

46



NEW MEXICO  
ENVIRONMENT DEPARTMENT



SUSANA MARTINEZ  
Governor

JOHN A. SANCHEZ  
Lieutenant Governor

*Harold Runnels Building*  
1190 South St. Francis Drive (87505)  
P.O. Box 5469, Santa Fe, New Mexico 87502-5469  
Phone (505) 827-2900 Fax (505) 827-2965  
www.env.nm.gov

RYAN FLYNN  
Cabinet Secretary

BUTCH TONGATE  
Deputy Secretary

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

June 22, 2016

Ms. Jody M. Pugh, Assistant Manager  
National Security Missions  
NNSA/Los Alamos Field Office  
3747 West Jemez Road  
Los Alamos, NM 87544

Mr. John P. McCann, Acting Division Leader  
Environmental Protection & Compliance Division  
Los Alamos National Laboratory LLC  
P.O. Box 1663, K490  
Los Alamos, NM 87545

**RE: Draft Discharge Permit Renewal and Modification, DP-857,  
Los Alamos National Laboratory Domestic and Industrial Wastewater Facilities**

Dear Ms. Pugh and Mr. McCann:

Notice is hereby given pursuant to Subsection H of 20.6.2.3108 NMAC that Ground Water Discharge Permit, DP-857, to the United States Department of Energy (DOE) and the Los Alamos National Security, LLC (LANS), has been proposed for approval (copy enclosed). The New Mexico Environment Department (NMED) will publish notice of the availability of the draft Discharge Permit in the near future and will forward a copy of the notice to you.

Prior to making a final ruling on the proposed Discharge Permit, NMED will allow 30 days from the date the public notice is published during which time written comments can be submitted and/or a public hearing requested. Comments and/or hearing requests may be submitted by any interested person, including the Discharge Permit applicant. Written comments and/or hearing requests must be submitted to the Ground Water Quality Bureau at the address above and shall set forth the reasons why a hearing is requested. A hearing will be held only if hearing requests are received from the public and/or the Discharge Permit applicant during the 30-day comment period and NMED determines there is substantial public interest in the proposed Discharge Permit. Hearings are presided over by the NMED Secretary or a hearing officer appointed by the Secretary.

37633



Ms. Pugh and Mr. McCann, DP-857

June 22, 2016

Page 2

Please review the enclosed draft Discharge Permit carefully to understand your responsibilities pursuant to the Discharge Permit. Please be aware that this Discharge Permit may contain conditions that require the permittee to implement operational, monitoring or closure actions by a specified deadline. Please note any inaccuracies or concerns, and submit any comments to NMED Ground Water Quality Bureau.

A copy of the Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC, is available at [http://www.nmcpr.state.nm.us/nmac/\\_title20/T20C006.htm](http://www.nmcpr.state.nm.us/nmac/_title20/T20C006.htm).

If you have any comments, questions, or concerns, please contact me at (505) 827-2996. If written comments and/or a written request for hearing are not received during the public comment period, the draft Discharge Permit will become final. Thank you for your cooperation during the review process.

Sincerely,



Gerald Knutson  
Environmental Scientist & Specialist A

enc: Draft Discharge Permit, DP-857 Renewal and Modification, with Attachment 1 and Attachment 2

cc: Steven Huddleson, NMED GWQB (electronic copy)  
Greg Huey, NMED GWQB (electronic copy)  
Gerald Knutson, NMED GWQB (electronic copy)  
James Hogan, NMED SWQB (electronic copy)  
Sarah Holcomb, NMED SWQB (electronic copy)  
Erin Trujillo, NMED SWQB (electronic copy)  
John Kieling, NMED HWB (electronic copy)  
Steven Yanicak, NMED-DOE-Oversight Bureau (electronic copy)  
Michael T. Brandt, ADESH, [mtbrandt@lanl.gov](mailto:mtbrandt@lanl.gov) (electronic copy)  
Michael Saladen ENV-CP, [saladen@lanl.gov](mailto:saladen@lanl.gov) (electronic copy)  
Robert Beers, [bbeers@lanl.gov](mailto:bbeers@lanl.gov) (electronic copy)

**GROUND WATER DISCHARGE PERMIT RENEWAL AND MODIFICATION**  
**Los Alamos National Laboratory**  
**Domestic and Industrial Wastewater Facilities, DP-857**

**I. INTRODUCTION**

The New Mexico Environment Department (NMED) issues this Discharge Permit Renewal and Modification (Discharge Permit), DP-857, to the United States Department of Energy (DOE) and the Los Alamos National Security, LLC (LANS) (collectively Permittees) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978 §§ 74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC.

NMED's purpose in issuing this Discharge Permit, and in imposing the requirements and conditions specified herein, is to control the discharge of water contaminants from the Los Alamos National Laboratory (LANL) domestic and industrial wastewater treatment, reclamation, and disposal facilities (facilities) into ground and surface water, so as to protect ground and surface water for present and potential future use as domestic and agricultural water supply and other uses, and to protect public health. In issuing this Discharge Permit, NMED has determined that the requirements of Subsection C of Section 20.6.2.3109 NMAC have been or will be met.

