, and 250. Each task description includes the question and the asset name '[210C01437] ISCO 3700 Sampler'. For example, task 200 asks 'Does the sampler pass the ISCO diagnostics test?'. At the bottom, a blue bar contains an information icon, the text 'Refresh', a grid icon, and the text 'List'.

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## Attachment 1: Screenshot Examples of EPC-CP-Form-1010.02 in MC Express (cont.)

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The screenshot shows the MC Express mobile application interface. At the top, there is a blue header with a back arrow, the text "MC Express", and a menu icon. Below the header, a grey bar displays "WORK ORDER: MSGP-59941" and "Tasks" with a flag icon and a dropdown arrow. A black bar labeled "Maintenance information" is below. The main area lists two items: Item 330 with a red flag icon and a red box containing "18", asking "Is any maintenance not described above completed during inspection? If Yes, describe." with a right arrow; and Item 340 with a red flag icon and a red box containing "19", asking "Is any follow-on maintenance not described above required? If Yes, describe." with a right arrow. At the bottom, a blue bar contains an information icon, the text "Refresh", a grid icon, and the text "List".

The screenshot shows the MC Express mobile application interface. At the top, there is a blue header with a back arrow, the text "MC Express", and a menu icon. Below the header, a grey bar displays "WORK ORDER: MSGP-59941" and "Tasks" with a flag icon and a dropdown arrow. A black bar labeled "Bottle information: IF bottle collected record bottle type (P or G), collection date & time, volume, and/or any ISCO messages" is below. The main area lists four items, each with a red flag icon and a red box containing a number: Item 360 (Bottle #1?, Asset: [210C01437] ISCO 3700 Sampler), Item 370 (Bottle #2?, Asset: [210C01437] ISCO 3700 Sampler), Item 380 (Bottle #3?, Asset: [210C01437] ISCO 3700 Sampler), and Item 390 (Bottle #4?, Asset: [210C01437] ISCO 3700 Sampler). Each item has a right arrow. At the bottom, a blue bar contains an information icon, the text "Refresh", a grid icon, and the text "List".



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## Attachment 1: Screenshot Examples of EPC-CP-Form-1010.02 in MC Express (cont.)

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MC Express

WORK ORDER: MSGP-59941  
Edit Task

360  
Bottle #1?  
[210C01437] ISCO 3700 Sampler

Reading  
2/10/17 14:32; 1L poly; no more liquid detected

Initials

Failed?  
No

Not Applicable?  
No

Complete?  
Yes

Comments

Cancel Save

MC Express

WORK ORDER: MSGP-59941  
Status Update

Issued

New Status 21  
Completed

Date  
03/16/2017 12:03 PM

Percent Complete 100%

Labor Report Update 22  
Select Comments to Add.....  
Jane Admin

Cancel Save

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**Attachment 1: Screenshot Examples of EPC-CP-Form-1010.02 in MC Express (cont.)**

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MC Express

WORK ORDER: MSGP-59941  
Status Update

Signature 23

(Remove)

James Admin

Cancel Save

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## Attachment 2: Crosswalk of EPC-CP-Form-1010.02 Hard Copy Format to Electronic Format

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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 8/10/2017 11:23:00 AM  
**Procedure:** MSGP ISCO Sampler Inspection and Sample Retrieval (EPC-CP-Form-1010.2 2)  
**Last PM:** 7/20/2017  
**Project:** ISCO Inspections wk 8/7/17 (P-MSGP-5212)  
**Reason:** Hard Copy ISCO Sampler Inspection and Sample Retrieval

**Target:** 12/31/2017  
**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


### Tasks

#	Description	Meas.	No	N/A	Yes
<b>ON ARRIVAL</b>					
1 20	ISCO 3700 Sampler [210C01437] Is sampler ON and functioning properly upon arrival?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 30	ISCO 3700 Sampler [210C01437] Does the sampler display "Sampler Inhibited"? If No, record specific message(s).		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 40	ISCO 3700 Sampler [210C01437] Is sampler time delta < 1 min (MST)? If No, record adjustment		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50	ISCO Avalanche Sampler [210J01522] Is sampler ON and functioning properly upon arrival?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60	ISCO Avalanche Sampler [210J01522] Does the Avalanche display "Program Disabled"? If No, record specific message(s).		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
70	ISCO Avalanche Sampler [210J01522] Is sampler time delta < 1 min (MST)? If No, record adjustment		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Water Collection information</b>					
4 90	Is there evidence of flow? If YES (but no water collected), describe and record date/time of discharge.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 100	Is any water collected? If YES, complete Bottle Information section.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 110	ISCO Avalanche Sampler [210J01522] If water was collected, record current refrigerator temperature (C).		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 120	ISCO pH and Temp Module [211C01137] If water was collected, record the pH measurement corresponding to the sample date/time: AVERAGE: MINIMUM: MAXIMUM:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Water Retrieval information</b>					
8 140	Was sample volume RETRIEVED? If Yes, record total volume retrieved.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9 150	Was a Visual Assessment performed? If Yes, complete the MSGP Visual Assessment form (EPC-CP-TP-064).		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>ON DEPARTURE</b>					
10 170	Are electrical connections secure?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11 180	Record voltage of battery(ies) powering sampler. Voltage(s) >=11.7V?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Equipment specific tasks</b>					
12 200	ISCO 3700 Sampler [210C01437] Does the sampler pass the ISCO diagnostics test?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13 210	ISCO 3700 Sampler [210C01437] Is intake tubing free/clear of debris?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14 220	ISCO 3700 Sampler [210C01437] Does sample tubing pass suction test?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15 230	ISCO 3700 Sampler [210C01437] Is sampler on upon departure?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16 240	ISCO 3700 Sampler [210C01437] Has the actuator switch been reset to "Latch"?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17 250	ISCO 3700 Sampler [210C01437] Does ISCO display "Sampler Inhibited" on departure?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## Attachment 2: Crosswalk of EPC-CP-Form-1010.02 Hard Copy Format to Electronic Format (cont.)

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260	ISCO Avalanche Sampler [210J01522] Does the sampler pass the ISCO diagnostics test?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
270	ISCO Avalanche Sampler [210J01522] Is intake tubing free/clear of debris?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
280	ISCO Avalanche Sampler [210J01522] Does sample tubing pass suction test?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
290	ISCO Avalanche Sampler [210J01522] Is sampler on upon departure?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
300	ISCO Avalanche Sampler [210J01522] Has the actuator switch been reset to "Latch"?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
310	ISCO Avalanche Sampler [210J01522] Does Avalanche display "Program Disabled" on departure?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Maintenance information</b>				
18 330	Is any maintenance not described above completed during inspection? If Yes, describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19 340	Is any follow-on maintenance not described above required? If Yes, describe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Bottle information: IF bottle collected record bottle type (P or G), collection date &amp; time, volume, and/or any ISCO messages</b>				
20 360	ISCO 3700 Sampler [210C01437] Bottle #1?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
370	ISCO 3700 Sampler [210C01437] Bottle #2?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
380	ISCO 3700 Sampler [210C01437] Bottle #3?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
390	ISCO 3700 Sampler [210C01437] Bottle #4?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
400	ISCO 3700 Sampler [210C01437] Bottle #5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
410	ISCO 3700 Sampler [210C01437] Bottle #6?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
420	ISCO 3700 Sampler [210C01437] Bottle #7?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
430	ISCO 3700 Sampler [210C01437] Bottle #8?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
440	ISCO 3700 Sampler [210C01437] Bottle #9?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
450	ISCO 3700 Sampler [210C01437] Bottle #10?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
460	ISCO 3700 Sampler [210C01437] Bottle #11?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
470	ISCO 3700 Sampler [210C01437] Bottle #12?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
480	ISCO Avalanche Sampler [210J01522] Bottle #1?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
490	ISCO Avalanche Sampler [210J01522] Bottle #2?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
500	ISCO Avalanche Sampler [210J01522] Bottle #3?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
510	ISCO Avalanche Sampler [210J01522] Bottle #4?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Labor Report</b>				
Completed: 5/30/2017 4:44:00 PM				
Report: Jane Admin				
 Signature / Name		5/30/2017 Date		Signature / Name
I confirm the information as recorded is true, accurate and complete.				

WO ID: \_\_\_\_\_ Page \_\_\_\_ of \_\_\_\_

21 Date: \_\_\_\_\_ Time: \_\_\_\_\_

22 Name/Z#: \_\_\_\_\_

Name/Z#: \_\_\_\_\_

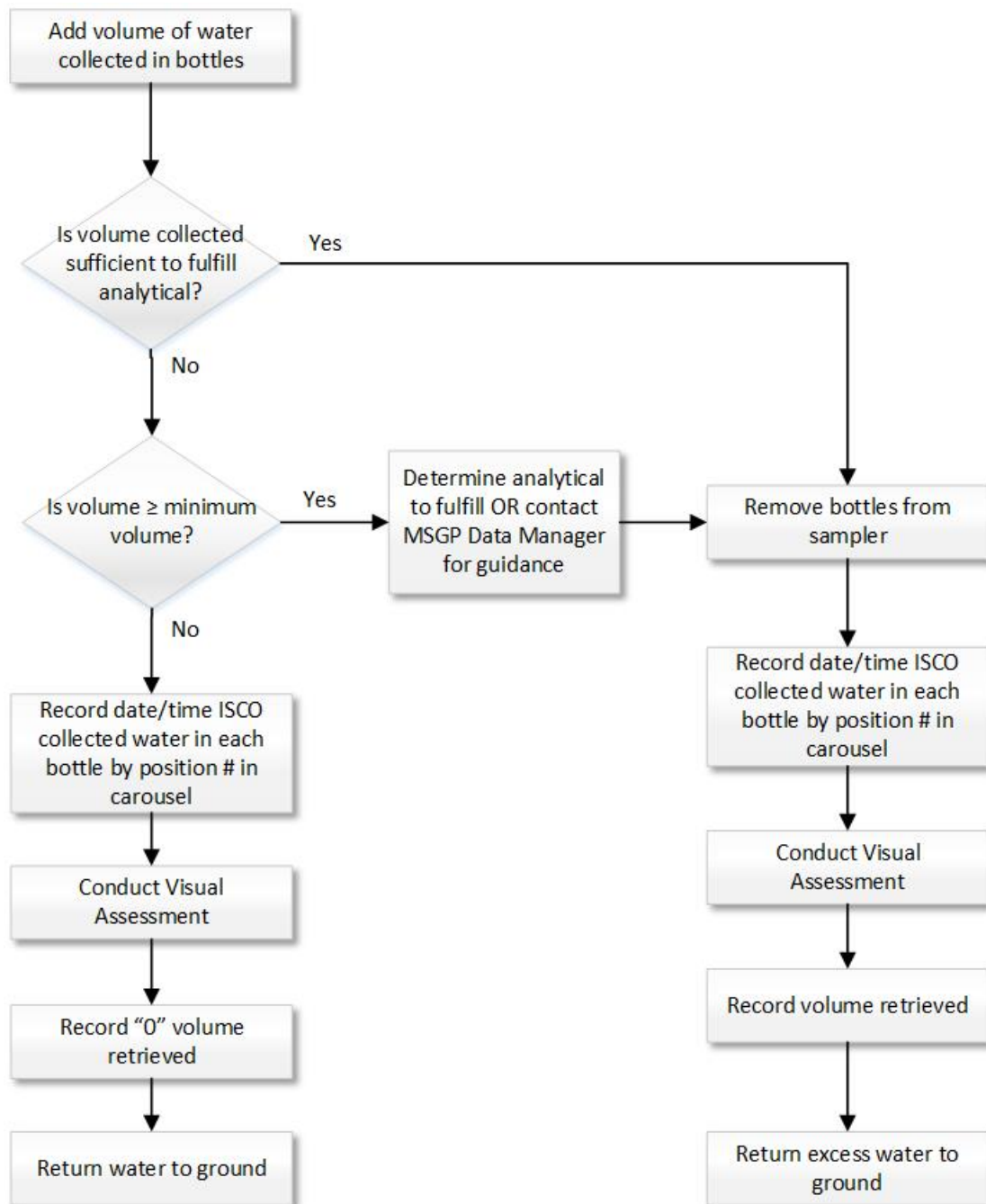
23 Lead Signature: \_\_\_\_\_

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

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### Attachment 3: Flow Chart for Sample Retrieval

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**Attachment 19: EPC-CP-QP-048 PROCESSING MSGP STORMWATER SAMPLES**

**EPC-CP-QP-048**

Revision: 3



Effective Date: 10/05/2017

Next Review Date: 10/05/2020

## Environment, Safety, and Health Directorate

### Environmental Protection and Compliance—Compliance Programs

### Quality Procedure

## Processing MSGP Stormwater Samples

#### Document Owner/Subject Matter Expert:

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#### Derivative Classifier: ☐ Unclassified or ☒ DUSA ENVPRO

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<b>Processing MSGP Stormwater Samples</b>	EPC-CP-QP-048	Page 2 of 14
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### REVISION HISTORY

<b>Document Number and Revision</b> <i>[Include revision number, beginning with Revision 0]</i>	<b>Effective Date</b> <i>[Document Control Coordinator inserts effective date]</i>	<b>Description of Changes</b> <i>[List specific changes made since the previous revision]</i>
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 step describing evidence of flow, and added section for addressing excess stormwater material.



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## 1.0 INTRODUCTION

Los Alamos National Security, LLC (LANS) 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 Los Alamos National Laboratory (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 filtering, preserving and preparing stormwater samples for shipment to an analytical laboratory from monitored outfall locations.

### 1.2 Scope

This procedure applies to the EPC-CP technical staff and subcontractor personnel (as applicable) who conduct processing and chemical preservation of stormwater samples either in the TA-59-1 Stormwater Laboratory or in the field.

The MSGP Program Lead is the primary person responsible for developing and updating this procedure. EPC-CP personnel will be appointed with responsibility for a subset of sampling stations.

### 1.3 Applicability

Stormwater samples are collected in the field either with a refrigerated Avalanche® or ISCO 3700 automated sampler, single stage sampler or grab sample. When in-line filtration is not possible, sample filtration along with chemical preservation will be 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 EPA and New Mexico Water Quality Control Commission guidelines. Monitoring samples are collected and analyzed according to test procedures approved under Title 40 of the Code of Federal Regulations (40 CFR) Part 136 unless other test procedures have been specified in the MSGP permit. Quantitation limits associated with these test procedures are sufficiently sensitive to meet MSGP permit limits.

## 2.0 PRECAUTIONS AND LIMITATIONS

Hazards in the work described in this procedure are controlled through site specific Integrated Work Documents (IWDs). The hazard level for the activities in this procedure is **moderate**.

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).

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### **3.0 PREREQUISITE ACTIONS**

#### **3.1 Planning and Coordination**

Promptly schedule and complete all stormwater processing to meet the analytical holding time requirements identified in the MSGP Sampling and Analysis Plan or as requested by the MSGP Program Lead.

The MSGP Data Manager will generate Sample Collection Log/Field Chain of Custody (SCL) 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 may be obtained from the Sample Management Office (SMO).

#### **3.2 Tools and Equipment**

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)
- Sample Collection Log/Field Chain of Custody Form
- Chain of Custody/Analysis Request
- Copy of the MSGP Sampling and Analysis 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 and/or 0.10 micron cartridge filters (where applicable)
- Paper Towels
- Coolers with ice, Blue Ice<sup>®</sup>, or equivalent
- Ball point pen
- Permanent marker
- Chain-of-custody seals/tape
- Copy of this procedure
- Copy of the Integrated Work Documents (IWDs)
- Cell phone (only government cell phones with batteries removed are allowed in secure areas)

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## 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 may be transferred (as necessary) during processing and shipped to the analytical laboratory.

### 4.1 Preparation for Processing Samples

1. Don nitrile gloves, safety glasses with side shields, and lab coat. Long pants are required and no open toed shoes are allowed. Prior to processing samples, confirm eyewash is operational.
2. On the work bench arrange sample collection bottles in order from one MSGP sampling location according to the ISCO carousel number marked on the bottle.

#### **CAUTION**

Process only one sample set (i.e., samples listed on one Sample Collection Log/Field Chain of Custody form) at a time to ensure stormwater from different locations is not co-mingled.

3. Cross check the Location ID (e.g. MSGP00201) on the sample bottles with the requested analysis for that location on the SCL form (see example in Attachment 1).
4. Write the following information on the SCL:
  - Sampler Inspection and Sample Retrieval form (QP-047) identification number (e.g. Work Order: MSGP-xxxx)
  - Date and time the sample was collected in the field (e.g., date/time automated sampler filled sample bottles or a grab sample was taken)
  - pH measurement taken at the time the sample was collected in the field (as necessary)
  - Indicate if evidence of flow was recorded by writing "Y" for Yes or "N" for No
  - Indicate if a visual assessment was performed by writing "Y" for Yes or "N" for No
    - Visual Assessment form (QP-064) identification number (e.g., Visual WO#: MSGP-xxxx) if applicable
    - Date and time the visual assessment was performed if applicable
  - Printed name of person collecting the sample
  - Date and time the sample was RETRIEVED
5. Ensure the sample container type and chemical preservation type is correct for the analysis requested on the SCL (e.g., 500 ML POLY, HNO3). Note any deviation from the planned sample container volume or type on the SCL.
6. Indicate if each sample on the SCL was collected by writing Y for Yes or N for No under "Collected Y/N".

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7. Determine which samples require filtration and chemical preservation as requested on the SCL. Refer to Sections 4.2 and 4.3 as needed. Requirements are also identified in the most current revision of the MSGP Sampling and Analysis Plan.
8. Mark on each container lid the 3-digit outfall ID, required analysis, filtration requirement, and preservative requirement."
9. Document any other deviations from "As Planned" conditions in the "As Collected" column on the SCL (e.g., change the Field Matrix code from rain (WT) to snowmelt (WM)).

## **4.2 Filtering Samples**

Filter samples if specified on the SCL or if an in-line filter was not used during sample collection.

1. Don nitrile gloves and safety glasses with side shields. Long pants are required and no open toed shoes are allowed. Prior to filtering samples, confirm eyewash is operational.
2. Ensure the sample container volume and container type (e.g., 1 L GLASS) is correct for the analysis requested on the SCL. Note any deviation from the planned sample container volume or type on the SCL.
3. Select the appropriate sized cartridge filter (e.g., 0.10µm or 0.45µm).
4. Attach an appropriate amount of silicone tubing to both ends of the cartridge filter. Place the filter upstream of the peristaltic pump to prevent over-pressurization. If the sample contains a significant amount of sediment, a pre-filter of the same size or larger micron capacity may be used.
5. For split samples(filtered and unfiltered), turn the sample collection bottle upside down multiple times to ensure all sediment is loose from the bottom of the bottle and move the intake tube up and down through the sample during filtration. A sample collected solely for filtration can be filtered without being homogenized by shaking.
6. Replace the filter if flow diminishes, the pump begins to make a grinding sound, or the tubing is forced off the filter by back pressure.
7. Add a check mark next to the filtered requirement previously marked on the lid to indicate that filtration has been completed.
8. Clean and dry the exterior of sample container and check sample container for leakage and breakage.
9. If no further processing is required (e.g., chemical preservation), apply a chain-of-custody seal/tape around the bottle and lid and sign and date the seal/tape.
10. Remove filter and tubing when filtration of one sample set (location) has been completed. A new filter must be used with each new sample ID.

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### 4.3 Preserving Unfiltered and Filtered Samples

Preservation entails the addition of acid or base to a sample. Acids used include hydrochloric acid (HCl), nitric acid (HNO<sub>3</sub>), and sulfuric acid (H<sub>2</sub>SO<sub>4</sub>). Bases used in preservation include sodium hydroxide (NaOH).

#### CAUTION

The preservatives are strong acids and bases that can cause severe burns. Extreme care should be taken when using these acids and bases. **Review the appropriate Material Safety Data Sheet or Safety Data Sheet for specific guidelines prior to preserving samples.**

1. Don nitrile gloves, safety glasses with side shields, and a lab coat. Long pants are required and no open toed shoes are allowed. Prior to chemically preserving samples, confirm eyewash is operational.
2. Ensure the sample container volume, type, and preservation type is correct for the analysis requested on the SCL or Sampling and Analysis Plan (e.g., 500 ML POLY, HNO<sub>3</sub>). Note any deviation from the planned sample container volume or type on the SCL.
3. Select the pre-measured preservative size that matches the sample container size.  
**Note:** If you only have one size pre-measured preservative that does not match the sample container size you may need to use more than one. For example, if you have a 1 liter sample container and 500 ml pre-measured preservative vial, you would need to add two preservative vials to the sample container.  
  
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) as error in measurement precision may lead to a risk of violating Department of Transportation shipping requirements.
4. Add the preservative (acid or base) to the sample and securely affix the lid to the container.
5. Agitate the preserved sample by turning the container upside down two to three times.
6. Add a check mark next to the preservation type previously marked on the lid to indicate that preservation has been completed.
7. Clean and dry the exterior of sample container and check sample container for leakage and breakage.
8. Apply a chain-of-custody seal/tape around the bottle and lid and sign and date the seal/tape.

### 4.4 Handling Excess Stormwater

All efforts will be made to minimize the amount of stormwater sample brought into the TA-59-1 Stormwater Lab. Field personnel will attempt to retrieve only the volumes needed to fulfill the requested analyses from the current MSGP Sampling and Analysis Plan.

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If any excess stormwater sample exists after processing has been completed:

- Ensure the container is labeled with the site of origin, date and time sample was collected, and "Return to Site".
- Place the container in the designated storage location in the MSGP Stormwater Lab,
- Return the sample to the site of origin as soon as possible and discharge at the sampler location.

If the excess stormwater has been altered (e.g. tap water or preservative added) contact the Waste Management Coordinator for TA-59-1 for further instruction.

#### **4.5 Submit Samples for Shipping to Offsite Analytical Laboratory**

1. Deliver completed SCL(s) to the MSGP Data Manager.
2. The MSGP Data Manager will process the sample information in the EIM system, capturing any documented deviations from planned conditions (as noted on the SCLs), and generate Chain of Custody/Analysis Request (COC) form(s) and sample container labels to reflect the "as collected" samples (see examples in Attachments 2 and 3).
3. In the "Received By" section of the SCL, enter the COC number (e.g., 2017-XXXX).
4. Don nitrile gloves and safety glasses.
5. Ensure the sample containers are securely sealed and wiped dry.
6. Cross check that the Sample ID on the SCL matches the Field Sample ID on the COC.
7. Carefully compare the information from the SCL and lid of each container to apply the correct labels to the sample containers.
8. Place the sample(s) in the cooler with sufficient Blue Ice® (or equivalent) to maintain the required preservation temperature ( $\leq 4^{\circ}\text{C}$ ). Cushioning material (e.g., bubble wrap) may be used to separate containers to avoid breakage during transport.
9. Place the SCL(s) and COC(s) in a zip lock type bag, seal, and place in the cooler with samples.
10. Transport samples to the Sample Management Office (SMO) using a government vehicle or approved subcontractor vehicle only. Samples may be delivered during SMO business hours, but must be delivered by 2pm for same day shipping. Coordinate with the SMO for delivery during other times or for delivery of samples that have limited holding times.  
  
**Note:** If submitting samples to the SMO will be delayed, place sample containers with SCL(s) in the Stormwater Laboratory refrigerator and ensure the refrigerator is locked.
11. On the COC, the person submitting the sample(s) will print and sign their name, date, and record the time under "Relinquished By." The SMO personnel accepts the sample(s) by printing and signing their name, dating, and recording the time under "Received By."
12. Retain a copy of the signed Chain of Custody/Analysis Request.

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13. On the SCL, the person submitting the sample(s) will enter the data and time under "Relinquished By" that matches the data and time "Relinquished by" on the COC and write the COC/Lab Request# (e.g., 2017-xxxx) under "Received by."
14. Ensure the SMO makes a copy of the SCL(s) to accompany the COC and samples. Retain the original SCL(s) for the MSGP program.
15. Deliver the copy of the signed COC and original SCL(s) to the MSGP Data Manager.

## **5.0 TRAINING**

The training method for this procedure is "self-study" (reading). The following personnel require training before implementing this procedure:

- EPC-CP technical staff and subcontract or other personnel who process stormwater samples for the MSGP.

Personnel performing this procedure will be familiar with the most current versions of the following procedures and operation manuals:

- EPC-CP MSGP Sampling and Analysis Plan for the current monitoring year
- EPC-CP-QP-047 Inspecting Stormwater Runoff Samplers and Retrieving Samples for the MSGP

## **6.0 RECORDS**

Records generated by this document will be submitted to the ADESH Records Management designated point of contact or document manager in accordance with P1020-1, *Laboratory Records Management* and with ADESH-AP-006, *Records Management Plan*. Below is a list of records generated as a result of implementing this procedure.

- Sample Collection Log/Field Chain of Custody Form
- Copy of the Chain of Custody/Analysis Request
- Copy of log book entry(s) (if a log book is used)
- Other pertinent field or lab notes

## **7.0 DEFINITIONS AND ACRONYMS**

### **7.1 Definitions**

See LANL *Definition of Terms*.



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## 7.2 Acronyms

See LANL *Acronym Master List*.

40 CFR	Title 40 of the Code of Federal Regulations
COC	Chain of Custody/Analysis Request
EIM	Environmental Information Management
EPC-CP	Environmental Protection and Compliance – Compliance Programs
IWD	Integrated Work Document
LANL	Los Alamos National Laboratory
LANS	Los Alamos National Security, LLC
MSGP	Multi-Sector General Permit
NPDES	National Pollutant Discharge Elimination System
SCL	Sample Collection Log/Field Chain of Custody
SMO	Sample Management Office

## 8.0 REFERENCES

None

## 9.0 ATTACHMENTS

**Attachment 1:** Sample Collection Log/Field Chain of Custody Example

**Attachment 2:** Sample Container Labels Example

**Attachment 3:** Chain of Custody/Analysis Request Example

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# ATTACHMENT 1: SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY EXAMPLE

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Los Alamos National Laboratory

## MSGP Quarter 3

### SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11198

EVENT NAME: MSGP 2017

SAMPLE ID: MSGP-17-131989

WORK ORDER: MSGP-59823

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):		<u>4/01/17</u>	FIELD MATRIX:	WT	
TIME COLLECTED (HH:MM):		<u>16:03</u>	MEDIA:		
PRS ID:		<u>1</u>	SAMPLE TECH CODE:	APS	
LOCATION ID:	MSGP05301		FIELD PREP:	UF	
LOCATION TYPE:			FIELD QC TYPE:	REG	
TOP DEPTH:			SAMPLE USAGE:	COMP	
BOTTOM DEPTH:			EXCAVATED:		YES / NO / <u>NA</u>

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
	MSGP-CN(TOTAL)	500 ML POLY	1	NAOH	<u>Y</u>	
	MSGP-COD+NH3	500 ML POLY	1	H2SO4 ICE	<u>Y</u>	
	MSGP-Mg+Se+Hg	500 ML POLY	1	HNO3 ICE	<u>Y</u>	

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

pH 6.7 Flow (Evidence) Y Visual Inspection Y SU Visual WO# MSGP-58866 Visual performed Date/Time 4/3/17 14:36

COLLECTED BY (PRINT): Jane Doe Retrieved 4/3/17 14:36

RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time
		<u>See COC</u> <u>2017-1326</u>	<u>4/12/17</u> <u>15:10</u>
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 07/21/2017

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## ATTACHMENT 2: SAMPLE CONTAINER LABELS EXAMPLE

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Los Alamos National Laboratory	
Sample ID: MSGP-17-131786	
Container: 500 ML POLY	1 of 1
Preservative: HNO3 ICE	
Analysis: NPDES-AI-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-AI-Total Recoverable	
Date: 04/01/2017	Time: 16:03

[illegible]

**Attachment 20: ENV-CP-QP-007 SPILL INVESTIGATION**

**ENV-CP-QP-007**

Revision: 10



Effective Date: 09/30/15

Next Review Date: 09/30/18

**Environment, Safety, Health Directorate****Environmental Protection – Compliance Programs****Quality Procedure****Spill Investigations****Reviewers:**

Name: Brian M. Iacona	Organization: ENV-CP	Signature: Signature on File	Date: 08/13/15
Name: Jacob W. Meadows	Organization: ENV-CP	Signature: Signature on File	Date: 08/28/15

**Derivative Classifier:** ☒ **Unclassified** ☐ **DUSA** **ENVPRO**

Name: Gian A. Bacigalupa	Organization: ENV-CP	Signature: Signature on File	Date: 08/31/15
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**Approval Signatures:**

Subject Matter Expert: Jacob W. Meadows	Organization: ENV-CP, Program Lead	Signature: Signature on File	Date: 08/31/15
Responsible Line Manager: Michael T. Saladen	Organization: ENV-CP, Team Leader	Signature: Signature on File	Date: 08/31/15
Responsible Line Manager: Anthony R. Grieggs	Organization: ENV-CP, Group Leader	Signature: Signature on File	Date: 09/30/15

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To document a required read, Login to [UTrain](#), and go to the Advanced Search.*

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#### History of Revisions

<b>Document Number</b> <i>[Include revision number, beginning with Revision 0]</i>	<b>Effective Date</b> <i>[Document Control Coordinator inserts effective date]</i>	<b>Description of Changes</b> <i>[List specific changes made since the previous revision]</i>
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.

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## 1.0 PURPOSE

This Environmental Protection Division – Compliance Programs Group (ENV-CP) procedure describes processes and implements requirements for spill investigations.

## 2.0 SCOPE

This procedure applies to all ENV-CP staff and personnel conducting spill investigations.

### 2.1 HAZARD REVIEW

The work described in this procedure is field work and has a **LOW hazard** rating as documented by submittal of a completed [ENV Low Hazard Verification form](#).

## 3.0 RESPONSIBILITIES

The following personnel require training before implementing this procedure:

- ENV-CP staff and contract personnel who perform spill response and investigation.

Annual re-training to this procedure is required. Specific training requirements will be updated as needed.

The training method for this procedure is required reading and on-the-job training (OJT). The OJT is to be conducted by a Team Leader or person designated as Subject Matter Expert (SME) by the ENV-CP Group Leader. This training will be documented in accordance with [ENV-DO-QP-115, Personnel Training](#).

Actions specified within this procedure, unless proceeded with “should” or “may,” are to be considered mandatory (i.e., “shall”, “will”, “must”).

### 3.1 PREREQUISITES

None

## 4.0 WORK PROCESSES

Responsibility is to assure the immediate mitigation and timely notification of appropriate regulatory organizations in the event of a spill or unplanned discharge that has or may affect the environment. Work requires frequent and unscheduled site visits to any area of the Laboratory during a spill or unplanned release as support staff for the on-scene Security and Emergency Operations (SEO) Incident Commander.

Specific activities associated with Spill Response and Investigation:

- Respond to the spill or unplanned release site;
- Report to the On-Scene SEO Incident Commander and Site Safety Officer;
- Receive site safety requirements;
- Provide decision support;
- Investigate the nature and extent of the spill or unplanned release;

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- Evaluate the potential environmental impact to water quality;
- Report the occurrence to the regulatory agencies, if necessary; and
- Provide support to mitigation plan and implementation.

#### **4.1 FIELD ACTIVITY**

If the spill or unplanned discharge is determined to be a non-emergency event by SEO response, such as a release of potable water, perform the following steps:

<b>Step</b>	<b>Action</b>
1	Perform a site visit in coordination with the Facility Operations Director designee.
2	Assess potential environmental damage.
3	Provide mitigation measures and requirements.
4	Document the event.
5	Notify regulatory agencies and DOE, if necessary.
6	Facilitate collection of samples, if necessary.

For emergency response, perform the following steps:

<b>Step</b>	<b>Action</b>
1	Report to on-scene commander and await instructions.
2	Perform a site visit in coordination with SEO.
3	Adhere to access requirements as developed by the SEO Site Safety Officer and Incident Commander.
4	Identify and document the source and cause of the release.
5	Provide notification and written report if necessary.
6	Facilitate collection of samples if necessary and safe to do so.

If sample collection is required, contact the following sampling personnel:

- ENV-CP
  - NPDES outfall
  - Sanitary treatment solids
- WM-SVS
  - Wastes and chemical spills (liquid, solid, hazardous)
- ADEP Environmental Remediation Division
  - Surface water
  - Storm water runoff
  - Groundwater
  - Sediments

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If WM-SVS will collect the required sample, 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.

## **4.2 COMMUNICATION**

Take a cellular phone that will transmit from the location to be visited. Also take a contact pager to receive messages.

If cellular service is unavailable, use a portable radio set to the appropriate radio frequency.

If in a secure area where cell phone use is prohibited, use the radio. Be sure to have radio checked and authorized for use within secure areas or within the boundaries of the WFO FOD or WX Division. Government-owned cellular phones, with batteries removed, may be brought into the secure area but used only if approval is given by the SEO Incident Commander or FOD or designee. Rules of use for Smartphones and other mobile devices (BlackBerry, iPhones, iPads) can be found on the Computing Communications webpage for mobile devices, <http://int.lanl.gov/computing/communications/mobile/index.shtml>.

Radio or cellular contact must be established with a designated contact prior to leaving ENV-CP and upon arrival/departure at the site in accordance with [ENV-DO-QP-100, General Field Safety](#).

The Incident Commander can make special communication exceptions.

All photography at LANL must adhere to [P217, Controlled Articles](#).

Wastes generated from activities described in the procedure will be properly characterized, managed, and disposed in accordance with [P409, LANL Waste Management](#), [P930-1, LANL Waste Acceptance Criteria](#), and [P403, Environmental Risk Identification and Management](#).

## **4.3 FACILITY MANAGEMENT WORK CONTROL REQUIREMENTS FOR FIELD ACTIVITIES**

Most field activities performed by the ENV-CP spill response personnel are impacted by facility management work control requirements. Requirements vary between the respective Facility Operations Divisions (FODs) and therefore necessitate ENV-CP response personnel to acquire FOD approval for site access in advance of starting work activities. The exception to this is in response to emergency situations as support to SEO staff.

Should work be required to stop/pause, reference [P101-18, Procedure for Pause/Stop Work](#), for guidance.

## **4.4 FACILITY MANAGEMENT-SPECIFIC ACCESS REQUIREMENTS**

### **4.4.1 HIGH EXPLOSIVES AREAS**

TA-16 and TA-11 high explosives areas have specific access requirements. Access inside the security gate requires annual site-specific training. Curricula #5243 must be assigned and all the training courses completed before arriving at TA-16. For access, (normal or after hours) contact the WFO FOD to ensure entry requirements are met and the activity is authorized for the Plan of the Day.

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For access to WFO perimeter gates during normal working hours or after hours, contact TA-15 Access Control at 667-6742 and request permission to enter. A perimeter gate key must be picked up at the TA-15 Access Control office. Note that all outdoor firing will be suspended during entry.

For perimeter gates, prior notification for after-hours entry is also required by SOC. Perform the following steps:

<b>Step</b>	<b>Action</b>
1	Call SOC Los Alamos at 667-4437.
2	Identify yourself to the on duty officer or attendant.
3	Provide the following information: Group, color and make of vehicle (s), which perimeter gate you are entering, and approximate time of arrival and finally, length of stay.

Failure to notify security personnel in advance could result in a security violation against the visiting Team Member.

Provide notification to SOC Los Alamos at 667-4437 when leaving area.

For access to WX areas required during normal or after working hours, perform the following steps:

- Ensure the required security clearance (Q clearance) is held, and
- Contact the FOD or designee for entry requirements.

#### **4.4.2 CHEMISTRY METALLURGY RESEARCH FACILITY ACCESS**

For access to the Chemistry Metallurgy Research Facility, perform the following:

- Must have the required L or Q clearance to pass the security gate.
- If access into any of the buildings is necessary, contact CMR Operations Management or the FOD for an escort.
- If responding to an emergency with SEO, ENV-CP staff will be considered part of the SEO response team, met at the access gate, and escorted to the spill site.

#### **4.4.3 TA-3-66 SIGMA FACILITY ACCESS**

For access to the Sigma facility (TA-3-66), perform the following:

- For non-emergency responses, obtain prior site-specific training and authorization or contact the FOD for personnel escort and contact the FOD Deployed Environmental Professional.
- For emergency response with SEO, ENV-CP staff will be considered part of the SEO response team, met at the access gate, and escorted to the spill site. Contact the FOD to ensure they are aware of the incident.

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#### 4.5 REGULATORY SPILL REPORTING

If a spill is determined to be a threat to the environment or human health, regulatory and DOE notification may be necessary. Contacts and telephone numbers can be found on Attachment 1, ENV-CP Release Notification Phone List.

If a spill impacts a Solid Waste Management Unit (SWMU) or Area of Concern (AOC), contact ENV-CP and Environmental Remediation (ER) for possible additional notification requirements.

If ENV Division or designated SME personnel determine after a site inspection or verbal notification that a spill is non-reportable to DOE or applicable regulatory agencies, a LANL ENV-CP Unplanned Release Report must be completed (Attachment 2) and submitted to the ENV-CP SME for required documentation.

For ENV Division designated on-call personnel, follow guidance for spill reporting as described in [ENV-DO-QP-101, \*Environmental Reporting Requirements for Releases or Events\*](#).

**NOTE:** On-call representatives are required to follow up in writing (email is sufficient) with the spills program lead regarding all releases during their on-call schedule. If no spills are reported in off-work hours, please confirm in writing with the spills program lead at the end of your on-call schedule.

For additional information concerning spill and unplanned discharge determination and notification requirements, contact the ENV-CP Water Quality Permitting and Compliance Team Leader.

#### 5.0 DOCUMENT CONTROL/RECORDS MANAGEMENT

The following records generated as a result of this procedure are to be submitted in accordance with [ADESH-AP-006 Records Management Plan](#).

- Field notebook documentation of the release including:
  - Time and date of the release
  - Time and date of ENV-CP notification
  - Location of the release
  - Source of the release(equipment, etc,)
  - Type of material released
  - Quantity of material released
  - If an impact to a watercourse or Potential Release Site occurred
  - Time release was stopped
  - Any immediate mitigating actions implemented to contain or control the release
- Any written report and verbal notification list generated should the release be deemed reportable.
- LANL ENV-CP Unplanned Release Report (Attachment 2) for non-reportable releases.

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## 6.0 DEFINITIONS

AOC: Area of Concern

ER: Environmental Remediation

Field Work: Performance of Laboratory related activities in areas that are removed or isolated from an established populated base of operation (that is, where emergency support and medical assistance is not readily available.)

FOD: Facility Operations Division

NPDES: National Pollutant Discharge Elimination System

OJT: On the job training

PRS: Potential Release Site

SEO: Security and Emergency Operations

SOC Los Alamos: Security contractor for Los Alamos National Laboratory

SWMU: Solid Waste Management Unit

## 7.0 REFERENCES

None

## 8.0 ATTACHMENTS

Attachment 1- ENV-CP Release Notification Phone List

Attachment 2- LANL ENV-CP Unplanned Release Report

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## **ATTACHMENT 1- ENV-CP RELEASE NOTIFICATION PHONE LIST**

Los Alamos National Laboratory

ENV-CP

Release notification phone list

**August 2015**

### **Los Alamos National Laboratory**

- |  |          |
|--|----------|
| (1) Security and Emergency Operations<br>Emergency Management (SEO-EM) | 667-6211 |
| (2) ENV-ES Group Office  | 665-8855 |
| (3) ENV-CP Group Office  | 667-0666 |
| (4) ENV-DO   | 667-2211 |
| (5) LANL Central Alarm Station (SOC-LA)                                | 667-7080 |
| L.A. Fire Department   | 667-4055 |

### **New Mexico Environment Department**

See Web address below

- |  |                 |
|--|-----------------|
| (1) NMED Emergency Hotline (24 hours a day)            | 827-9329        |
| (2) NMED Non-Emergency Hotline (During business hours) | 476-6000        |
| NMED Non-Emergency Hotline (Voicemail; 24 hours a day) | 1(866) 428-6535 |
| (3) NMED Surface Water Quality Bureau                  | 827-0187        |
| Erin Trujillo  | 827-0418        |
| (4) NMED Ground Water Quality Bureau                   | 827-2900        |
| Greg Huey  | 827-6891        |
| Steven Huddleson                                       | 827-2936        |
| Gerald Knutson   | 827-2996        |
| (5) NMED Hazardous Waste Bureau                        | 476-6000        |
| Ruth Horowitz  | 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) Gladys Gooden-Jackson                                   | 1(214) 655-7494 |

### **U.S. Department of Energy**

- |                 |          |
|-----------------|----------|
| (1) Gene Turner | 667-5794 |
|-----------------|----------|

### **State Emergency Response Commission (SERC) Notification**

- |   |  |
|---|--|
| New Mexico State Police   | (505) 827-9300 (During business hours) |
| (Immediate Notification)  | (505) 827-3476 (24 hours a day)        |
| New Mexico Department of Homeland Security and Emergency<br>Management (Follow-up Notification) | (505) 476-9600                         |

### **National Response Center**

- |   |                |
|---|----------------|
| U.S. Coast Guard National Response Center | 1-800-424-8802 |
| See NRC web address below for report form |                |

<b>Spill Investigations</b>	ENV-CP-QP-007	Page 11 of 12
	Revision: 10	Effective Date: 09/30/15

**New Mexico State Police**

New Mexico State Police

(505)827-9300 (During business hours)

(505) 827-3476 (24 hours a day)

**Local Emergency Planning Committee (LEPC) LAPD**

Philmont Taylor

(505) 663-3511

**On Call Environmental Contact for Releases**  
**Group Representatives for Notifications to External Agencies**

Name	Group	Work Phone	Pager	Cellular Phone	Email address
Jake Meadows	ENV-CP	606-0185	664-1333	231-0460	jmeadows@lanl.gov
Mike Saladen	ENV-CP	665-6085		699-1284	saladen@lanl.gov
Mark Haagenstad	ENV-CP	665-2014		699-1733	mph@lanl.gov
Tim Zimmerly	ENV-CP	664-0105	664-1237	699-7621	tzimmer@lanl.gov
Terrill Lemke	ENV-CP	665-2397		699-0725	tlemke@lanl.gov

Web addresses:

NMED home page <http://www.nmenv.state.nm.us>

National Response Center home page <http://www.nrc.uscg.mil/Default.aspx>

Reportable Quantities web page <http://homer.ornl.gov/rq/>



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## ATTACHMENT 2- LANL ENV-CP UNPLANNED RELEASE REPORT

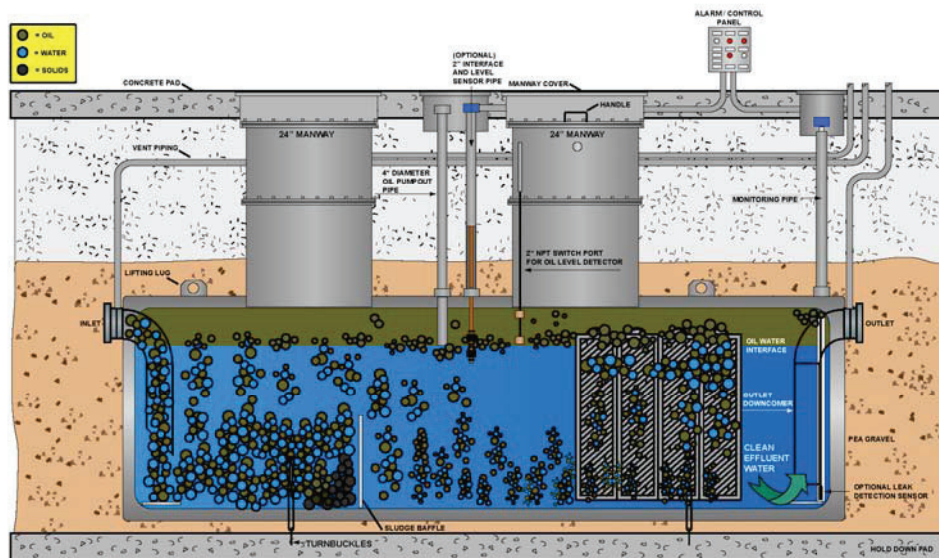
### Los Alamos National Laboratory Environmental Compliance Programs (ENV-CP) Unplanned Release Report

<b>Form Completed By:</b>		<b>Telephone:</b>		<b>Group:</b>	
<b>Spill Details</b>		Spill Owner (Specify): <input type="checkbox"/> LANS, LLC <input type="checkbox"/> Subcontractor:			
Date of Spill/Date Spill Discovered:					
Location:					
<b>Material Spilled:</b>		<input type="checkbox"/> Anti-freeze/coolant <input type="checkbox"/> Steam Condensate <input type="checkbox"/> Lubricants/oils <input type="checkbox"/> Refrigerant Oil		<input type="checkbox"/> Gasoline <input type="checkbox"/> Other: _____	
<input type="checkbox"/> Hydraulic Fluid <input type="checkbox"/> Potable Water <input type="checkbox"/> Diesel					
<b>Volume Spilled:</b>		<b>Waste Volume Generated:</b>			
<b>Source of Spill:</b> Vehicle ID: _____ Equipment ID: _____		<input type="checkbox"/> Hydraulic Line <input type="checkbox"/> Potable Water Line <input type="checkbox"/> Fire Suppression System <input type="checkbox"/> Fuel Tank		<input type="checkbox"/> Radiator <input type="checkbox"/> Condensate Line <input type="checkbox"/> 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: _____					
<b>Did the spill enter or impact any of the following? (Check as many as apply)</b> <input type="checkbox"/> RCRA Treatment Storage Disposal Facility <input type="checkbox"/> RCRA Satellite Accumulation Area <input type="checkbox"/> RCRA <90 Day Storage Area		<input type="checkbox"/> Floor Drain, if so please indicate affected facility _____ <input type="checkbox"/> Watercourse/drainage area, if so please indicate _____ <input type="checkbox"/> Solid Waste Management Unit/Area of Concern, if so please indicate _____ <input type="checkbox"/> None			
<b>Did the spill occur inside or outside a building?</b>		<input type="checkbox"/> Inside <input type="checkbox"/> Outside			
<b>Did the spill occur on:</b> (Check as many as apply)		<input type="checkbox"/> Concrete <input type="checkbox"/> Asphalt <input type="checkbox"/> Carpeted Floor <input type="checkbox"/> Graveled/Rocky Area <input type="checkbox"/> Tile <input type="checkbox"/> Soil/Vegetated Area <input type="checkbox"/> Wooden floor/deck <input type="checkbox"/> Other: _____			
<b>Samples Collected:</b> <input type="checkbox"/> None <input type="checkbox"/> Water		<input type="checkbox"/> Soil <input type="checkbox"/> Air <input type="checkbox"/> Other: _____		If samples were collected, indicate analytical suite:	
<b>Certification</b>					
I certify that I am knowledgeable about the information on this form. The information, to my knowledge, is true, accurate, and complete.					
<b>Name of Certifying Official:</b>		<b>Organization:</b>		<b>Date:</b>	
<b>Certification:</b>					
<b>Completed by ENV-CP Personnel</b>					
<b>Date Received:</b>		<b>Severity Index:</b>		<b>Causal Analysis:</b>	
				<input type="checkbox"/> Non-Reportable <input type="checkbox"/> Reportable	

**Attachment 21: SITE SPECIFIC PROCEDURES AND DOCUMENTS**



**TA60-01 Heavy Equipment Shop  
Oil/Water Separator (TA60-313)  
Operations and Maintenance Manual**



ECOLOGIX HQB BELOW GROUND OIL/WATER SEPARATOR

**333IFCS FOD  
October 30, 2009**

	<b>TA60-01 Heavy Equipment Shop Oil Water Separator Operations &amp; Maintenance Manual</b>	Rev: 0 Oct 30, 2009
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## Approvals

Name	Organization	Date	Signature
<b>Project Engineer:</b>	_____	_____	_____
<b>Engineering Manager:</b>	_____	_____	_____
<b>Operations Manager:</b>	_____	_____	_____

## Classification

<b><u>Review &amp; Classification</u></b>			
_____ (Reviewed By)	_____ (Z#)	_____ (Review Date)	_____ (Classification)

## Revisions

	<p><i>TA60-01 Heavy Equipment Shop Oil Water Separator Operations &amp; Maintenance Manual</i></p>	<p>Rev: 0 Oct 30, 2009</p>
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**SECTION 1 –Operations & Maintenance Information**

**SECTION 2 – Manufacturers Procedures, Specifications, & Drawings**

**SECTION 3 – Project Specifications**

**SECTION 4 – As Constructed Drawings**

	<p><i>TA60-01 Heavy Equipment Shop Oil Water Separator Operations &amp; Maintenance Manual</i></p>	<p>Rev: 0 Oct 30, 2009</p>
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	<i>TA60-01 Heavy Equipment Shop Oil Water Separator Operations &amp; Maintenance Manual</i>	Rev: 0 Oct 30, 2009
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# **SECTION 1**

## **LANL GENERAL INFORMATION**

### **AND**

## **OPERATIONS AND MAINTENANCE PROCEDURES**

	<p><i>TA60-01 Heavy Equipment Shop Oil Water Separator Operations &amp; Maintenance Manual</i></p>	<p>Rev: 0 Oct 30, 2009</p>
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	<p align="center"><b>TA60-01 Heavy Equipment Shop Oil Water Separator Operations &amp; Maintenance Manual</b></p>	<p>Rev: 0 Oct 30, 2009</p>
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## SECTION 1.0 OIL/WATER SEPARATOR SYSTEM – GENERAL

### 1.0 PURPOSE:

The Oil/Water Separator (OWS) is designed to collect and treat wash water and storm water contaminated with heavy oil (asphalt & grease), light oil (motor oil), or other contaminants such as VOCs or sand and gravel. The OWS separates these contaminants from the influent water by a gravity flotation/separation system. The OWS discharges clean effluent to a manhole (TA60-48) on the LANL Sanitary Wastewater collection system.

### 2.0 SUPPORTED/SUPPORTING SYSTEMS

- 2.1. Supported Systems – The Oil/Water Separator (OWS) collects wash water and run-on rain water from the heavy equipment wash pad located at TA60-01, The Heavy Equipment Repair shop. Other than for the installed instrumentation systems, the OWS is a totally passive device which works solely through gravity flow of the influent liquid. No pumps or valves are required to receive, treat, or discharge the influent or effluent.
- 2.2. Supporting Systems -- 110v AC electrical power is supplied to the OWS instrumentation panels located in the Heavy Equipment Shop. **Only 24v AC** power is routed to the instrumentation probes in the OWS itself. The OWS discharges clean waste water to the LANL Sanitary Wastewater Collection System. This waste water is treated at the LANL Sanitary Wastewater Treatment Facility.

### 3.0 MAJOR SYSTEMS AND COMPONENTS

#### 3.1. Envirologix HQB Oil Water Separator

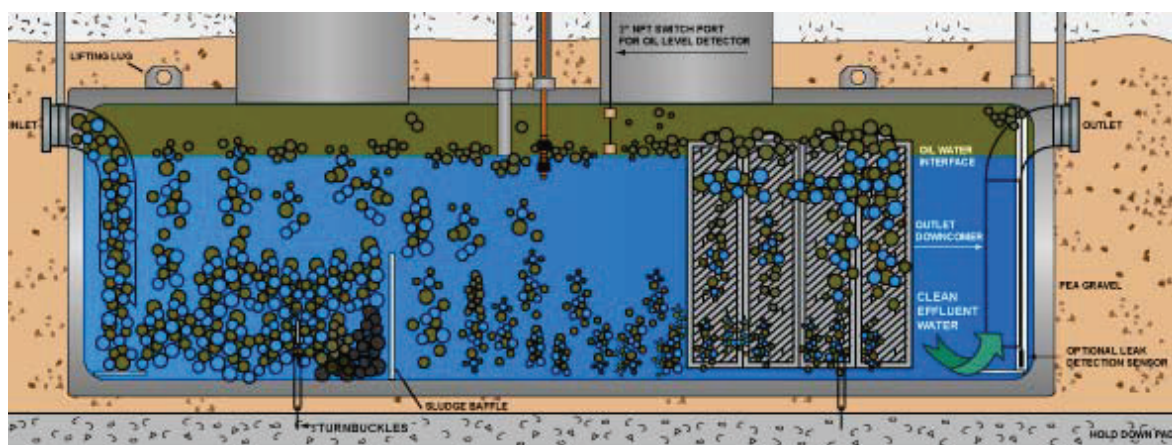


Figure 1. Envirologix HQB2064 Oil/Water Separator

The Envirologix Oil/Water Separator (OWS) is a self contained underground tank type system which is designed to separate both heavy oils (asphalt & grease) and light oils (motor oil) from wash water and stormwater runoff. The OWS will also separate sand and gravel from the influent. The total volume of the tank is 2000 gallons (7.67 M<sup>3</sup>). Maximum reject oil storage capacity recommended by the Manufacturer is 40% of the total capacity or 800 gallons (3.0 M<sup>3</sup>).

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The OWS functions very much like a standard sanitary septic tank system with which many of us are familiar. The easy way to understand operation of the OWS is to think of the entire system as an inverted siphon or “P trap.” (See Figure 1) Contaminated water enters the inlet end of the tank through the inlet half of the inverted siphon or “downcomer”. Heavy materials in the influent are prevented from flowing further through the tank by the sludge baffle depicted in the drawing.

The influent water and lighter contaminants flow over the baffle and the light contaminants float to the surface of the fluid and coalesce as the contents flow through the tank. Plastic oil coalescing plates are provided to facilitate this process. As new influent enters the tank, clean effluent is forced out of the tank through the effluent downcomer.

It is interesting to note that the OWS tank is always full. The tank is “pre-charged” with clean water upon commissioning or after pumping. The tank fills to the level of the outlet invert (bottom of pipe) and maintains this level throughout the operating “cycle”. The only way a higher level of fluid can be experienced in the tank is in the event of a blockage of the effluent pipe.

As waste oil flows into the tank and is collected, the interface surface between the oil and the water moves down, however the top surface of the two fluids never varies. The oil level probe described below is therefore designed to measure the height of the interface between the fluids.

The tank must be pumped on a regular basis to remove accumulated sludge and light oil from the tank. This service is typically provided by a commercial waste oil collection service.

Detailed manufacturers drawings and literature are provided in Section 2. Project specifications are provided in Section 3, and installation drawings are provided in Section 4.

### 3.2. Sitrans/ Automated Logic Level Sensor system

A flow sensor is installed on the outlet of the tank to measure the amount of water being discharged to the Sanitary Wastewater System. The flow sensor transmits an ultrasonic signal that bounces off the surface of water and returns to the transducer located within the sensor. The sensor in turn transmits a 4-20 milliamp signal to the Automatic Logic signal processor. The level of the signal is proportional to the flow in the outlet pipe.

The Automated Logic signal processor is calibrated to read flow in gallons per minute (gpm). The instrumentation package allows real time reading of the flow meter signal, as well as the capability to totalize flow over several different time periods. This information can be accessed from any personal computer with a web browser operating on the LANL Yellow net.



Figure 3—Sitrans  
Ultrasonic  
Level Sensor

### 3.3. Aggressive Systems Level Probe and Alarm System.

The OWS is provided with a level sensor and remote alarm system to detect two different fluid levels in the tank. The level sensor is a brass rod inserted vertically in the tank and is equipped with two plastic floats located at pre-specified locations.

The A1 float(Alarm 1-System Alarm) has a specific gravity of 0.60 and will float on top of the oil layer in the tank. The A2 (Alarm 2-High Oil) float has a specific gravity of 0.93. Since it is heavier than oil but lighter than water, it will float on the surface layer between the oil and the water in the tank.

Float A1, the upper float, is set to activate at a level 5 inches below the top of the tank. If the liquid level reaches this limit, the float will activate Alarm 1 at the remote panel. This level is 6" above the outlet invert of the tank and indicates a "blocked flow" condition in which normal effluent flow from the tank is blocked

Float A2 is set to activate at a level 33 inches below the top of the tank. If the oil reaches this level the float will activate Alarm 2 at the remote panel. This alarm indicates the OWS has reached its recommend maximum storage capacity for oil. Oil quantity in the tank when this alarm activates is approximately 814 gallons or 40% of the total tank capacity.

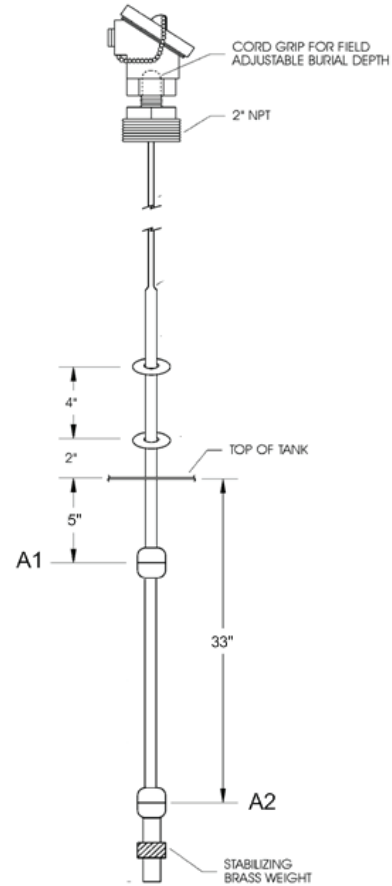


Figure 3—Level Probe

When either float senses an alarm condition the appropriate warning light will be illuminated on the remote panel located in the southeast corner of the heavy equipment shop. Either alarm will also cause an audible alarm (horn) to sound. The audible alarm may be muted by pushing the silence button. Pushing the silence button will not reset the alarm condition or extinguish the light. The warning lights may only be extinguished by correcting the alarm condition. See 4.2 below for appropriate alarm response actions.

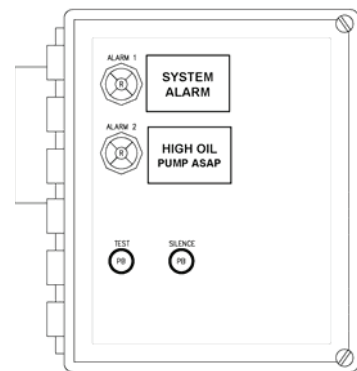


Figure 4—Alarm Panel

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## 4.0 OPERATIONAL BASIS AND PROCEDURES

### 4.1. Normal Operations

Since the OWS is a passive gravity flow system no special “Operating” Procedures are necessary. The OWS is ready to receive wash water from the heavy equipment wash rack under all normal conditions. Care should be taken however to prevent excessive amounts of sand, grit, or gravel from entering the inlet catch basin.

### 4.2. Inspections

At time of installation, it is unknown how quickly the OWS will collect oil and sludge. Estimates to reach the 800 gallon light oil limit vary from 1 to 5 years. Accordingly, during the first one year of service, the access ports to the OWS should be removed and the interior should be visually inspected every six months. Thereafter, the OWS should be inspected at least annually. A wooden dipstick may be used to determine the approximate amount of sludge behind the sludge baffles and the approximate amount of light oil in the top of the tank. Alternately, a marked line tied to a small plastic bottle  $\frac{3}{4}$  full of water may be used to measure the level of the water/oil interface in the tank. Pumping of the tank on an annual basis will most likely be required. A longer pumping interval may be established based upon operational experience.

### 4.3. Response to alarms

- 4.3.1 Alarm 1-- “System Alarm”. This alarm indicates a blocked flow condition in the effluent or outlet pipe. Discontinue use of the wash rack until the blocked flow condition is cleared. See 5.2 below for outlet line cleanout procedures
- 4.3.2 Alarm 2--“High Oil Alarm”. This alarm indicates that the OWS has reached its recommended oil storage limit of 800 gallons. Have the oil and sludge pumped from the OWS within two weeks of the activation of the “High Oil Alarm”. The wash rack may continue to be used in the event of this alarm since the OWS can store up to an additional 800 gallons of oil without the risk of an oil release or spill.

## 5.0 MAINTAINANCE PROCEDURES

- 5.1. Collection system: The trench drain inlet should be cleaned of sludge and sediment on a twice yearly basis to prevent excess sediment from entering the OWS. If standing water is observed in the trench drain, the inlet pipe to the OWS should be checked for blockage and cleaned if necessary. The 6” ductile iron inlet line can be cleaned with standard sanitary sewer jetting or rodding equipment. Contact the LANL Utilities section to schedule cleaning of the inlet line.
- 5.2. Effluent (Outlet) line. If the 6” ductile iron outlet line becomes blocked, the line can be cleaned with standard sanitary sewer jetting or rodding equipment from either of the two cleanout access points provided. Contact the LANL Utilities section to schedule cleaning of the outlet line
- 5.3. Removal (pumping) of collected light oil and sludge and sediment.  
Pumping Procedure:
  - 1. Obtain approval for confined space entry. Comply with any entry requirements
  - 2. Remove the cover plate and inner lid on the west access manway
  - 3. Remove the light oil suction line cover plate just east of the east manway
  - 4. Using the waste oil vacuum truck suction line, pump all light oil off the top of the fluid in the tank until relatively clear water is obtained

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5. Using the waste oil vacuum truck suction line, suction all heavy oil and sludge from the behind the sludge baffle at the bottom of the tank.
6. Using a 2" fire hose and the nearby fire hydrant east of TA60-01, refill the OWS with water until the flow is observed in the outlet line at the first cleanout
7. Replace the light oil suction line cover plate
8. Replace the inner lid and cover plate on west access manway

#### 5.4. Removal and Cleaning of the HD Q-PAC Oil Coalescing Plates

1. Obtain approval for confined space entry. Comply with any entry requirements
2. Remove the cover plate and inner lid on the east access manway
3.
  - a To clean the plates in place, connect a conventional 5/8" or 3/4" water hose to the hosebid located at the \_\_\_\_\_ wall of TA60-01. Using a garden hose high pressure nozzle wash the the spaces between the plate rack from the top. Suction all debris from the bottom of the tank after cleaning
  - b The plates may also be cleaned outside of the OWS by removing the plates through the east manway using \_\_\_\_\_ hook tool. The plates can be placed on the wash pad and washed with a 5/8" or 3/4" hose with a conventional garden hose high pressure nozzle. Once all sludge is removed from the plates, they can be returned to the OWS. Suction all debris from the bottom of the trench inlet after cleaning
4. Using a 2" fire hose and the nearby fire hydrant east of TA60-01, refill the OWS with water until the flow is observed in the outlet line at the first cleanout
5. Replace the cover plate on the east access manway.

#### 5.5. Maintenance and Calibration of instrumentation.

1. The Aggressive systems alarm panel should be tested once per month by actuating the Test button and observing proper illumination of both alarm lights and actuation of the warning horn.
2. Alarm System floats. The Aggressive Systems level probe should be removed on a biennial basis, and the floats should be actuated manually in order to test continuity of the alarm system wiring.
3. The Sitrans/Automated Logic flow metering system should be calibrated on a biennial basis. This calibration can be conducted by Process and Automation technicians or the instrumentation shop.

##### 5.5.1.1. Calibration procedure:

## 6.0 RESPONSIBILITIES

Maintenance of the OWS will be the responsibility of \_\_\_\_ Heavy Equipment shop personnel. It is recommended that the shop manager appoint a designated technician to be responsible for monitoring of the tank and scheduling of maintenance and servicing.



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## **7.0 GENERAL PRECAUTIONS, LIMITATIONS AND SAFETY HAZARDS**

- 7.1. Confined space—The OWS is designated as a Permit Only Confined space. Prior permission from ESH Personnel is required to enter either of the tank man ways or the tank itself to service the oil coalescing plates.
- 7.2. Spills when pumping—Appropriate precautions against surface spills are to be taken when pumping waste oil or sludge. These precautions are described in the pumping procedures outline above.
- 7.3. Overflow—Since inflow into the tank is gravity flow only, there is no way for the tank itself to overflow from the manholes or other connections. The system can only “overflow” in the event of a blocked outlet line. If the installed high level alarm fails to detect a blocked flow condition, the first indication of an overflow would be standing water in the trench drain. See 5.2 above for correction of this condition.

## **8.0 REFERENCES**

- 8.1. xx
- 8.2. yy
- 8.3. zz

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## SECTION 2

# MANUFACTURERS PROCEDURES, SPECIFICATIONS AND DRAWINGS

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## ECOLOGIX GENERAL DESCRIPTION



**ECOLOGIX**  
ENVIRONMENTAL  
SYSTEMS

**Air & Water Treatment Solutions**  
(888) 326-2020 / (678) 514-2100

**Online Store**

- bag filters
- activated carbon
- specialty chemicals
- air filtration
- ozone generators & more!

[Distributors and Reps Wanted! \(click here\)](#)    Home | Online Store | Forms | Contact Us | About Us | Site Map | Search Site

**Applications**

- Automotive
- Biodiesel
- Car Wash Industry
- Dairy Industry
- Food Processing Industry
- Iron Removal
- Latex Removal
- Metals Treatment
- Mining Industry
- Odor Control
- Petrochemical Industry
- Poultry Industry

**Products**

- Activated Carbon
- Air Treatment Systems
- Bag Filtration
- Biological Treatment
- Chemicals (Specialty)
- Clarifiers
- Dissolved Air Flotation
- Dewatering
- Dust Collection
- Evaporators
- Filter Screens
- Membrane Filtration
- Microbial Bacteria
- Oil/Water Separators**
  - Above Ground Separators
  - Below Ground Separators
  - Sludge Oil Removal System
  - Liquid Phase Vessels
- Ozone
- Polymer Blenders
- Pressure Filtration
- Separators/Strainers
- Tanks
- Wet Scrubbers

### Oil Water Separators > Below Ground Oil Water Separators

Oil water separators are systems used as an efficient method to separate oils and some solids from a variety of wastewater discharges. They are typically installed in industrial and maintenance areas and receive oily wastewater. Our line of above ground oil water separators will assist in the removal of large quantities of free oil from your wastewater before any further treatment step you may have in your process. We have below ground oil water separators with flow rates ranging from 20 to 2000 gallons per minute and capacities up to over 20,000 gallons.


**Related product links**

[AFD-55](#) | [AFP-55 Series](#) | [BORS](#) | [Above Ground Separator \(ECOS\)](#) | [HD Q-PAC](#) | [Inclined Plate Clarifiers](#) | [Hopper/Separator](#) | [OilFree Polymeric Filtering](#)

**Features**

- Low maintenance cost
- Easily cleaned through the removable vapor tight cover(s)
- No moving parts or consumables
- No power consumption
- No chemicals, absorbent or filter cartridges to remove, replace or dispose of
- Service & maintenance of coalescing media and removal of sludge from outside
- No confined spaces
- Shallow burial depth

[HQB Series Diagram.PDF](#) | [HQB Ballast & Pad Specs](#) | [HQB Series - How They Work](#)



**Technical Features**

- HQB's Oil/Water Separators are versatile and can be used in many different applications.
- Plasteel Elutron Jacketed Oil Water Separators are in a unique double wall jacketed construction with 360 degree interstitial monitoring.
- Primary tank of welded steel construction in accordance with UL 58.
- Secondary containment is constructed of FRP laminate that does not become brittle or soft below or above ground and has been successfully tested to UL 1746 requirements for corrosion protection.
- Cathodic protection and/or dielectric isolation not required.
- The Unipack cross fluted plates are manufactured of PVC, CPVC, PP, SS, or FRP.
- Sizes available up to GPM.

**Dimensional Parameters for Ecologix Below Ground Oil Water Separators**

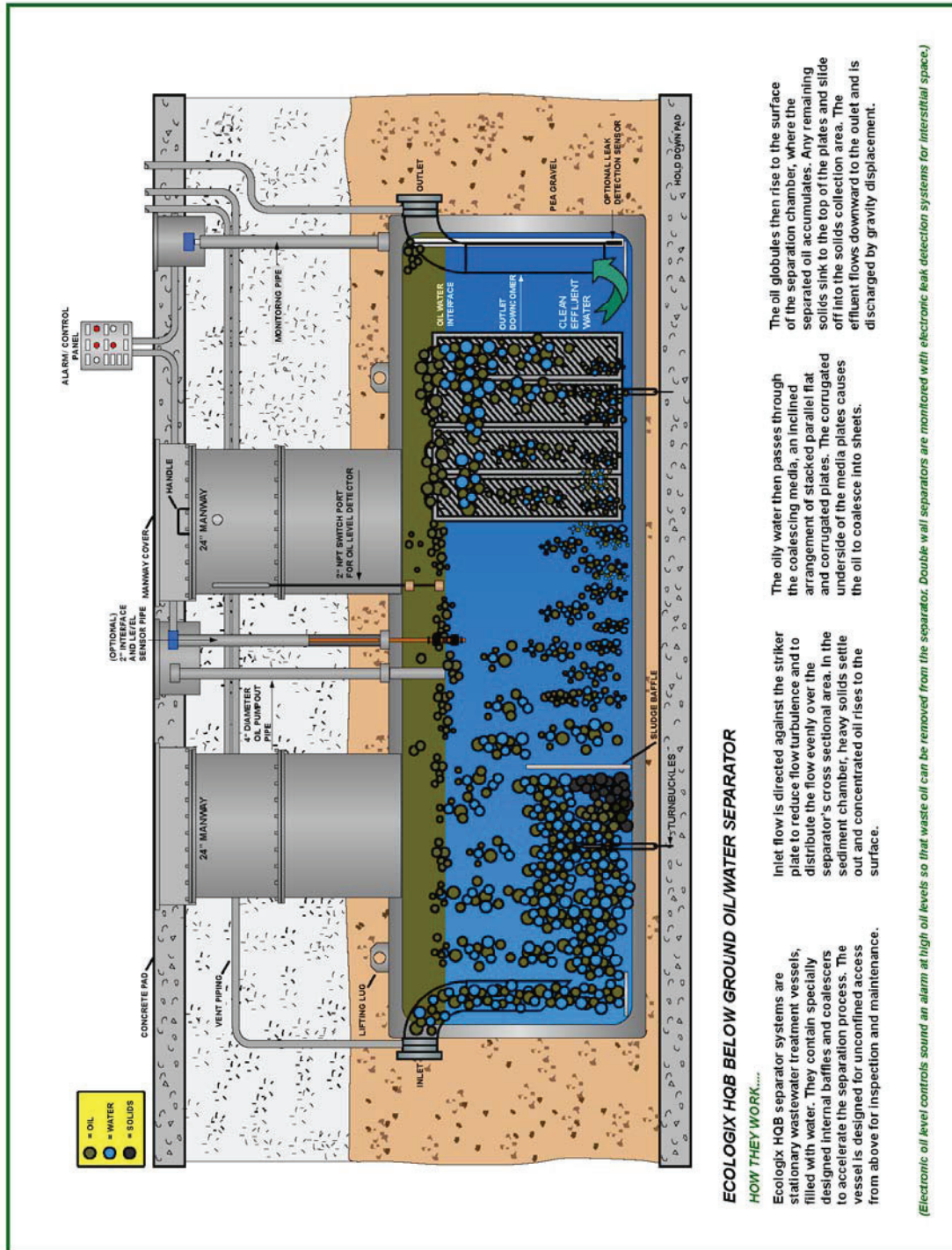
MODEL	DIA.	LENGTH	INLET	OUTLET	FLOW RATE	TANK CAPACITY (GAL.)	OIL SPILL CAPACITY (GAL.)
HQB342	3' - 9"	4' - 5"	4"	4"	20	400	320
HQB548	4' - 0"	6' - 3"	4"	4"	50	600	480
HQB1048	4' - 0"	10' - 9"	6"	6"	100	1000	800
HQB2064	5' - 4"	12' - 0"	6"	6"	200	2000	1600
HQB3064	5' - 4"	18' - 0"	8"	8"	300	3000	2400
HQB4072	5' - 4"	24' - 0"	8"	8"	400	4000	3200
HQB5072	6' - 0"	23' - 10"	8"	8"	500	5000	4000
HQB6072	6' - 0"	28' - 8"	10"	10"	600	6000	4800
HQB7084	7' - 0"	24' - 4"	10"	10"	700	7000	5600
HQB8084	7' - 0"	28' - 0"	10"	10"	800	8000	6400
HQB9096	8' - 0"	24' - 0"	12"	12"	900	9000	7200
HQB10096	8' - 0"	26' - 8"	12"	12"	1000	10,000	8000
HQB12096	8' - 0"	32' - 0"	12"	12"	1200	12,000	9600
HQB15121	10' - 0"	25' - 6"	14"	14"	1500	15,000	12,000
HQB21120	10' - 0"	34' - 0"	18"	18"	2000	20,000	16,000

**Operation**

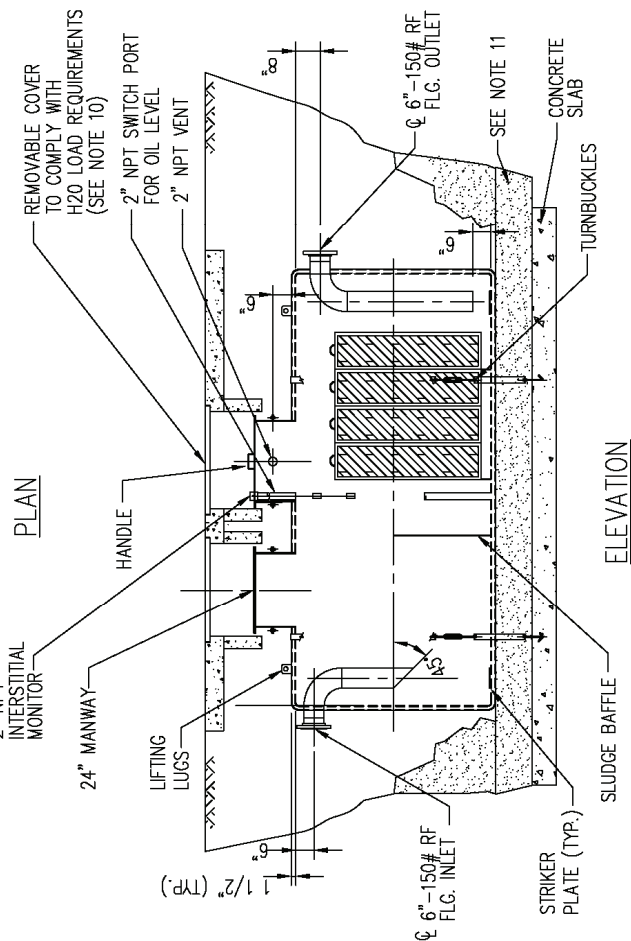
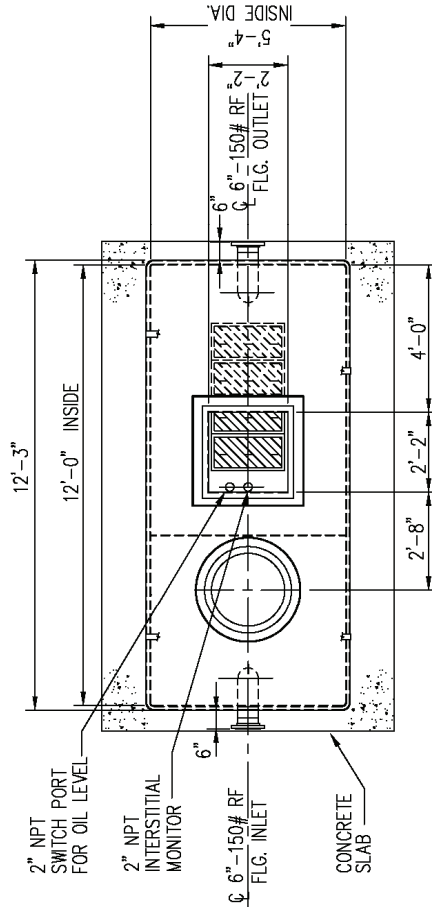
The separator is a special purpose prefabricated parallel corrugated plate gravity displacement type oil/water separator designed to remove free and dispersed non-emulsified oil and sellable solids. In accordance with API 421. The separator capacities, dimensions, and construction will be in strict accordance with UL 58, and UL 1746. Separator shall be comprised of a tank containing:

**Inlet Compartment**

The inlet chamber will be comprised of a non-clog diffuser pipe to distribute the flow across the width of the separator chamber. The inlet compartment shall be of sufficient volume to effectively reduce influent suspended solids, dissipate energy and begin separation. A sludge baffle will be provided to prevent settleable solids and sediment from entering the separation chamber.



- NOTES:**
1. SINGLE WALL IN ACCORDANCE WITH UL 58 STANDARDS.
  2. EXTERIOR: FRP 100 MILS PER UL 1746
  3. INTERIOR: CARBOLINE 300 MIL COALTAR EPOXY.
  4. VENT SIZING PER UL 58. ALL VENT PIPING IS BY OTHERS.
  5. ALL EXTERIOR PIPING IS BY OTHERS. ECOLOGIX RECOMMENDS A MINIMUM SLOPE OF 1/16" PER FOOT FOR ALL GRAVITY PIPING
  6. PRODUCT STORAGE CAPACITY IS 10% OF THE TOTAL TANK VOLUME.
  7. INSTALL OIL/WATER SEPARATOR PER FURNISHED INSTRUCTIONS.
  8. THIRTY (30) YEAR WARRANTY PROVIDED ON EXTERIOR CORROSION PROTECTION.
  9. 1/8" THICK NEOPRENE 50 DMS GASKETS AT ALL CONNECTIONS
  10. REMOVABLE COVERS TO MEET H-20 LOAD REQUIREMENTS IS AS REQUIRED AND CAN BE SUPPLIED W/OPTION.
  11. CLEAN INERT SAND, PEA GRAVEL OR CRUSHED STONE



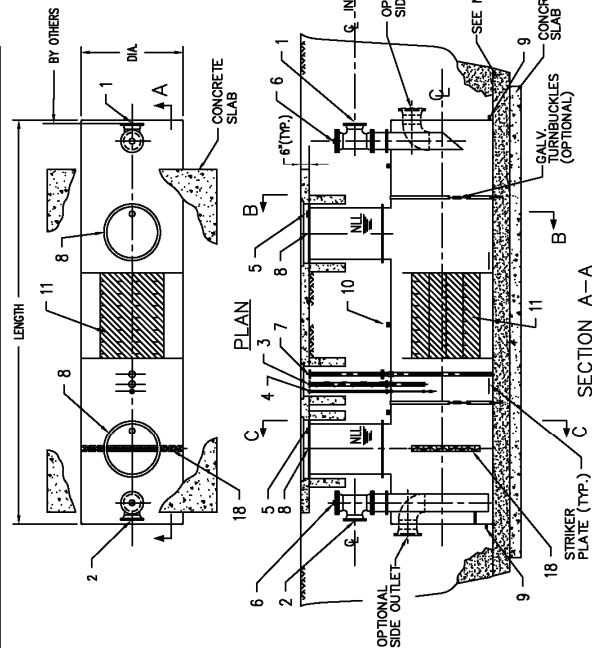
REV.	DESCRIPTION	DATE	INIT.
<b>ECOLOGIX</b> Environmental Systems, LLC <b>MODEL HQB2064</b> <b>OIL/WATER SEPARATOR</b>			
PROJECT:	DRN. BY: PMD	DATE: 7/21/05	REV. A
REF:	CHKD BY:	SCALE: 1/4" = 1'	
	FILE: HQB2064.DWG		



ITEM	QTY.	STANDARD EQUIPMENT
1	1	INFLUENT PORT W/ISOLATION SPOOL PIECE
2	1	EFFLUENT PORT W/ISOLATION SPOOL PIECE
3	1	OIL PUMP/OUT PORT
4	1	LEVEL SENSOR PORT
5	1	SAMPLING / GLUAGING PORT
6	2	VENT
7	1	LEAK MONITOR
8	1	ACCESS MANWAY
9	A/R	SACRIFICIAL ANODE (STI-P3 ONLY)
10	A/R	LIFTING LUGS
11	A/R	COALESCING MEDIA
12	A/R	HOLD DOWN STRAPS
OPTIONAL EQUIPMENT		
14	1	INTERNAL LADDER
15	A/R	LEVEL CONTROL-NEMA ENCLOSURE
16	A/R	LEAK DETECTION SYSTEM
17	A/R	AUTOMATIC OIL PUMP/OUT SYSTEM
18	A/R	POLISHING MEDIA
19	1	OIL STOP VALVE
20	A/R	ADDITIONAL MANWAY RISER HEIGHT
CUSTOMER SUPPLIED EQUIPMENT		
21	A/R	INFLUENT & EFFLUENT PIPING
22	A/R	VENT PIPING
23	A/R	ALL OTHER EXTERNAL PIPING
24	A/R	CONCRETE BALLAST PAD OR DEADMAN
25	A/R	CONCRETE HOUSEKEEPING PAD
26	A/R	ANCHOR BOLTS

- NOTES:**
- OIL/WATER SEPARATOR TANK IS SINGLE/DOUBLE WALL STEEL TYPE 1. CONSTRUCTED IN ACCORDANCE WITH UL 58 STANDARDS.
  - EXTERIOR-CORROSION PROTECTION PER STI P2 OR FRP.
  - INTERIOR-CORROSION PROTECTION PER CARBOLINE 300M.
  - VENT SIZING PER UL 58. ALL VENT PIPING IS BY OTHERS.
  - ALL EXTERIOR PIPING IS BY OTHERS. ECOLOGIX RECOMMENDS A MINIMUM SLOPE OF 1/16" PER FOOT FOR ALL GRAVITY PIPING.
  - TANK ANCHORING CONSISTS OF ( ) HOLD DOWN STRAP 3 EQUALLY SPACED ALONG THE TANK.
  - THE NORMAL LIQUID LEVEL IN THE TANK IS SET BY THE EFFLUENT PIPING. IN GENERAL THE LIQUID WILL COMPLETELY FILL THE TANK INTO THE MANWAY AS SHOWN.
  - ALL CONCRETE WORK IS BY OTHER. THE DESIGN AND INSTALLATION OF THE CONCRETE SLAB OR DEADMEN IS THE RESPONSIBILITY OF THE INSTALLER.
  - PRODUCT STORAGE CAPACITY IS 50% OF THE TOTAL TANK VOLUME.
  - CONTROL PANEL, INSTRUMENTATION, PROBES AND ELECTRICAL CONDUIT OR JUNCTION BOXES NOT SHOWN.
  - INSTALL OIL/WATER SEPARATOR PER FURNISHED INSTRUCTIONS.
  - THIRTY (30) YEAR WARRANTY PROVIDED ON EXTERIOR CORROSION PROTECTION.
  - CLEAN INERT SAND, PEA GRAVEL OR CRUSHED STONE PAD BY OTHERS.

MODEL	DIA.	LENGTH	INLET	OUTLET	FLOW RATE	TANK CAPACITY (GAL.)	OIL SPILL CAPACITY (GAL.)
HQB3342	3'-9"	4'-5"	4"	4"	20-40	400	320
HQB548	4'-0"	6'-3"	4"	4"	50-100	600	480
HQB1048	4'-0"	10'-9"	6"	6"	100-200	1000	800
HQB2064	5'-4"	12'-0"	6"	6"	200-400	2000	1600
HQB3064	5'-4"	18'-0"	8"	8"	300-600	3000	2400
HQB4064	5'-4"	24'-0"	8"	8"	400-800	4000	3200
HQB5072	6'-0"	23'-10"	8"	8"	500-1000	5000	4000
HQB6072	6'-0"	28'-8"	10"	10"	600-1200	6000	4800
HQB7084	7'-0"	24'-4"	10"	10"	700-1400	7000	5600
HQB8084	7'-0"	28'-0"	10"	10"	800-1600	8000	6400
HQB9096	8'-0"	26'-8"	12"	12"	900-1800	9000	7200
HQB1096	8'-0"	32'-0"	12"	12"	1000-2000	10000	8000
HQB1296	8'-0"	37'-0"	14"	14"	1200-2400	12000	9600
HQB15120	10'-0"	34'-0"	14"	14"	1500-3000	15000	12000
HQB21120	10'-0"	34'-0"	18"	18"	2000-4000	20000	16000



DESCRIPTION
Ecologix Environmental Systems, LLC 5100 Old Ellis Point, Roswell, GA 30076 (678) 514-2100 / (888) 326-2020 www.EcologixSystems.com
STANDARD CROSS-FLOW OIL/WATER SEPARATOR GENERAL ARRANGEMENT BELOW GROUND
DATE REV. 11/15/06
DRAWN BY: R.J.M.

## ECOLOGIX INSTALLATION AND OPERATIONS MANUAL

### **Ecologix Environmental Systems, LLC**

5100 Old Ellis Point, Suite 200

Roswell, GA 30075

Toll Free: 888-326-2020 Tel: 678.514.2100 Fax: 678.514.2106

Email: [info@ecologixsystems.com](mailto:info@ecologixsystems.com) Web Site: [www.ecologixsystems.com](http://www.ecologixsystems.com)



## **OIL WATER SEPARATOR OPERATION AND MAINTENANCE MANUAL**

### **HQB2064**

Ecologix Environmental Systems, LLC [www.ecologixsystems.com](http://www.ecologixsystems.com)  
Phone 678-514-2100 · Fax 678-514-2106

## **LIMITED WARRANTY**

Ecologix equipment is warranted as to workmanship, material and performance when properly installed, used, and cared for, and provided that the original design criteria represent actual field data at the time of operation. Should any parts or parts prove defective within twenty-four (24) months from the date of purchase, it will be replaced F.O.B. destination without charge, provided the part (or parts) is returned transportation charges prepaid.

No allowance will be made for labor, transportation, or other charges incurred in the replacement or repair of defective parts by the customer. This warranty does not apply when damage is caused by conditions such as sand or abrasive materials pumped with the fluids, lightning, improper voltage supply, careless handling, improper installation, stray electrical interference, or due to substances or factors that were unknown to Ecologix at the time of purchase. Buyer shall have no claim, and no product or part shall be deemed defective, by reason of failure to resist erosive or corrosive action, nor for problems resulting from buildup of material within the equipment.

This warranty applies only to seller's equipment, under use and service in accordance with the seller's written instructions, recommendations and ratings for installation, operating and maintenance, and service. All claims for defective products, parts, or work under this warranty must be made in writing immediately upon discovery and, in any event, within one year of purchase.

This warranty is a *Limited Warranty*, anything in the warranty notwithstanding. Implied warranties for particular purpose and merchantability shall be limited to the duration of express warranty. The manufacturer expressly disclaims and excludes any liability of consequential or incidental damages for breach of any express or implied warranty.

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## **1.0) INTRODUCTION**

Ecologix Environmental Systems, LLC (Ecologix) Oil Water Separator (OWS) Model **HQB2064** will remove essentially all free and dispersed, non-emulsified oil, and settleable solids from the oil water mixture at a flow rate of 150 GPM at a temperature of 55° F. The design utilizes the difference in specific gravity between oil and water (buoyancy force) enhanced by the use of 24 cubic feet of HD Q-PAC coalescing plates. The separator is designed to receive oily water by gravity/pumped flow that will not mechanically emulsify the oil and will process it on a once through basis. The oil water separator will be a direct buried unit in accordance with the requirements of UL 58 and designed to withstand earth load, live load and hydraulic pressure. The separator will be a single wall unit with exterior corrosion protection. The tank comes with a 30 year limited warranty on exterior corrosion protection. The HD Q-PAC coalescing plates are manufactured of UV Resistant Polypropylene material.

## **2.0 SYSTEM DESCRIPTION AND REQUIREMENTS**

**2.1 FABRICATION:** The oil water separator is a special purpose prefabricated parallel-corrugated plate, cylindrical, gravity displacement, single wall unit. The separator capacities, dimensions and construction, shall be in strict accordance with UL 58, and UL 1746. The separator shall be comprised of a tank containing an inlet compartment, separation chamber, sludge chamber, oil storage compartment and clean water outlet chamber.

**2.2 TANK:** The tank shall be constructed of 10 gauge minimum thick carbon steel plate conforming to ASTM A36. Welding will be in accordance with AWS D1.1 to provide a watertight tank that will not warp or deform under load. Pipe connections to the exterior shall be as follows:

**2.2.1 PIPE CONNECTIONS:** All connections 3" and smaller are FNPT couplings. All connections 4" and larger are flat face flanges with ANSI 150 pound standard bolt circle. Use flanged piping connections that conform to ANSI B16.5.

**2.3 SEPARATOR CORROSION PROTECTION:** (For Carbon Steel Only) after shop hydrostatic test has been successfully completed, a coating system will be applied to the interior and exterior surfaces of the separator. Interior and exterior shall be sandblasted to SSPC-SP10 & SSPC-SP6; Interior lined with Tnemec Series 61 liner to 9 mils MDFT; Exterior coated with FRP Elutron to 100 mils MDFT.

**2.4 MANWAYS:** Manways will provide access into the separator to service the coalescer and sludge removal from grade level. The manways will be provided complete with extension, clamp down cover and gasket.

**2.5 LIFTING LUGS:** The tank shall be provided with properly sized lifting lugs for handling and installation.

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**2.6 INLET COMPARTMENT:** The inlet chamber shall be comprised of a non-clog diffuser to distribute the flow across the width of the separation chamber. The inlet compartment shall be of sufficient volume to effectively reduce influent suspended solids, dissipate energy and begin separation. The media will sit elevated on top of a sludge baffle. The sludge baffle will be provided to retain settleable solids and sediment from entering the separation chamber.

**2.7 SEPARATION CHAMBER:** The oil separation chamber shall contain HD Q-PAC Coalescing Media containing a minimum of 132 square feet per cubic foot of effective coalescing surface area. The medias needle like elements (plates) shall be at 90 degrees to the horizontal or longitudinal axis of the separator. Spacing between these elements shall be spaced 3/16" apart for the removal of a minimum of 99.9% of free droplets 20 micron in size or greater. The elements are positioned to create an angle of repose of 90 degrees to facilitate the removal of solids that may tend to build up on the coalescing surfaces, which would increase velocities to the point of discharging an unacceptable effluent. Laminar flow with a Reynolds Number of less than 500 at a maximum designed flow rate shall be maintained throughout the separator packed bed including entrance and exit so as to prevent re-entrainment of oils with water. Flow through the polypropylene coalescing media shall be crossflow perpendicular to the vertical media elements such that all 132 square feet/cubic foot of coalescing media is available for contact with the coalescing surfaces. None of the coalescing media surfaces shall be pointing upward so as not to be available for contact with the crossflowing oily water. The media shall have a minimum of 87% void volume to facilitate sludge and dirt particles as they fall off the vertical elements and settle in the sludge compartment. The media when installed in crossflow OWS shall meet US EPA Method 413.2 and also European Standard 858-1.

**2.8 SLUDGE CHAMBER:** The sludge chamber shall be located prior to the coalescing compartment for the settling of any solids. It shall also prevent any solids from entering the clean water chamber.

**2.9 OIL STORAGE:** The waste oil storage shall be an integral part of the separator, and have a capacity of 30 percent of the total separator volume. Oil will be stored on the surface of the water and can be pumped away when oil/water interface reaches a predetermined depth.

**2.10 CLEAN WATER CHAMBER:** The tank will be provided with a clean water chamber which allows the water to leave the separator by gravity flow through the clean water outlet port.

**2.11 VENTS AND HOLD DOWN STRAPS:** (If required) sufficient vents and hold down straps will be provided.

### **3.0 SAFETY AND ENVIRONMENTAL CONSIDERATIONS**

3.1 All normal safety precautions should be taken with this equipment to prevent accidents and fires.

3.2 Normal fire prevention measures must be taken to prevent fire danger from separated oil.

3.3 Care should be taken to keep the area around the separator clean to prevent accidents.

3.4 Disposal of the separated oil and solids, which may contain hazardous material, must comply with the regulations of the authority having jurisdiction.

3.5 Safety and environmental protection are the responsibility of the user. ECOLOGIX assumes no liability for misuse of this separator or for use outside the purpose for which it is designed.

### **4.0 INSPECTION AND OFFLOADING**

4.1 **INSPECTION:** Inspect the oil water separator upon delivery for any damage, which may have occurred in shipment. Areas most susceptible to damage are connections and cover openings. If the separator is damaged, ECOLOGIX should be notified immediately. The off loading personnel should note the extent of damage and sign and date the bill of lading. A claim should be filed with the delivering carrier.

4.2 **OFF LOADING:** The separator must be carefully removed from the truck so the unit is not damaged. Components for the separator are often supplied in a separate carton. Proper rigging practices should be observed at all times. Hoisting equipment operators should attach a guide line to prevent the separator from swinging out of control. Do not drop the separator or allow it to fall hard in the process of inverting, turning, or moving. Do not slide the separator.

4.3 **COATINGS:** All damaged coatings should be touched up immediately ! Please contact the factory if more specific information is required. Under no conditions should chains or cables be put around the separator. Use spreader bars, and the lifting eyes on the unit.

4.4 **STORAGE:** If the equipment is not to be installed at the time of delivery, it should be stored in an area away from traffic. The ground should be level and free sharp objects that might damage the coatings. All equipment should be stored off the ground on timbers. All factory packing should remain intact until the unit is ready for installation. Equipment should be stored indoors. If not, care should be taken that tanks do not fill up with water and debris. Covering all of the equipment with a tarp is strongly recommended.

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## **5.0 SYSTEM INSTALLATION**

When placing the separator for system operation, be sure it is installed in a concrete foundation, which provides adequate support under full load operating conditions. Even if a mounting skid is used, a concrete pad or other properly designed structure must be installed as a foundation. The length and width of this pad are dependent upon the footprint of the unit. Thickness of the concrete pad depends on local soil and frost conditions. A local qualified civil engineer should be contacted to determine these dimensions.

*5.1 FOR EQUIPMENT BURIED IN GROUND ON CONCRETE SLAB FOLLOW  
INSTALLATION INSTRUCTIONS PROVIDED BY THE STEEL TANK INSTITUTE  
FOR UNDERGROUND TANKS ON THE FOLLOWING PAGES.*



5.1.1 A concrete slab must be installed around the equipment if the separator is going to be subject to traffic loads. It should be designed to carry the load and transmit the load into adjacent, undisturbed soil, not onto the tank side walls!

5.1.2 If a concrete pad is not installed and the equipment is subject to traffic loads, deformation or in some cases total collapse of the equipment may occur. ECOLOGIX cannot be held responsible for equipment subjected to such loads!

## 5.2 LEVELING

5.2.1 At this point the equipment should be set exactly in place and the anchor bolts should be installed.

5.2.2 Remove any lids.

5.2.3 The tankage should now be made as level as possible. The absolute minimum requirements being, within +/- 1/16" per foot from inlet to outlet end of tank and +/- 1/16" per foot from side to side, maximum of +/- 1/4" total. Shim the tank, if necessary, until these parameters are met. We recommend the use of stainless steel shim stock. When installing shims, make sure to locate them under all vertical tank supports.

**NOTE:** We cannot stress enough the leveling process. It is better to invest a little time at this point than to try to correct an improperly leveled tank later. A level installation functions better, has a better appearance and will give you fewer problems in the future.

The next step toward system start involves the plumbing and electrical connections. Any valves and/or piping should be adequately supported and accepted piping and valve practices must be followed for proper system operation. Any pump or level probe wiring and conduit connections should be made at this time. If the unit includes internal level detection, insert the level detection level indicated on the drawing.

## 5.3 PLUMBING

5.3.1 When making connections to the equipment do not use the equipment as a pipe support. All plumbing should stand on its own if disconnected from equipment. ECOLOGIX cannot be held responsible for damage caused by using this equipment to support your plumbing.

5.3.2 Connections do not have to be made in the order listed below. Review your situation and make the connections in the most convenient order for your particular application.

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5.3.3 Connect the outlet plumbing. The effluent plumbing must be the same size or larger than the nozzle size of the equipment. Do not reduce the size of the effluent piping as this might cause hydraulic overloading of the equipment. Also, try to run the discharge piping through as few changes as possible, as short a distance as possible and at a pitch of not less than 1/16" per foot. On gravity flow units it may be necessary to vent exterior piping to prevent air locks in discharge pipe.

5.3.4 Connect the inlet plumbing. The influent must be the same size or smaller than the nozzle size on the equipment. Do not increase the size of the influent piping as this might cause hydraulic overloading of the equipment. Also, the pitch of the pipe should not exceed 1/16" per foot.

5.3.5 On most units, vents will have been provided. These vents have been supplied to prevent air locks during surge conditions. For both indoor and outdoor applications the vents should be run to a location where noxious and sometimes volatile gas would pose no hazard. Follow all applicable fire codes with regards to size of vent pipe.

**Warning: Do not plug or otherwise obstruct air flow through the vents. Obstructing air flow through the vents could damage the unit and/or create a hazardous condition.**

## **6.0 SEPARATOR SET UP AND START UP PROCEDURES**

### **6.1 SEPARATOR SET UP PROCEDURES:**

The inlet flow to the separator must be by gravity or a positive displacement pump upstream. Centrifugal pumps greatly agitate the oil and water and tend to make a stable emulsion that is very difficult, if not impossible, to separate by gravity settling.

Separator flow should be controlled upstream to ensure even, steady flow, and stable conditions in the separator. Unstable flows tend to reduce efficiency and may cause high oil concentration at the outlet.

6.1.1 The separator tank is atmospheric in design and must be vented to the atmosphere. Consult the OWS drawing for location of all vents.

6.1.2 To achieve the desired flow, excessive throttling of the input must be avoided as this will also cause emulsification of the oil, adversely affecting separator performance. Especially avoid the use of globe type or other valves with high-pressure drops.

6.1.3 It is recommended that the effluent water flows by gravity flow from the separator. The pressure loss for the water effluent pipe shall not exceed the drop elevation of the customer lines. External piping should be separately supported. The separator is not designed to support piping.

6.1.4 To install the separator, follow these steps:  
(Please refer to attached installation drawing)

1. Ensure that the source of the water to be treated is properly regulated and not provided with a centrifugal pump or other device, which will cause emulsification such as a high-pressure drop valve.
2. Ensure that the separator is securely installed per installation drawing.

## 6.2 SEPARATOR START-UP PROCEDURES:

### 6.2.1 Initial start-up.

This procedure is to be followed after the installation of the separator or after the separator has been drained for maintenance and is ready to be restarted.

6.2.1.1 Ensure that the owner supplied upstream influent flow regulating valve is closed.

6.2.1.2 Before starting the flow to the unit, remove the coalescer access cover and ensure that the HD Q-PAC packs have not shifted and are securely fastened. The separator should contain plate packs, polishing pack and adjustable oil skimmer pipe tube. (Slot of skimmer to be turned upward away from water)

6.2.1.3 Ensure that there are not obstructions in the water outlet piping.

6.2.1.4 With the coalescer access cover off, fill the tank with clean water, establishing flow from the effluent opening. Check for leaks.

6.2.1.5 Allow the influent oil water mixture into the OWS tank.

6.2.1.6 Replace the coalescer access cover and bolt down liquid tight.

### 6.2.2 Normal operation:

Carefully maintain flow at the rate set when flow was established. Once a sufficient quantity of oil has accumulated in the separator, turn the slot of the skimmer into the oil layer (The oil will then be decanted into an integral oil



storage compartment or to a separate tank outside of the separator). Disposal of the oil must comply with regulations of the authority having jurisdiction.

## **7.0 QUALITY ASSURANCE**

**7.1 INSPECTION:** Examine each component of the separator for compliance with requirements indicated in Section 2 - System Description & Requirements. This element of inspection shall encompass visual examination.

**7.2 PRETEST PROCEDURES:** After separator has been leveled, hydrostatically test unit for (4) hours by filling full with potable water, provided by customer, with means of getting it from the nearest source by the installer. Acceptance criteria for this test is no leakage after four (4) hours.

**7.3 TESTS:** After hydrostatic test has been successfully completed and unit has been properly connected to influent and effluent piping, allow influent oil water mixture of 100 ppm, to flow into separator filled with potable water. After injection, operate unit for a minimum of ten tank volume changes prior to testing for contaminant removal.

**7.4 TEST FOR CONTAMINANTS:** The installer shall test the effluent to ensure that it meets oil concentration levels described in Section 2 - System Description & Requirements. Test shall be performed by an independent certified testing laboratory.

**7.5 ANALYTICAL METHODS:** Test and sample preservation methods for test contaminants shall be in accordance with the latest revision of EPA Methods for Chemical Analysis of Water and Wastes. Effluent oil concentration shall be measured by gravimetric, Separatory Funnel Extraction Method API 413.1.

## **8.0 MAINTENANCE**

8.1 The separator should be checked periodically to determine if excessive amounts of solids and debris have accumulated. If this happens the solids may accumulate enough to plug the lower part of the HD Q-PAC plates. In this case, efficiency will be reduced and oil in the outlet water may exceed specified effluent limits.

8.2 After the first 6 months of operation, the inlet area should be inspected and cleaned as follows:

1. Stop the flow of influent to the separator.
2. Remove separator cover.
3. Dispose of separated oil per regulatory procedures.
4. Remove water from separator through drain or hose.

8.3 Measure and record the depth of the solids. Use this measurement as the timing basis for the next solids inspection and clean out. Consult OWS drawing for depth of sludge baffle. Solids should not exceed this depth.

8.4 The HD Q-PAC plates can be either cleaned in place or removed and cleaned .

1. For cleaning in place, connect a pressure water hose (1-15 psig) and insert in plate spacing on top of the plate packs. As the water flushes the dirt out of the plate packs it should be removed by the vacuum hose.

2. For removing plate packs outside of separator. Flush with garden hose (10-15 psig) over an area to prevent discharge of flushed water into groundwater. It is only necessary to remove all sludge from between the plates and any very heavy oil coating.

8.5 Examine tank interior for damage and repair any damage to internal coating.

8.6 To restart separator, reinstall HD Q-PAC plate packs and polishing pack in original position. Make sure that both are securely in place so that they do not float when unit is operational.

8.7 For start up, repeat steps in section 6 of these instructions.

## **9.0 TROUBLESHOOTING**

Regularly monitor the quality of the effluent leaving the separator. If any loss in effluent quality is observed, steps should be taken to correct the problem immediately. Some things to check if effluent quality has deteriorated are:

1. Have you exceeded the separators rated flow? If so, return the flow rate to the design flow rate.

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2. Have you allowed the sludge to accumulate to a point where it has started to affect the performance of the separator? If so, take steps to have the sludge removed immediately. If it cannot be pumped out, you will have to drain the separator and remove the accumulated sludge.

3. Check the influent for surfactants or chemical emulsifiers. If any are present, you may need additional treatment in order to meet discharge requirements.

4. Are you pumping into the separator? If so, you may be mechanically emulsifying the influent oil. Sample the oil water from both before and after the pump. There should be no differences between the two samples. If you are mechanically emulsifying the oil you may have to change your influent pump to a low RPM positive displacement pump or similar pump that will cut down on shearing.

5. Check to make sure that the oil depth in the separator is not too great, a deep layer of product will reduce the efficiency of the separator. Free product should be removed and the separator put back in service.

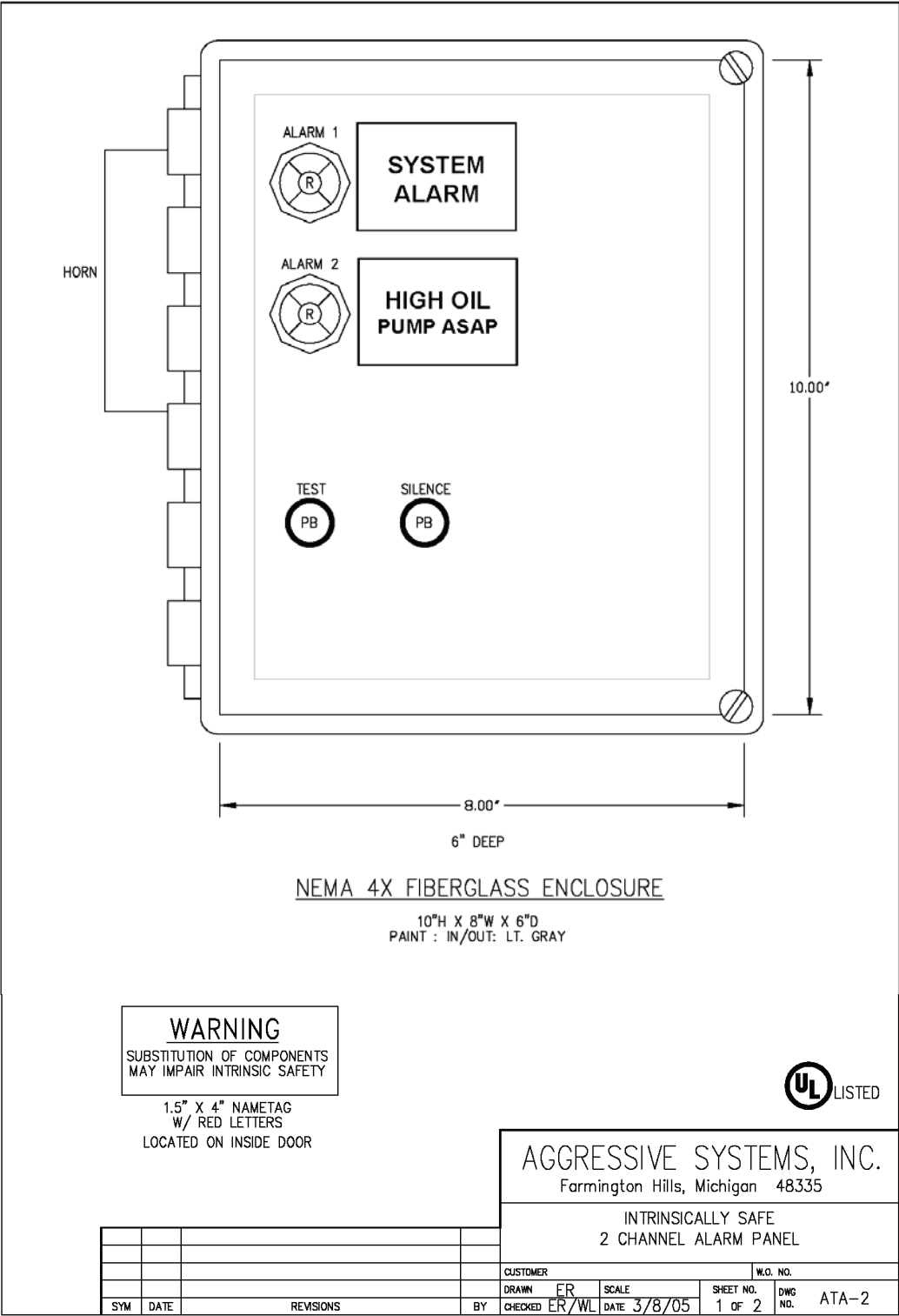
#### **9.1 TROUBLESHOOTING GUIDELINE**

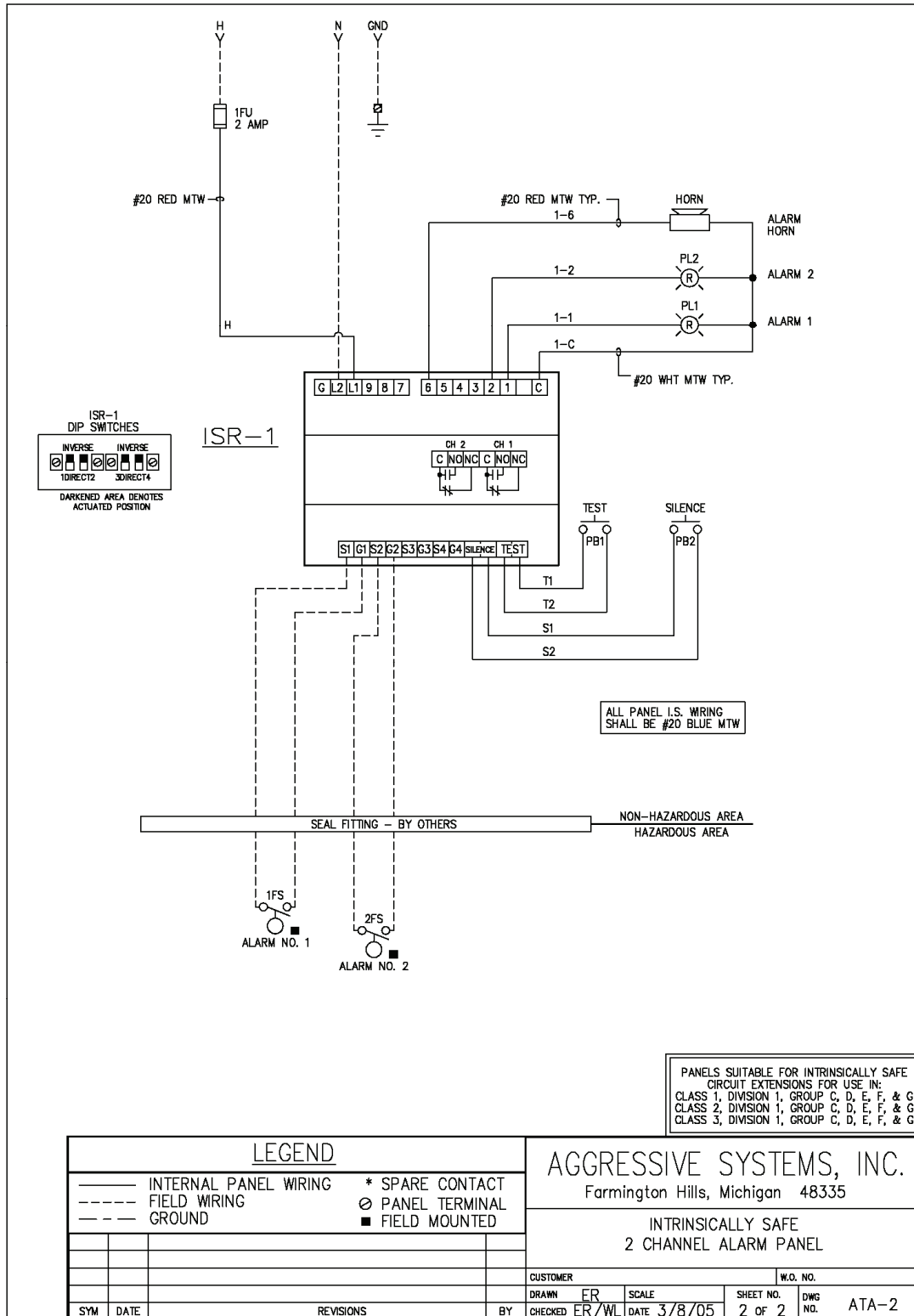
PROBLEM	POSSIBLE CAUSE	DIAGNOSTIC TECHNIQUE	CORRECTIVE ACTION
EFFLUENT CONCENTRATION TOO HIGH	Oil Concentration too Great for Design	Sample Influent	Decrease the Flow Rate
	Flow Too Great For Design	Check Flow	Decrease the Flow Rate
	Plates Blocked	Inspect, Remove Plates if Necessary	Clean Per Par. 8.4 Instructions and Reinstall.
	Solids have Accumulated Into Coalescer Plates	Check Depth of Solids In Coalescer Compartment	Remove Solids From Compartment See Par. 8.3.
TANK IS OVERFLOWING	Output Line Restricted	Check Flow	Remove Restriction

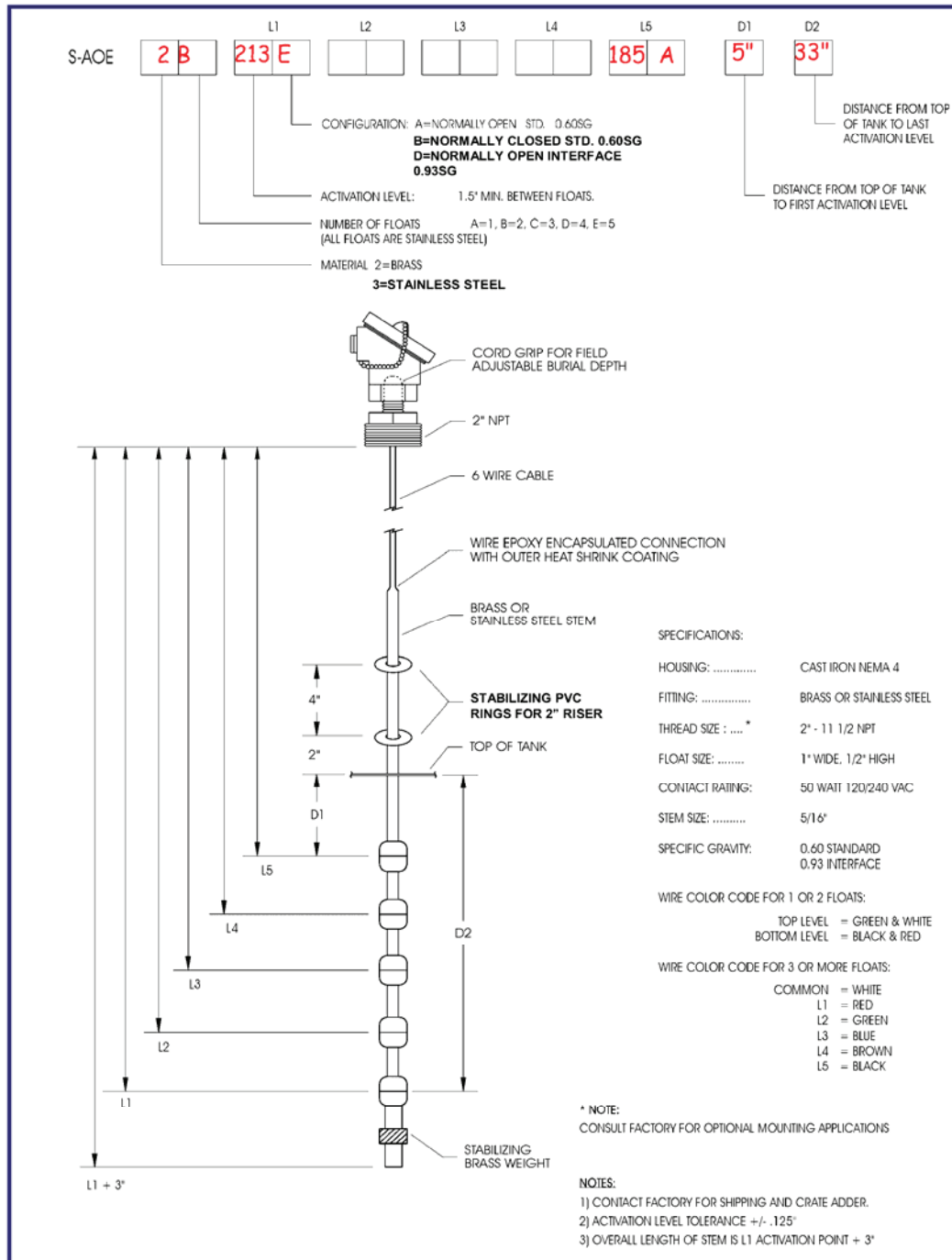
**Note:** For proper operation, outlet line should be as large as outlet nozzle unless unit is to be operated at very large flows

	<p><i>TA60-01 Heavy Equipment Shop Oil Water Separator Operations &amp; Maintenance Manual</i></p>	<p>Rev: 0 Oct 30, 2009</p>
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AGGRESSIVE SYSTEMS LEVEL PROBE AND ALARM PANEL







**AGGRESSIVE Systems, Inc. 24361 Indoplex Circle, Farmington Hills, MI 48335**  
PHONE (248) 477-5300 FAX (248) 477-5626 WEBSITE: <http://www.aggressivesystems.com>

#### WARRICK INTERFACE RELAY

MODEL NUMBER	HAZARDOUS LOCATIONS	MAXIMUM CABLE LENGTH SHALL NOT EXCEED
47 Series	Class I, Group C & D; Class II, Group E, F & G	900 ft. For a Float Sensor 450 ft. For a Probe Sensor

#### NOTE:

Refer to Series 47 data information for distance recommendations so not to exceed the maximum capacitance or inductance limitations of the control.

Connect line terminals 1FU (fuse block) and L2 (neutral) of the control to incoming single phase (120 vac.) supply line

#### **ALARM SENSOR CONNECTION:**

Connect the ALARM 1 sensor to terminals S1 and G1 of the control.

Connect the ALARM 2 sensor to terminals S2 and G2 of the control.

Auxiliary contacts for remote monitoring of the alarm conditions are provided from slave relays for each alarm channel as shown on the wiring diagram. A form "C" contact is provided, a common, normally closed and normally open. The terminals will change states when the function is energized, and return to the normal state when the device is deenergized.

The contacts are isolated load contacts (Dry) and must be wired in series with its load and that series branch circuit connected across a power source compatible with the load.

#### **OPERATING INSTRUCTIONS**

If the ALARM 1 sensor closes, an indication light and audible alarm will energize. The audible alarm can be silenced by momentarily depressing the SILENCE pushbutton, however the indication light will remain on until the alarm condition is corrected.

If the ALARM 2 sensor closes, an indication light and audible alarm will energize. The audible alarm can be silenced by momentarily depressing the SILENCE pushbutton, however the indication light will remain on until the alarm condition is corrected.

#### **SYSTEM TEST INSTRUCTIONS:**

A normally open TEST pushbuttons are provided on the door of the control box for testing all alarm functions.

When the test pushbutton is depressed, the alarm indicating lights and audible alarm will be energized and the Normal light will deenergize. The audible alarm can be silenced by momentarily depressing the SILENCE pushbutton, however, the light will remain energized until the TEST pushbutton is released.

	<p align="center"><b>TA60-01 Heavy Equipment Shop Oil Water Separator Operations &amp; Maintenance Manual</b></p>	<p>Rev: 0 Oct 30, 2009</p>
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**INSTALLATION AND OPERATION INSTRUCTIONS FOR  
AGGRESSIVE SYSTEMS, INC. CONTROL PANEL ATA-2**

**INSTALLATION INSTRUCTIONS**

IMPORTANT: Completely read and thoroughly understand these instructions before proceeding to install and wire the control.

Mount control box vertically on wall or other solid structure. The maximum distance between the control box and the location of the electrodes is determined by the sensitivity of the 47 control(s). This information is supplied on Form 470.

**INTRINSICALLY SAFE GENERAL INFORMATION**

IMPORTANT: BEFORE PROCEEDING TO INSTALL AND WIRE THE ALARM PANEL, READ AND THOROUGHLY UNDERSTAND THESE INSTRUCTIONS.

Experienced personnel should use the following information as a guide to the installation of intrinsically safe alarm panels. Selection or installation of equipment should always be accompanied by competent technical assistance. We encourage you to contact Aggressive Systems, Inc. or its local representative if further information is required.

The control panel contains a U.L. Listed interface relay with Intrinsically Safe Sensing Circuits. The interface relay is Associated Apparatus listed under Process Control equipment, with Intrinsically Safe Outputs for Interface into Division 1 Hazardous Locations. The Circuits are to be connected to any simple non-energy generating or storing device such as a pushbutton, limit, float switch, or any Warrick electrode and fitting assembly.

The control panel is reassembled and ready to wire. Locate the panel in a non-hazardous area where an explosive environment does not exist.

Cabinet and mounting plate to be connected to a good earth ground. For additional guidance on "Hazardous Location Installation," and "Intrinsically Safe Devices," consult ANSI/ISA standard RP 12-6 or NEC ARTICLES 500 through 516.

**CAUTION:**

Intrinsically safe wiring must be kept separate from non-intrinsically safe wiring. Special procedures have been followed during the manufacturing of these control panels to insure proper spacing. Some models incorporate isolated barriers or covers for this purpose.

A separate rigid metallic conduit should be used to enclose the conductors of the intrinsically safe circuit. Multiple runs of intrinsically safe wiring may be run in the same conduit only where at least 0.25mm (0.010 inch) thick insulation, suitable for the maximum temperature, is used on each conductor. Refer to ANSI/ISA RP 12.6 for details. Conduit or cable, containing the intrinsically safe wiring, shall be sealed in accordance with the National Electrical Code, NFPA No. 70, (approved sealing fitting), where the conduit enters or exits the hazardous locations.

INDUCTANCE AND CAPACITANCE: For intrinsically safe wiring use 16 AWG or 14 QWG TYPE THHN/THHW/THWN or MTW. By using these types of wire in conjunction with a limitation on distance, you will not exceed the maximum capacitance or inductance for field wiring.

Use the following chart as a guide for maximum total length of all the intrinsically safe wiring (of each conductor), excluding any ground wiring.

	<p><i>TA60-01 Heavy Equipment Shop Oil Water Separator Operations &amp; Maintenance Manual</i></p>	<p>Rev: 0 Oct 30, 2009</p>
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3.4 Sitrans Flow Sensor



Quick Start Manual • May 2008



- |            |
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| English    |
| Dansk      |
| Deutsch    |
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| Español    |
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| Nederlands |
| Português  |
| Suomi      |
| Svenska    |

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**sitrans**

PROBE LU (PROFIBUS PA)

**SIEMENS**

**Safety Guidelines:** Warning notices must be observed to ensure personal safety as well as that of others, and to protect the product and the connected equipment. These warning notices are accompanied by a clarification of the level of caution to be observed.

**Qualified Personnel:** This device/system may only be set up and operated in conjunction with this manual. Qualified personnel are only authorized to install and operate this equipment in accordance with established safety practices and standards.

**Unit Repair and Excluded Liability:**

- The user is responsible for all changes and repairs made to the device by the user or the user's agent.
- All new components are to be provided by Siemens Milltronics Process Instruments Inc.
- Restrict repair to faulty components only.
- Do not reuse faulty components.

**Warning:** This product can only function properly and safely if it is correctly transported, stored, installed, set up, operated, and maintained.

**This product is intended for use in industrial areas. Operation of this equipment in a residential area may cause interference to several frequency based communications.**

**Note:** Always use product in accordance with specifications.

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- For a selection of Siemens Milltronics level measurement manuals, go to:  
**[www.siemens.com/processautomation](http://www.siemens.com/processautomation)**. Under Process Instrumentation, select *Level Measurement* and then go to the manual archive listed under the product family.
- For a selection of Siemens Milltronics weighing manuals, go to:  
**[www.siemens.com/processautomation](http://www.siemens.com/processautomation)**. Under Weighing Technology, select *Continuous Weighing Systems* and then go to the manual archive listed under the product family.

# SITRANS Probe LU (PROFIBUS PA) Quick Start Manual

English

This manual outlines the essential features and functions of the SITRANS Probe LU (PROFIBUS PA). We strongly advise you to acquire the detailed version of the manual so you can use your instrument to its fullest potential. The complete manual can be downloaded from the Siemens website at: [www.siemens.com/level](http://www.siemens.com/level). The printed manual is available from your local Siemens representative.

Questions about the contents of this manual can be directed to:


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1954 Technology Drive, P.O. Box 4225  
Peterborough, Ontario, Canada, K9J 7B1  
Email: [techpubs.smpi@siemens.com](mailto:techpubs.smpi@siemens.com)


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## Safety Guidelines

Warning notices must be observed to ensure personal safety as well as that of others, and to protect the product and the connected equipment. These warning notices are accompanied by a clarification of the level of caution to be observed.


**WARNING:** relates to a warning symbol on the product, and means that failure to observe the necessary precautions can result in death, serious injury, and/or considerable material damage.


**WARNING<sup>1</sup>:** means that failure to observe the necessary precautions can result in death, serious injury, and/or considerable material damage.

**Note:** means important information about the product or that part of the operating manual.

<sup>1</sup> This warning symbol is used when there is no corresponding caution symbol on the product.

## SITRANS Probe LU (PROFIBUS PA)

**! WARNING: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.**

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate, radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving transducer.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a different circuit from the one to which the receiver is connected.
- Consult an experienced radio/TV technician for help.

**Note:** This product is intended for use in industrial areas. Operation of this equipment in a residential area may cause interference to several frequency based communications.

SITRANS Probe LU is a 2-wire loop-powered, continuous level monitor that uses advanced ultrasonic techniques. The instrument consists of an electronic component coupled to the transducer and process connection.

The transducer is available in ETFE (ethylene-tetrafluoroethylene) or PVDF (polyvinylidene fluoride), allowing SITRANS Probe LU to be used in a wide variety of industries and applications using corrosive chemicals.

The ultrasonic transducer contains a temperature-sensing element to compensate for temperature changes in the application.

Communication is via PROFIBUS PA. This device supports acyclic communications from both a PROFIBUS Class I and Class II master. Signals are processed using Sonic Intelligence® which has been field-proven in over 500,000 applications worldwide (ultrasonic and radar).

SITRANS Probe LU is available in three versions:

- General Purpose (non-hazardous)
- Intrinsically Safe (with suitable barrier)
- Non-Incendive (FM Class I, Div. 2)

## Specifications

For a complete listing, see the SITRANS Probe LU (PROFIBUS PA) Instruction Manual. For Approvals information, please refer to the device nameplate<sup>1</sup>.

<sup>1</sup> The device nameplate is shown on the inside front cover of this manual.



## Installation



### WARNINGS:

- Installation shall only be performed by qualified personnel and in accordance with local governing regulations.
- SITRANS Probe LU is to be used only in the manner outlined in this manual, otherwise protection provided by the equipment may be impaired.

**Note:** Please refer to the device nameplate for approval information.

## Mounting location

### Recommendations

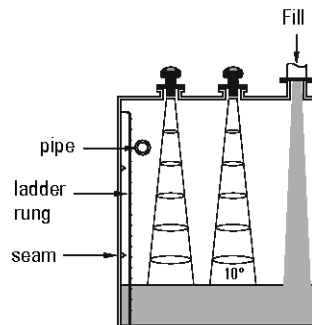
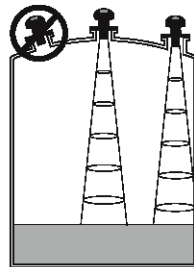
- Ambient temperature should be within  $-40$  to  $+80$  °C ( $-40$  to  $+176$  °F).
- Provide easy access for viewing the display and programming via the handheld programmer.
- Provide an environment suitable to the housing rating and materials of construction.
- Keep the sound path perpendicular to the material surface.

### Precautions

- Avoid proximity to high voltage or current wiring, high voltage or current contacts, and to variable frequency motor speed controllers.
- Avoid interference to the sound path from obstructions or from the fill path.

The sound path should be:

- perpendicular to the monitored surface
- clear of rough walls, seams, rungs, or other obstructions
- clear of the fill path



## Mounting instructions

**Note:** Ideally, mount SITRANS Probe LU so that the face of the transducer is at least 300 mm (1 ft) above the highest anticipated level.

SITRANS Probe LU is available in three thread types: 2" NPT, 2" BSP, or PF2/G (BS EN ISO 228-1).

1. Before inserting SITRANS Probe LU into its mounting connection, ensure that the threads are of the same type to avoid damaging them.
2. Simply screw SITRANS Probe LU into the process connection and hand tighten.

## Wiring

### Power

#### WARNINGS:



**DC terminals shall be supplied from an SELV<sup>1</sup> source in accordance with IEC-1010-1 Annex H.**



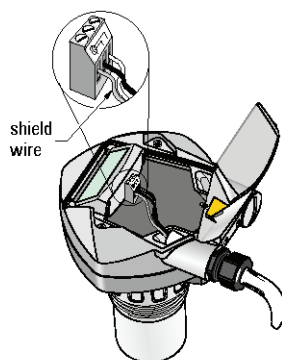
**All field wiring must have insulation suitable for rated voltages.**

## Connecting SITRANS Probe LU (PROFIBUS PA)

#### Note:

- For detailed wiring instructions, please see the full manual.
- For Intrinsically Safe setups (FM/CSA Class I, Div. 1), see *FM/CSA Intrinsically Safe Connection Drawing* on page 1 of Appendix A, for drawing number 23650617.
- For Non-Incendive setups (FM: Class I, Div. 2), see *FM: Class I, Div. 2 Connection Drawing* on page 5 of Appendix A, for drawing number 23650583.
- The non-metallic enclosure does not provide a continuous ground path between conduit connections: use grounding-type bushings and jumpers.
- Separate cables and conduits may be required to conform to standard instrumentation wiring practices, or electrical codes.

1. Strip the cable jacket for approximately 70 mm (2.75") from the end of the PROFIBUS PA cable, and thread the wires through the gland<sup>2</sup>.
2. Connect the wires to the terminal as shown:  
Probe LU (PROFIBUS PA) is not polarity-sensitive.



<sup>1</sup> Safety Extra Low Voltage

<sup>2</sup> If cable is routed through conduit, use only approved suitable-size hubs for waterproof applications.

3. Ground the instrument according to local regulations.
  - For Intrinsically Safe applications, connect the cable shield to the instrument shield connection<sup>1</sup>, and ground the shield connection to an external ground that is connected to an equal-potential grounding grid. For more detail on Explosion Protection, you can download the brochure *Siemens Process Automation Explosion Protection* (part number A5E00265440) from [www.siemens.com/level](http://www.siemens.com/level), under Brochures/General.
  - For General Purpose applications, ground the shield at one point only (usually the power supply side) and continue the shield from device to device, connecting it to the shield connection in each Probe LU.
4. Tighten the gland to form a good seal.
5. Close the cover and tighten screws: **please do not overtighten screws**. Recommended torque is 0.5 to 1.1 N-m (5 to 10 in-lb).

**Note:** PROFIBUS PA must be terminated at both extreme ends of the cable for it to work properly. Please refer to the *PROFIBUS PA User and Installation Guidelines* (order number 2.092), available from [www.profibus.com](http://www.profibus.com).

## Communications via PROFIBUS PA

### Notes:

- The following instructions assume that the user is familiar with PROFIBUS PA.
- For a complete list of applicable parameters, please see the full manual.

### Configuring the PROFIBUS PA master

To configure SITRANS Probe LU on the network, you will need the GSD file. You can download the files (**SIEM8124.gsd** for the 6 m Probe LU, or **SIEM8123.gsd** for the 12 m Probe LU) from our web site. Go to the SITRANS Probe LU product page at: <https://pia.khe.siemens.com/index.asp?Nr=11157> and click **Downloads**.

### Startup

SITRANS Probe LU automatically starts up in **RUN** mode, and detects the material level. The LCD displays the material level referenced from the Low Level Point<sup>2</sup> (the output of Analog Input Function Block1/AIFB1). System status is displayed on the LCD, or on a remote communications terminal.

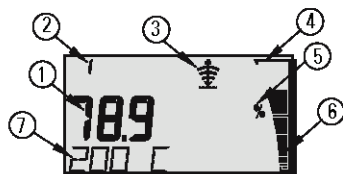
<sup>1</sup> The instrument shield connection is internally connected to the external ground lug.

<sup>2</sup> See *Quick Setup* on page 11 for an illustration.

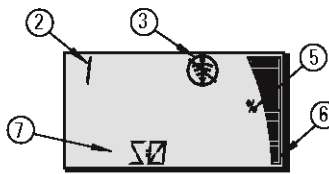


## Startup Display (RUN mode)

**Normal operation**





**Failsafe operation**



1 – Primary region displays material level (Output of the active AIFB)

2 – Menu number (displays the number of the active AIFB: 1 or 2)

3 – Echo status indicator: Reliable Echo  or Unreliable Echo 

(The Unreliable Echo border flashes if Loss of Echo (LOE) is pending<sup>1</sup>. When LOE becomes active, the border is solid and the secondary region displays **S:0.**)

4 – Bar graph border (always visible in RUN mode)

5 – Units or Percent

6 – Active bar graph represents material level

(The lowest bar flashes once per second as a heartbeat.)

7 – Secondary region displays one of the following:


- Internal electronics temperature
- Value representing echo confidence
- Distance (Secondary Value 2)
- General status information, or a fault code (see the full manual for a list of fault codes and their meanings)

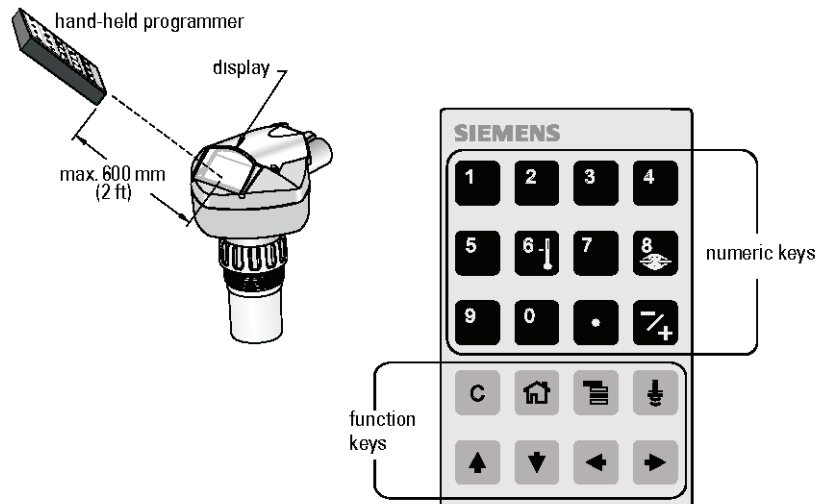
## Programming SITRANS Probe LU (PROFIBUS PA)

The parameters that control the operation of the Probe LU (PROFIBUS PA) are organized into function groups, and arranged in a 4-level menu structure that can be accessed either via the handheld programmer, or via PDM and PROFIBUS PA. (For charts showing the complete menu structure, refer to the full manual.)




<sup>1</sup> For more details on Loss of Echo, refer to the full manual.

## The handheld programmer<sup>1</sup>

To activate PROGRAM mode, point the handheld programmer at the display from a maximum distance of 600 mm (2 ft), and press the Mode key .

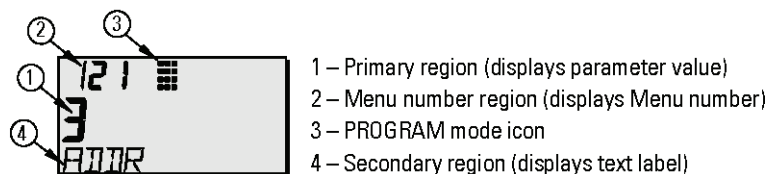


Within Program Mode, the handheld programmer has two modes of operation: Navigation and Edit.

- Press the Mode key  to switch from RUN to PROGRAM and enter Navigation Mode: the rightmost digit of the menu number flashes and the PROGRAM icon  is not visible.
- Press Right arrow a second time to change the mode from Navigation to Edit.
- In Edit mode, the PROGRAM icon  appears and flashes.

## PROGRAM Mode Display

**Note:** SITRANS Probe LU (PROFIBUS PA) continues to monitor In and Out values even when the device is in PROGRAM mode.



<sup>1</sup> For complete instructions on local programming using the handheld programmer, please see the full manual.

When you activate PROGRAM mode for the first time in any power cycle, the LCD displays the first menu. If, during the same power cycle, you switch to RUN mode, and then back to PROGRAM mode, the LCD will display the menu or item that was last accessed in PROGRAM mode.

## Security

### Local operation enable

Local Operation can be enabled or disabled via PDM. Go to **Identification > Device > Local Operation Enable** and select the desired setting.


### Write Locking

Write locking prevents any changes to parameters via PDM or via the handheld programmer, but still allows access to the device.

Via PDM, open the menu **Device – Write Locking**, and select **Off** or **On**.

Hand programmer values	2457 (unlock value)	Off	Enables parameter changes
	any other value	On	Disables parameter changes


Via the handheld programmer:

- Open **Identification** Menu, then scroll down to CONFIG.
- Press **Right ARROW**  to open the Config Menu, then scroll down to LOCK.
  - 1. Identification**
    - 1.3. Configuration
      - 1.3.5. Lock
- To enable programming, set LOCK to **2457**. To disable programming, enter any other value.

### Remote operation enable

Remote Operation can be enabled or disabled via the handheld programmer.

Values	0	Off	Remote operation enabled.
	1	On	Remote operation disabled.

- Open **Identification** Menu, then scroll down to CONFIG.
- Press **Right ARROW**  to open the Config Menu, then scroll down to REMLOCK.
  - 1. Identification**
    - 1.2. Configuration
      - 1.2.2. Remote Lockout
- To enable programming, set REMLOCK to **0**. To disable programming, enter **1**.

## Master Reset

In PDM, open the menu **Device – Master Reset**, to access the reset options, including Factory Reset.

## Activating SITRANS Probe LU




**Note:** Keep infrared devices such as laptops, cell phones, and PDAs, away from SITRANS Probe LU (PROFIBUS PA) to prevent inadvertent operation.






Power up the instrument. SITRANS Probe LU (PROFIBUS PA) starts in **RUN** mode, and the LCD displays the output of AIFB1.

### Network Address (default 126)

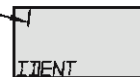
#### Verifying/changing the device address via the handheld programmer

**Notes:**

- Local programming must be enabled, to allow changes (see *Local operation enable* on page 9).
- CLEAR**  can be used to clear the field.
- Press **Right ARROW**  to open Edit mode: the PROGRAM icon flashes.
- Press **Left ARROW**  to cancel Edit mode: the Menu number flashes (the PROGRAM icon is not visible).

- Press **Mode**  to activate **PROGRAM** mode and open Menu level 1.
- Press **Right ARROW**  twice to navigate to PROFIBUS Address.
- Press **Right ARROW**  again to open Edit mode: the PROGRAM icon will flash.
- Key in a new value and press **Right ARROW**  to accept it. (The LCD displays the new value, PROGRAM icon disappears, and the last menu digit flashes to indicate Navigation mode.)
- Press **Mode**  to return to RUN mode.

Menu level: last digit flashes in Navigation mode



Program icon: flashes in Edit mode



Right-most digit flashes in Navigation mode



### Performing calibration via PROFIBUS PA

To use PROFIBUS PA, you will need a PC configuration tool: we recommend SIMATIC PDM. Please consult the operating instructions or online help for details on using SIMATIC PDM. (An Application Guide *SMPI PROFIBUS PA instruments and SIMATIC PDM* is available on our website at: <https://pia.khe.siemens.com/index.asp?Nr=11157>.)

### Changing parameter settings

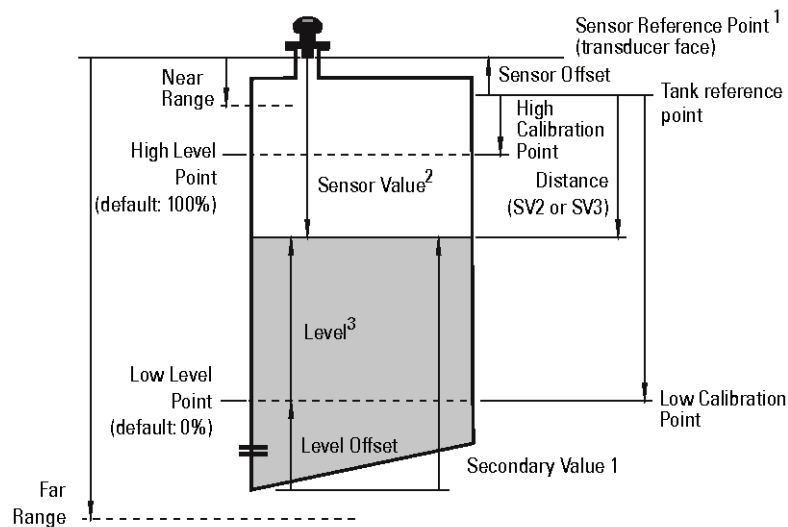
- First launch SIMATIC PDM, connect to SITRANS Probe LU (PROFIBUS PA), and upload data from the device.
- Adjust parameter values in the parameter view field (right side of screen).
- After adjusting the value, press **Enter** (the status fields read **Changed**).
- When you have completed the adjustments, open the **Device** menu, download data to the device, and save parameter settings offline (the status fields go blank).

### Quick Setup

Only four settings are required for a Quick Setup:

- High Calibration Point and High Level Point
- Low Calibration Point and Low Level Point

Primary Variable (PV) will be level (SV1). SV1 (Secondary Value 1) is the sum of Level plus Level Offset (if any).



1. Sensor Reference Point: the point to which all of the above parameters are referenced.
2. Sensor Value: the value produced by the echo processing, which represents the distance from the Sensor Reference Point to the target.
3. Level Value: the level measured in level units.

## Calibration

1. Open the menu **Device – Sensor Calibration** and select the tab **Dry Calibration**. (Click on **Additional Information** to see the schematic showing the PROFIBUS parameters.)
2. Enter the new value for Low Calibration Point (default units are meters).
3. Enter the corresponding value for Low Level Point in percent (default is 0).
4. Enter the new value for High Calibration Point (default units are meters).
5. Enter the corresponding value for High Level Point in percent (default is 100).
6. Click on **Transfer**.
7. SITRANS Probe LU is now ready to operate.

## Auto False Echo Suppression

*Enables a "learned" TVT curve to be used in place of the default TVT curve. Use this feature to ignore false echoes on the echo profile. Set Range (Auto False Echo Suppression Distance) first, then set Auto False Echo Suppression.*

### Range (Auto False Echo Suppression Distance)<sup>1</sup>: (default 1)

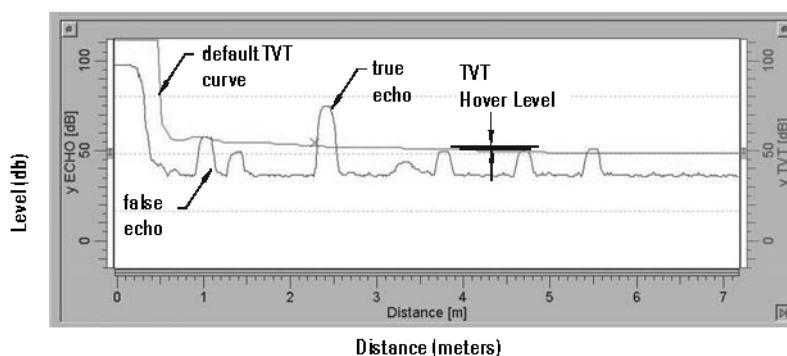
*Defines the endpoint of the Learned TVT distance.*

1. Rotate the instrument for best signal (lower false-echo amplitude).
2. Go to **Input > Detailed Setup > TVT setup > Distance**.
3. Determine the actual distance from the reference point (transducer face) to the material surface.
4. Subtract 0.5 m (20") from this distance, and enter the result.

### Set Auto False Echo Suppression

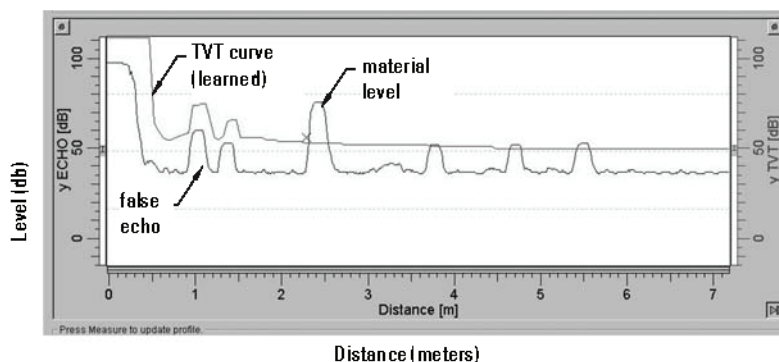
1. Open the menu **Device – Auto False Echo Suppression** and select the option to change it.
2. Select **Learn**. The device will automatically revert to **On** (Use Learned TVT) after a few seconds.

### Display before Auto False Echo Suppression



<sup>1</sup> This parameter cannot be reset to the factory default.

## Display after Auto False Echo Suppression



English

## PROFIBUS Current Consumption

**Warning:** This parameter should be modified only once at installation, to match the design criteria of the network.

*Allows you to select the PROFIBUS device current. Higher values allow faster update rates.*

Values	Loop current	Update time <sup>1</sup>
0	* 12 mA	6.0 s (typical), maximum 16.0 s
1	13 mA	5.0 s (typical), maximum 14.0 s
2	15 mA	3.7 s (typical), maximum 8.0 s
3	20 mA	2.4 s (typical), maximum 4.0 s

Go to **Input > Standard Setup > PROFIBUS Current Consumption**, and enter the value corresponding to the desired device current.

## Maintenance

SITRANS Probe LU requires no maintenance or cleaning.

## Unit Repair and Excluded Liability

For detailed information, please see the inside back cover.

<sup>1</sup> Temperature dependent: typical value at +20 °C (+68 °F); maximum value at +80 °C (+176 °F).

## **Instructions specific to hazardous area installations (Reference European ATEX Directive 94/9/EC, Annex II, 1/0/6)**

The following instructions apply to equipment covered by certificate number SIRA 03ATEX2142X:

1. For use and assembly, refer to the main instructions.
2. The equipment is certified for use as Category 1G equipment.
3. The equipment may be used with flammable gases and vapors with apparatus group IIC and temperature class T4.
4. The equipment is certified for use in an ambient temperature range of  $-40^{\circ}\text{C}$  to  $80^{\circ}\text{C}$ .
5. The equipment has not been assessed as a safety related device (as referred to by Directive 94/9/EC Annex II, clause 1.5).
6. Installation and inspection of this equipment shall be carried out by suitably trained personnel in accordance with the applicable code of practice (EN 60079-14 and EN 60079-17 in Europe).
7. Repair of this equipment shall be carried out by suitably trained personnel in accordance with the applicable code of practice (e.g. EN 60079-19 within Europe).
8. Components to be incorporated into or used as replacements in the equipment shall be fitted by suitably trained personnel in accordance with the manufacturer's documentation.
9. It is the responsibility of the user to ensure that manual override is possible in order to shut down the equipment and protective systems incorporated within automatic processes which deviate from the intended operating conditions, provided that this does not compromise safety.
10. The 'X' suffix to the certificate number relates to the following special conditions for safe use:
  - a. Parts of the enclosure may be non-conducting and may generate an ignition-capable level of electrostatic charge under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charge on non-conducting surfaces.
  - b. As either Aluminum, Magnesium, Titanium or Zirconium may be used at the accessible surface of the equipment, in the event of rare incidents, ignition sources due to impact and friction sparks could occur. This shall be considered when the SITRANS Probe LU (PROFIBUS PA) is being installed in locations that specifically require group II, category 1G equipment.



11. The certification of this equipment relies upon the following materials used in its construction:

Aluminum alloy ANSI ref. A380.0 (aluminum enclosure option)  
STYCAST<sup>1</sup> 2651-40FR encapsulant, catalyst II

The detailed composition of Aluminum A380.0 as used in the metal enclosure (threaded lid option only) is as follows:

Si – 8.5%, Fe – 1.3%, Cu – 3.5%, Mn – 0.5%, Mg – 0.1%, Ni – 0.1%, Zn – 3%,  
Sn – 0.35%, others – 0.5%, Al - balance

If the equipment is likely to come into contact with aggressive substances, then it is the responsibility of the user to take suitable precautions that prevent it from being adversely affected, thus ensuring that the type of protection is not compromised.

Aggressive substances: e.g. acidic liquids or gases that may attack metals, or solvents that may affect polymeric materials.

Suitable precautions: e.g. regular checks as part of routine inspections or establishing from the material's data sheet that it is resistant to specific chemicals.

12. **Equipment Marking:**

The equipment marking contains at least the information on the product label, shown on the inside front cover of this manual.

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<sup>1</sup> STYCAST® is a registered trademark of the National Starch and Chemical Company.

	<p><i>TA60-01 Heavy Equipment Shop Oil Water Separator Operations &amp; Maintenance Manual</i></p>	<p>Rev: 0 Oct 30, 2009</p>
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# OIL/WATER SEPARATOR DESIGN AND INSTALLATION

TA-60

BLDG. 1

## LIST OF DRAWINGS

REVISION NUMBER	SHEET NUMBER	DISCIPLINE SHEET NUMBER
0	1	G-0001
0	2	G-0001
0	3	C-1000
0	4	C-3000
0	5	C-5000
0	6	C-5001
0	7	E-0001
0	8	E-1000
0	9	E-5000
0	10	E-6000
0	11	E-6001
0	12	E-7000

## PROJECT DESIGN DATA

GENERAL  
LANK ENGINEERING MANUAL  
LANK DRAFTING MANUAL  
INTERNATIONAL BUILDING CODE

## ELECTRICAL

NATIONAL ELECTRICAL CODE

DRAWING TITLE  
TITLE SHEET  
LEGEND  
SITE PLAN AND OIL/WATER SEPARATOR DRAIN LINE PROFILE  
UTILITY TRENCH SECTIONS  
SANITARY SEWER PORT-CLEANOUT DETAIL  
MISCELLANEOUS DETAILS  
ELECTRICAL LEGEND  
PARTIAL FIRST FLOOR PLAN - ELECTRICAL  
LEVEL SENSOR FLOATS AND DISCHARGE FLOW METER INSTALLATION DETAIL  
ALARM PANEL HIGH & HIGH LEVEL WITH LEAK DETECT DIAGRAM  
FLOW METER DIAGRAM  
PANEL SCHEDULE - LP-3

## PRODUCT OPTIONS AND SUBSTITUTIONS

"NO APPROVED EQUAL" IS ALWAYS APPLIED AFTER A BRAND NAME, PATENTED PROCESS OR PATENTED NUMBER. THE CONTRACTOR MAY SUBSTITUTE ANY BRAND OR PROCESS APPROVED AS AN EQUAL BY SPECIFYING ARCHITECT/ENGINEER. THE ONLY EXCEPTION IS WHERE "NO SUBSTITUTION" IS SPECIFIED. SEE GENERAL PROVISION "MATERIAL AND WORKMANSHIP".



LOCATION PLAN  
SCALE: NONE



## ENGINEERING SERVICES

### OIL/WATER SEPARATOR DESIGN AND INSTALLATION

TITLE SHEET

BLDG 1  
SUBMITTED  
DATE  
APPROVED FOR RELEASE  
TERMINAL COMMENTS  
DATE  
TA-60  
1969

SHEET  
G-0001  
1 OF 12

Los Alamos  
NATIONAL LABORATORY  
PO Box 1663  
Los Alamos, New Mexico 87545

CLASSIFICATION: U  
PROJECT ID  
DRAWING NO  
REV

102235  
C54828  
0



LEGEND

- EXISTING FEATURES
- EXISTING FEATURES TO BE REMOVED
- EXISTING PRIMARY CONTOURS
- EXISTING SECONDARY CONTOURS
- EXISTING CHAIN LINK FENCE
- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING TELEPHONE LINE
- EXISTING UNDERGROUND POWER LINE
- NEW FEATURES
- NEW SANITARY SEWER LINE

NO	DATE	CLASS	REV	ADD	DESCRIPTION	DRAWN	DESIGN	CHECKED	DATE	DATE	DATE	DATE
ENGINEERING SERVICES												
OIL/WATER SEPARATOR DESIGN AND INSTALLATION												
LEGEND												
BLDG 1												
SUBMITTED												
STEVE DUMOND												
APPROVED FOR RELEASE												
TOLERANCE CORRECTIONS												
SHEET												
C-0001												
2 OF 12												
DATE												
PROJECT ID												
102235												
DRAWING NO												
C54828												
REV												
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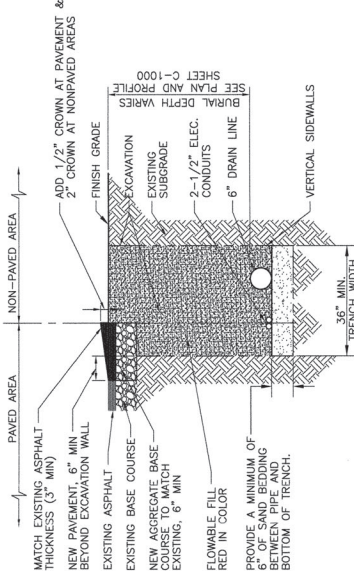






# GENERAL NOTES

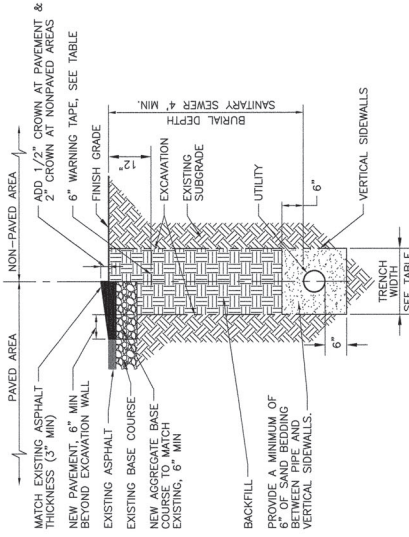
1. FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.



WARNING TAPE TABLE	
UTILITY TAPE	COLOR
SEWER	GREEN
ELECTRIC	RED

TRENCH TABLE	
UTILITY	TRENCH WIDTH
6"	36"

**UTILITY TRENCH SECTION**  
TYPICAL OF PIPE INSTALLATION ON INLET SIDE  
OF HOLDING TANK.  
SCALE: NONE



**UTILITY TRENCH SECTION**  
TYPICAL OF PIPE INSTALLATION ON OUTLET SIDE  
OF HOLDING TANK.  
SCALE: NONE

NO.	DATE	CLASS	REV	ADC	DESCRIPTION	DRAWN	CHECKED	APP

## ENGINEERING SERVICES

### OIL/WATER SEPARATOR DESIGN AND INSTALLATION

#### UTILITY TRENCH SECTIONS

BLDG 1  
SUBMITTED  
STEVE DAMIANO

TA-60  
APPROVED FOR RELEASE  
TOLERANCE CONFORMS

DATE: 5-6-09

57969

C-3000

4 OF 12

Los Alamos  
NATIONAL LABORATORY

PO Box 1663  
Los Alamos, NM 87545

CLASSIFICATION: U

PROJECT ID: 102235

DRAWING NO: C54828

REV: 0

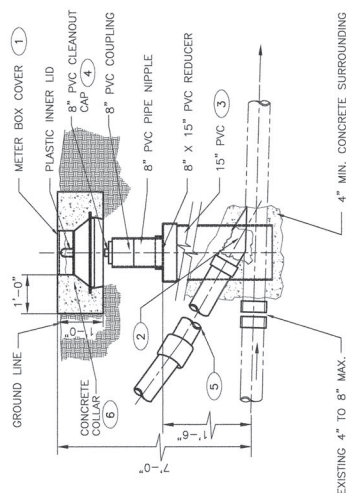
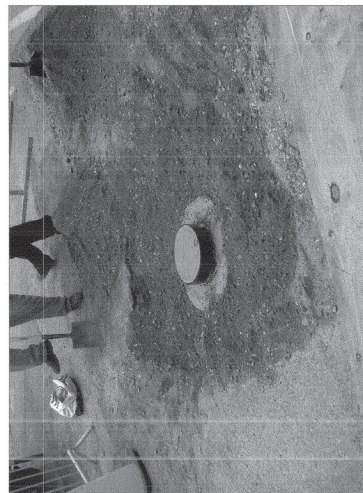


## GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.
2. PHOTOGRAPHS PROVIDED ARE FOR REFERENCE ONLY AND DO NOT REPRESENT THE ACTUAL SITE CONDITIONS FOR THIS PROJECT.

## KEYED NOTES

- ① METER BOX AND COLLAR SHALL BE SET FLUSH WITH SURROUNDING SURFACE. FORD METER BOX COMPANY, WABASH COVER STYLE W31 WITH W31L LID MARKED "SEWER".
- ② EXISTING PIPE SHALL BE CUT TO PROVIDE ACCESS. CUT APPROXIMATELY 10" LONG SECTION FROM TOP OF PIPE. 50% OF PIPE DIAMETER, AT FITTING CUT FROM INSIDE OF HUB. LEAVE FITTING HUBS INTACT.
- ③ INSERT INSIDE NEW 15" PIPE BARREL SHALL BE FORMED FROM THE CUT OUT SECTION OF EXISTING PIPE AT 2:1 SLOPE.
- ④ PORT CLEANOUT CAP TO BE 8" BELOW TOP OF METER BOX COVER.
- ⑤ PORT CLEANOUT CAN BE AT A TIE-IN JUNCTION OR PLACED IN-LINE.
- ⑥ CONCRETE COLLAR TO EXTEND 1 FOOT BEYOND METER BOX.



EXISTING 4" TO 8" MAX. — 4" MIN. CONCRETE SURROUNDING THE PORT, THE EXISTING PIPE, AND BELOW THE BOTTOM OF THE BASE.



NO	DATE	CLASS REV	AOC	DESCRIPTION	UNIV DESCH (CUB) SUB APP
<h1 style="text-align: center;">ENGINEERING SERVICES</h1>					
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><b>OIL/WATER SEPARATOR DESIGN AND INSTALLATION</b></p> <p><b>SANITARY SEWER PORT-CLEANOUT DETAIL</b></p> </div> <div style="width: 30%;"> <p>DRAWN: D. YAZGAN</p> <p>DESIGN: D. YAZGAN</p> <p>CHECKED: D. YAZGAN</p> <p>DATE: 5-6-09</p> </div> <div style="width: 30%;"> <p>TA-60</p> <p>APPROVED FOR RELEASE</p> <p>TERRANCE CONNOR</p> <p>5/6/09</p> </div> </div>					
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>BLDG 1</p> <p>SUMMITED</p> <p>STEVE DAMOND</p> </div> <div style="width: 30%;"> <p>5/26/09</p> </div> <div style="width: 30%;"> <p>5 of 12</p> <p>C-5000</p> </div> </div>					
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><b>Los Alamos</b> NATIONAL LABORATORY</p> </div> <div style="width: 30%;"> <p>PO Box 1663 Los Alamos, New Mexico 87545</p> </div> <div style="width: 30%;"> <p>CLASSIFICATION: U</p> <p>DATE: 12/16/09</p> </div> </div>					
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>PROJECT ID</p> </div> <div style="width: 30%;"> <p>DRAWING NO</p> </div> <div style="width: 30%;"> <p>REV</p> </div> </div>					
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>102235</p> </div> <div style="width: 30%;"> <p>C54828</p> </div> <div style="width: 30%;"> <p>5</p> </div> </div>					

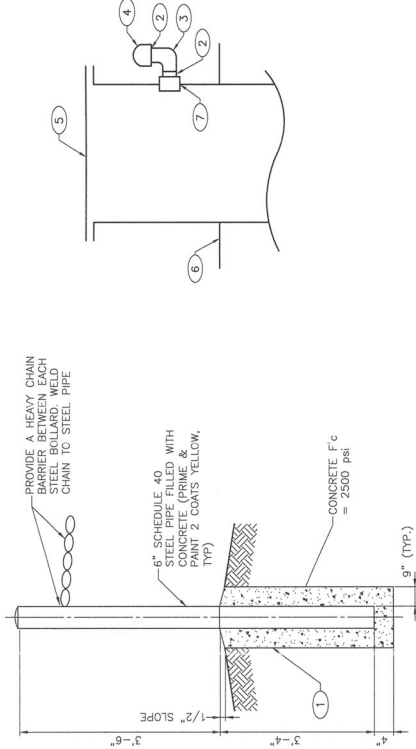


GENERAL NOTES

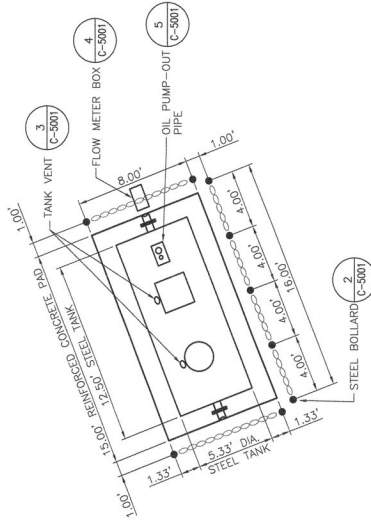
1. FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

KEYED NOTES

- CONSULT STRUCTURAL ENGINEER OF RECORD BEFORE POURING CONCRETE. FURNISH THE FOUNDATION SIDE ELEVATION, FOUNDATION PLAN, AND ELEVATION OF THE FOUNDATION, CONDUITS, ETC.) THAT OCCURS WITHIN THE HEIGHT OF THE FOUNDATION.
- GALVANIZED STEEL NIPPLE.
- GALVANIZED STEEL 2" 90° ELBOW.
- STEEL DUAL OUTLET VENT SCREEN, 2", MCMASTER CARR PORT #4815K15 OR EQUIVALENT.
- TANK MANWAY PROVIDED WITH TANK. 2" HOLE FACTORY PROVIDED FOR VENT CONNECTION.
- FINISH GRADE TOP OF CONCRETE SLAB.
- 2" F NPT BUILT INTO MANWAY.

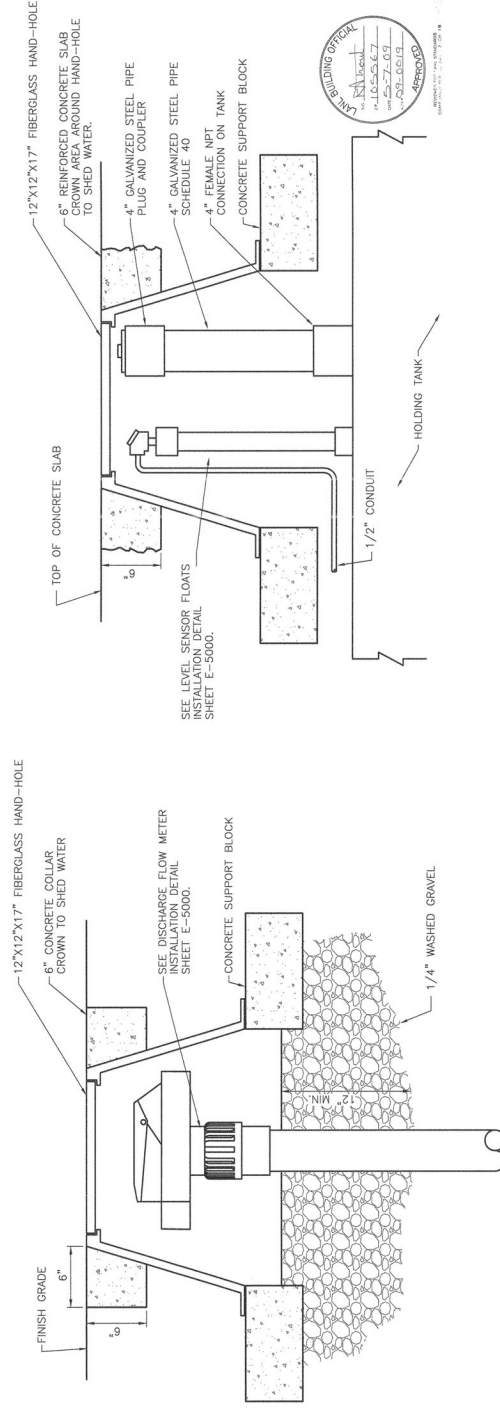


2 STEEL BOLLARD  
C-5007 SCALE: NONE



1 OIL/WATER SEPARATOR  
C-1000 SCALE: NONE

3 TANK VENT  
C-5007 SCALE: NONE



4 FLOW METER BOX  
C-5007 SCALE: NONE

5 OIL PUMP-OUT PIPE  
C-5007 SCALE: NONE

ENGINEERING SERVICES

OIL/WATER SEPARATOR  
DESIGN AND INSTALLATION

MISCELLANEOUS DETAILS

BLDG 1	DATE	CLASS	REV	DESCRIPTION	OWN	ISSN	CHD	APP
BLDG 1	5-6-89							
SUBMITTED	DATE	APPROVED FOR RELEASE	TERMINAL	CONCORD				
STEVE DIAMOND	5-6-89							
SHEET								
C-5001								
6 OF 12								
PROJECT ID								
102235								
DRAWING NO								
C54828								
REV								
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Los Alamos  
NATIONAL LABORATORY

PO Box 1663  
Los Alamos, New Mexico 87545

CLASSIFICATION: U

PROJECT ID

102235

DRAWING NO


C54828

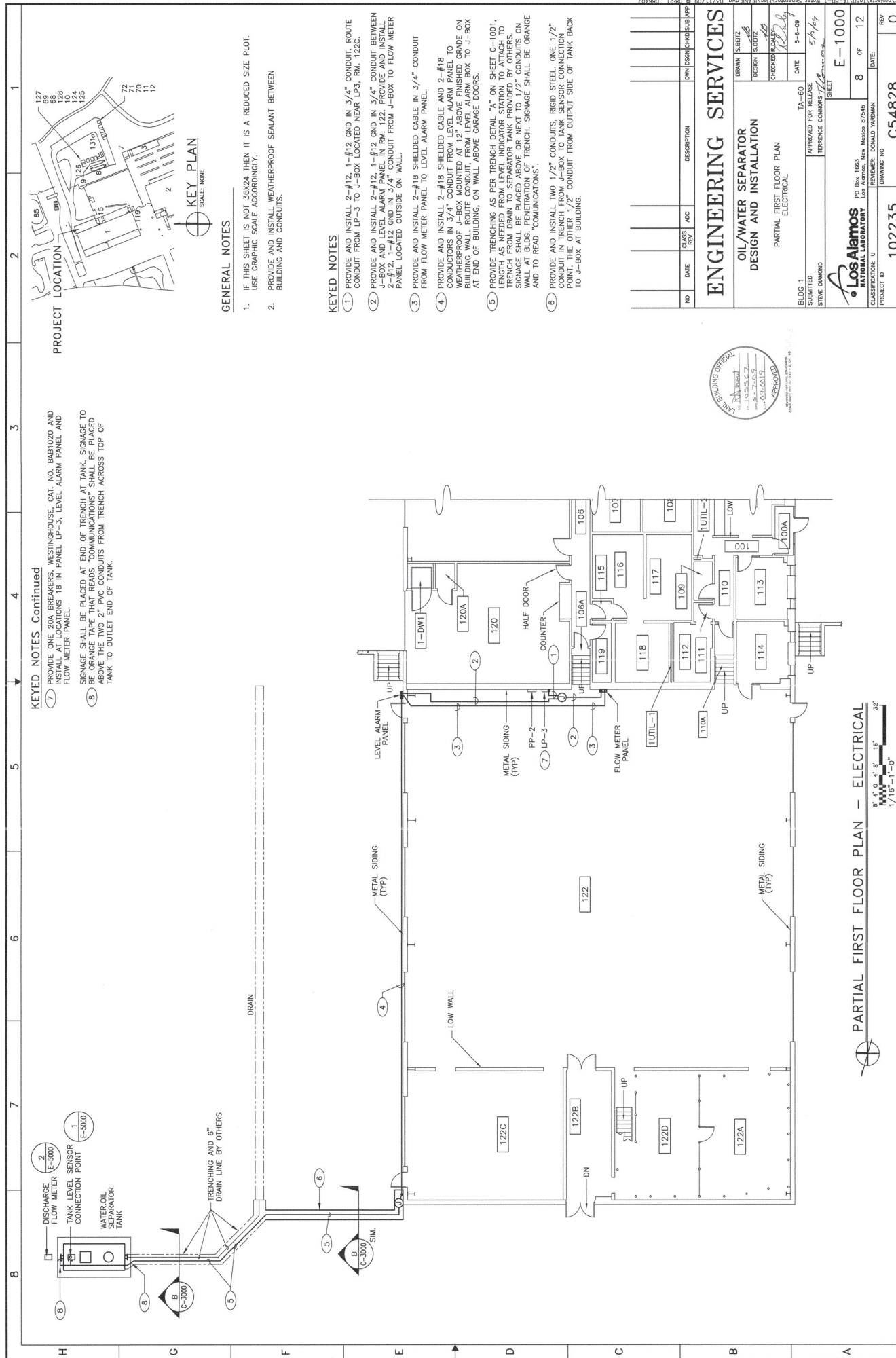
REV

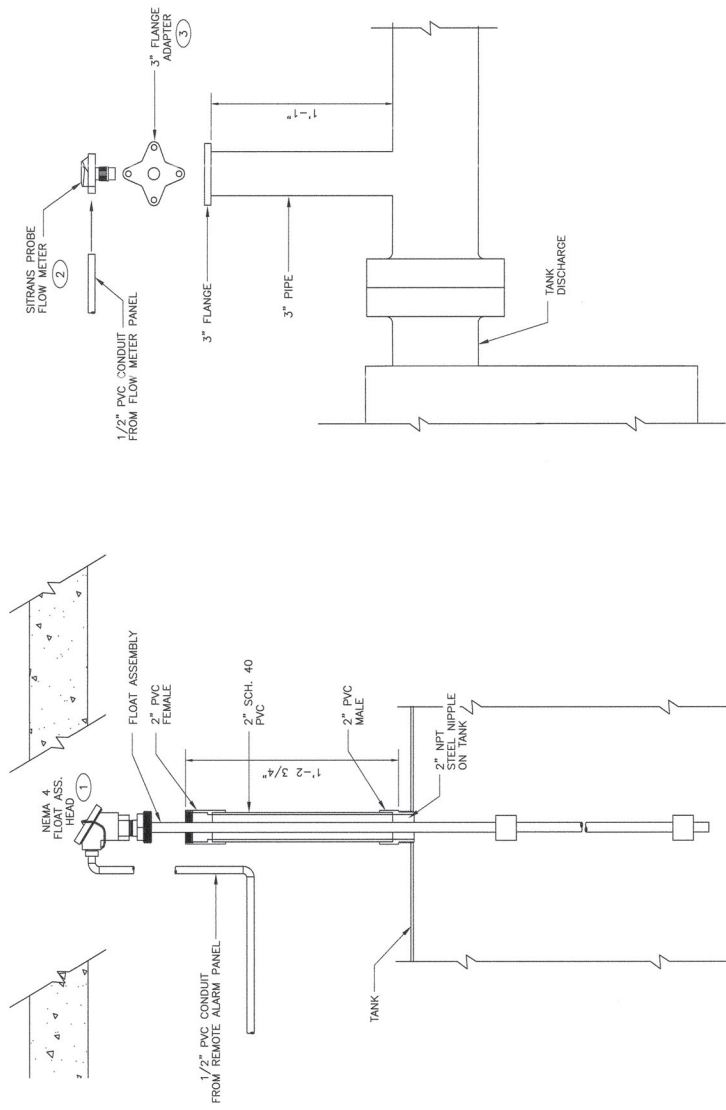
0



SYMBOL LEGEND		(NOT ALL SYMBOLS WILL APPLY TO THIS PROJECT)	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EXISTING		LIGHT POLE WITH FIXTURE
	REMOVE		EMERGENCY LIGHT FIXTURE
	NEW WORK		RECHARGEABLE TYPE
	HIDDEN OR BURIED		CEILING MOUNTED EXIT SIGN - ARROW AS INDICATED
	HOMERUN CONDUIT		TWO FACED EXIT SIGN
	GROUND		WALL MOUNTED EXIT SIGN
	PHASE		LIGHTING BOARD, POWER PANELBOARD
	SWITCHED		TRANSFORMER
	NEUTRAL		NON-FUSIBLE SAFETY SWITCH (NUMBER INDICATES SWITCH SIZE)
	ISOLATED GROUND		FUSED SAFETY SWITCH (NUMBERS INDICATE FUSE/ SWITCH SIZE)
	FLEXIBLE CONDUIT		COMBINATION MAGNETIC STARTER AND CIRCUIT BREAKER
	CONDUIT TURNING DOWN		INDICATED NEW STARTER SIZE
	CONDUIT TURNING UP		INDICATED CIRCUIT BREAKER
	CONDUIT SEAL		MAGNETIC STARTER
	CONDUIT CAP		MOTOR (NUMBER INDICATES HP)
	BUSWAY WITH DESCRIPTION		BELL
	GROUNDING CONDUCTOR		HORN "H" OR SIREN "S"
	CABLE TRAY WITH DESCRIPTION		BUZZER
	CABLE JUNCTION BOX		PUSHBUTTON
	WALL JUNCTION BOX		MANUAL PULL STATION
	DUPLEX RECEPTACLE OUTLET		FIRE ALARM HORN (V=VISUAL SIGNAL)
	SINGLE RECEPTACLE OUTLET		PHOTOELECTRIC SMOKE DETECTOR
	DOUBLE DUPLEX RECEPTACLE OUTLET		IONIZATION SMOKE DETECTOR
	GROUND FAULT CIRCUIT INTERRUPTER		THERMAL DETECTOR
	COMPLEX OUTLET WITH WEATHERPROOF COVER		DUCT SMOKE DETECTOR (PHOTOELECTRIC)
	SPLIT WIRED DUPLEX RECEPTACLE		MAGNETIC DOOR HOLDER
	DUPLEX ISOLATED GROUND		PRESSURE SWITCH
	SPECIAL PURPOSE OUTLET - TYPE IN SPECS		FLOW SWITCH
	208V OUTLET		VALVE SUPERVISORY SWITCH
	FLOOR RECEPTACLE OUTLET		FIRE ALARM CONTROL PANEL
	USE SUPPLIED TO IDENTIFY		CEILING SPEAKER
	RECEPTACLE RACEWAY		WALL SPEAKER
	SINGLE POLE SWITCH		TELECOMMUNICATIONS OUTLET
	DOUBLE POLE SWITCH		FLOOR MOUNTED TELECOMMUNICATIONS OUTLET
	THREE-WAY SWITCH		INTERCOM OUTLET
	FOUR-WAY SWITCH		PROTECTED TRANSMISSION SYSTEM (PTS)
	WEATHERPROOF SWITCH		DATA TERMINAL CONNECTION
	KEY OPERATED SWITCH		CARD READER
	DIMMER SWITCH - NUMBER INDICATES WATTAGE		ELECTRIC DOOR STRIKE
	OCCUPANCY SENSING SWITCH		DOOR CONTACTS
	PHOTOCELL		REMOTE ACCESS PANEL
	REMOTE CONTROL SWITCH		HAND GEOMETRY UNIT
	FLUORESCENT LIGHT FIXTURE		MOTION DETECTOR
	1-CIRCUIT NUMBER		CLOSED CIRCUIT TV CAMERA
	b=SWITCH CONTROLLING FIXTURE		
	FLUORESCENT STRIP FIXTURE		
	WALL MOUNTED FLUORESCENT FIXTURE		
	CEILING MOUNTED LIGHT FIXTURE		
	WALL MOUNTED INCANDESCENT FIXTURE		
	EMERGENCY LIGHT FIXTURE		

NO	DATE	CLASS NO.	ACC	DESCRIPTION	DRAWING CHG-NO	APP- NO
ENGINEERING SERVICES						
OIL/WATER SEPARATOR DESIGN AND INSTALLATION				DRAWN S. BERTZ DESIGN S. BERTZ CHECKED S. BERTZ DATE 5-6-67 574kg		
BUDG 1	SUBMITTED			TA-60	E-00011	
STEVE JORDANO	APPROVED FOR RELEASE			TEMPERATURE UNKNOWN	7/10/67 12 REV	
ELECTRICAL LEGEND				REVIEWER: DONALD YARDMAN		
				PO BOX 1664 LOS ALAMOS, NEW MEXICO 87545 DRAWING NO. C54828 PROJECT ID 102235		





2 DISCHARGE FLOW METER  
E-1000  
INSTALLATION DETAIL

- KEYED NOTES**
- 1 PROVIDE AND INSTALL AGGRESSIVE SYSTEMS, CAT PART #S-ACE2B48Z1A533, LEVEL SENSOR, AS PER MANUFACTURER INSTRUCTIONS. PART NUMBER PROVIDES SWITCHING LEVELS AND TYPES. SEE MFG. DATA SHEET FOR DETAILS.
  - 2 PROVIDE AND INSTALL SITRANS PROBE LU ULTRASONIC LEVEL SENSOR, SIEMENS #7ML5221, AS PER MANUFACTURER INSTRUCTION.
  - 3 PROVIDE AND INSTALL SITRANS THREE INCH FLANGE ADAPTER, SIEMENS #7ML1839-1BT, AS PER MANUFACTURER INSTRUCTIONS.



**ENGINEERING SERVICES**

NO		DATE	CHG. NO.	AUC	DESCRIPTION	NO	DATE	CHG. NO.	AUC	DESCRIPTION																																																
<table border="1"> <tr> <td colspan="2">DRAWN</td> <td colspan="2">SHEET</td> </tr> <tr> <td colspan="2">DESIGN</td> <td colspan="2">CHECKED</td> </tr> <tr> <td colspan="2">DATE</td> <td colspan="2">DATE</td> </tr> </table>											DRAWN		SHEET		DESIGN		CHECKED		DATE		DATE																																					
DRAWN		SHEET																																																								
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<table border="1"> <tr> <td colspan="2">BLOG 1</td> <td colspan="2">APPROVED FOR RELEASE</td> <td colspan="2">TERMINAL CONNORS</td> <td colspan="2">SHEET</td> <td colspan="2">E-5000</td> <td colspan="2">12</td> </tr> <tr> <td colspan="2">STEVE DAMOND</td> <td colspan="2">12/1/09</td> <td colspan="2">12/1/09</td> <td colspan="2">12/1/09</td> <td colspan="2">12/1/09</td> <td colspan="2">12/1/09</td> </tr> </table>											BLOG 1		APPROVED FOR RELEASE		TERMINAL CONNORS		SHEET		E-5000		12		STEVE DAMOND		12/1/09		12/1/09		12/1/09		12/1/09		12/1/09																									
BLOG 1		APPROVED FOR RELEASE		TERMINAL CONNORS		SHEET		E-5000		12																																																
STEVE DAMOND		12/1/09		12/1/09		12/1/09		12/1/09		12/1/09																																																
<table border="1"> <tr> <td colspan="2">Los Alamos</td> <td colspan="2">1600</td> <td colspan="2">1600</td> <td colspan="2">1600</td> <td colspan="2">1600</td> <td colspan="2">1600</td> </tr> <tr> <td colspan="2">NATIONAL LABORATORY</td> <td colspan="2">REVIEWER: DONALD YARMAN</td> <td colspan="2">REVIEWER: DONALD YARMAN</td> <td colspan="2">REVIEWER: DONALD YARMAN</td> <td colspan="2">REVIEWER: DONALD YARMAN</td> <td colspan="2">REVIEWER: DONALD YARMAN</td> </tr> <tr> <td colspan="2">PROJECT ID</td> <td colspan="2">102235</td> <td colspan="2">102235</td> <td colspan="2">102235</td> <td colspan="2">102235</td> <td colspan="2">102235</td> </tr> <tr> <td colspan="2">DRAWING NO</td> <td colspan="2">C54828</td> <td colspan="2">C54828</td> <td colspan="2">C54828</td> <td colspan="2">C54828</td> <td colspan="2">C54828</td> </tr> </table>											Los Alamos		1600		1600		1600		1600		1600		NATIONAL LABORATORY		REVIEWER: DONALD YARMAN		REVIEWER: DONALD YARMAN		REVIEWER: DONALD YARMAN		REVIEWER: DONALD YARMAN		REVIEWER: DONALD YARMAN		PROJECT ID		102235		102235		102235		102235		102235		DRAWING NO		C54828		C54828		C54828		C54828		C54828	
Los Alamos		1600		1600		1600		1600		1600																																																
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- 1 FUTURE CONNECTION TO ELECTRICAL POWER METER VIA MODBUS OVER RS-485
- 2 ETHERNET CONNECTION TO YELLOW NET. CONSULT WITH P&A DESIGN TEAM FOR ASSIGNMENT OF IP ADDRESS AND BACNET ADDRESS.
- 3 CM NET FOR FUTURE CONNECTION TO BUILDING AUTOMATION NETWORK
- 4 CONSULT WITH P&A TEAM FOR NETWORK ADDRESS SETTINGS
- 5 18 AWG X 2 CONDUCTOR WITH SHIELD CABLE RIN FROM CONTROLLER BACK AND INSULATE AT LEVEL PROBE END.
- 6 ULTRASONIC LEVEL PROBE — LOCATED AS SHOWN ON TANK INSTALLATION DETAILS.
- 7 AUTOMATED LOGIC CONTROLLER WITH EXNADER BOARD, PART NUMBERS ME-1GR25 AND MX440
- 8 DEVICES 24VAC POWER SUPPLY, PART NUMBER FUNCTIONAL ENCLOSED PSHANB10
- 9 ULTRASONIC LEVEL TRANSMITTER — SEE INSTALLATION DETAIL FOR PARTS NUMBERS ON SHEET E-6001.
- 10 LOCATE CONTROLLERS IN NEMA 1 BOX NEAR LEVEL ALARM PANEL. LOCATED POWER SUPPLY OUTSIDE AND ADJACENT TO THE CONTROL PANEL. LOCATE EXNADER BOARD AND LOGIC CONTROLLER IN NEMA 1-1816MP. LOCATE ENCLOSURE AS SHOWN ON SHEET E-1000.

[illegible]

KEYED NOTES

- 1 PROVIDE AND INSTALL 1 NEW WESTINGHOUSE 20 AMP CIRCUIT BREAKER IN PANEL LP-3 CIRCUIT LOCATION 18 IN RAIL 222. BREAKER CAT. #B41020. LABEL BREAKER AS "LEVEL ALARM STATION". "DO NOT TURN OFF". LABEL BACKGROUND COLOR SHALL BE RED WITH WHITE LETTERS. MOUNT LABEL ON INSIDE OF DOOR ADJACENT TO BREAKER #18 IN PANEL.

LIGHTING PANEL "65-1-LP3"									
LOCATION: 7th FLOOR, 1 ROOM 122									
SERVED BY: 60.0 THS									
MARKS: 100 AMP/MS									
VOLTAGE: 200V/120V/3PH/4W									
SHORT CIRCUIT CAPACITY: 100,000 SYMMETRICAL									
MOUNTING SERVICE									
SERVICES	OR	LTD	RPT	PWR	QXT	PHASE	QXT	LTD	RPT
MAIN	100				1	A	2	1440	20
					3	B	4	1440	20
					5	C	6	1440	20
	20			1440	7	A	8	1440	20
					9	B	10	1440	20
	20			1440	11	C	12	1440	20
					13	A	14	1440	20
	20			1440	15	B	16	1440	20
					17	C	18	1440	20
EMERGENCY LIGHTS	20	1440		19	A	20		1440	20
OUTSIDE RECEPTION				21	B	22			
				23	C	24			
				25	A	26			
				27	B	28			
				29	C	30			
TOTAL CONNECTED PHASE VOLT-AMPS: A: 7360 B: 7200 C: 5620									
CONNECTED									
LIGHTING LOAD @ 125%: 1800 VA									
RECEPTION LOAD @ 125%: 1440 VA									
POWER LOAD @ 100%: 1800 VA									
TOTAL SPARE CAPACITY: 4172 VA									
TOTAL DESIGNED LOAD: 25032 VA									
85.9 AMPS									

PANEL SCHEDULE - LP-3



NO	DATE	CLASS	REV	ADC	DESCRIPTION	DWG	DSGN	CHKD	SUB	APP
ENGINEERING SERVICES										
OIL/WATER SEPARATOR										
DESIGN AND INSTALLATION										
PANEL SCHEDULE - LP3										
BLDG 1										
STOVE DAMAGED										
APPROVED FOR RELEASE										
TERRANCE CONNORS										
DATE 5-8-08										
SHEET										
E-7000										
12 OF 12										
Los Alamos NATIONAL LABORATORY										
P.O. Box 1663, Los Alamos, NM 87545										
REVIEWER: DONALD YARMAN										
CLASSIFICATION: U										
PROJECT ID 102235										
DRAWING NO C54828										
REV 0										