The activities which produce the discharges, the location of the discharges, and the quantity, quality, and flow characteristics of the discharges are briefly described as follows:

Up to 850,000 gallons per day (gpd) of domestic and industrial wastewater are received at LANL's wastewater treatment and reclamation facilities at the Technical Area (TA)-46 Sanitary Wastewater System (SWWS) and the TA-3 Sanitary Effluent Reclamation Facility (SERF). Treated domestic and industrial wastewater is discharged to three outfalls or to the TA-60 Sigma Mesa Evaporation Basins (SMEB) for disposal by evaporation. The outfall discharges are also separately authorized under a federal National Pollutant Discharge Elimination System (NPDES) Permit (Permit #NM0028355). Reclaimed wastewater is used as make-up water for cooling towers and boilers, for landscape irrigation at the SWWS, and for the SWWS wash water and process water.

The modification of this Discharge Permit authorizes an increase of domestic and industrial wastewater that is received by SWWS and SERF (combined) from 600,000 gpd to 850,000 gpd; an increase of the SERF treatment capacity from 140,000 gpd to 600,000 gpd; the addition of a new synthetically lined effluent storage impoundment at the SWWS; the expansion of the double synthetically lined evaporative impoundments at the SMEB; and the installation of mechanical evaporators at the SMEB. The modification of this Discharge Permit also allows the SWWS, the SERF, and the SMEB to receive industrial wastewater such as cooling tower and boiler blowdown water; wastewater produced during the drilling, development, rehabilitation, pump testing, and sampling of groundwater monitoring wells at various monitoring sites within LANL; treated groundwater from various remediation sites within LANL; and wastewater from other LANL related sources that meets LANL's internal pretreatment controls or all applicable groundwater standards. The modification also includes discharges from the TA-3 Power Plant Boiler and Reverse Osmosis Treatment Unit.

The discharges may contain water contaminants that are above the standards of Section 20.6.2.3103 NMAC and may contain toxic pollutants as defined in Section 20.6.2.7.WW NMAC.

The SWWS is located in TA-46; approximately 2.5 miles south of Los Alamos, in Section 26, Township 19N, Range 06E, Los Alamos County. The SERF is located in TA-3, approximately 1.5 miles southwest of Los Alamos, in Section 16, Township 19N, Range 06E, Los Alamos County. The SMEB is located in TA- 60, approximately 1.5 miles south of Los Alamos, in Section 22, Township 19N, Range 06E, Los Alamos County. Outfalls 001 in TA-3, 03A027 in TA-3, and 13S in TA-46 are located within LANL, in Sections 16 and 26, Township 19N, Range 06E, Los Alamos County.

The depth to the alluvial aquifer ranges from 0 to 65 feet below ground surface (bgs). The depth to the intermediate aquifer ranges from 330 to 400 feet bgs. The depth to the regional aquifer ranges from 828 to 1,312 feet bgs. The total dissolved solids (TDS) concentration in the alluvial aquifer ranges from approximately 115 to 3,800 milligrams per liter (mg/L), with an average of 306 mg/L. The TDS concentration in the intermediate aquifer is approximately 282 mg/L. The TDS concentration in the regional aquifer is approximately 150 mg/L.

The original Discharge Permit was issued on July 20, 1992, subsequently renewed on January 7, 1998, and modified on October 1, 2002. The current application for renewal and modification consists of the materials submitted by the Permittees dated August 27, 2002, July 2, 2010, and December 20, 2012. NMED based its technical review upon the application materials and materials contained in the administrative record prior to issuance of this Discharge Permit. The discharge shall be managed in accordance with all conditions and requirements of this Discharge Permit.

Pursuant to Section 20.6.2.3109 NMAC, NMED reserves the right to require a Discharge Permit Modification in the event NMED determines that the requirements of 20.6.2 NMAC are being or may be violated or the standards of Section 20.6.2.3103 NMAC are being or may be violated. This may include a determination that structural controls or management practices approved under this Discharge Permit are not protective of groundwater quality, and that more stringent requirements to protect groundwater quality may be required by NMED. The Permittees may be required to implement abatement of water pollution and remediate groundwater quality.

Issuance of this Discharge Permit does not relieve the Permittees of the responsibility to comply with the WQA, WQCC Regulations, and any other applicable federal, state, and local laws, regulations, zoning requirements, and nuisance ordinances.

This Discharge Permit includes Attachment 1 (or most current version of WQCC Regulation 20.6.2.3103 NMAC) and Attachment 2 (most current version of NMED Risk Assessment Guidance for Site Investigations and Remediation Table A-1, Tap Water) which are incorporated herein as enforceable parts of this Discharge Permit.

The following general abbreviations are used in this Discharge Permit:

Abbreviation	Explanation	Abbreviation	Explanation
CFR	Code of Federal Regulations	NO <sub>3</sub> -N	nitrate-nitrogen
Cl	chloride	NPDES	National Pollutant Discharge Elimination System
EPA	United States Environmental Protection Agency	NTU	nephelometric turbidity units
gpd	gallons per day	RO	Reverse Osmosis
mg/L	milligrams per liter	TDS	total dissolved solids
mL	milliliters	TKN	total Kjeldahl nitrogen
NMAC	New Mexico Administrative Code	total nitrogen	Sum of TKN + NO <sub>3</sub> -N
NMED	New Mexico Environment Department	UPC	Uniform Plumbing Code
NMSA	New Mexico Statutes Annotated		

The following abbreviations for the facilities are used in this Discharge Permit:

Abbreviation	Facility and location
DWWHT	Domestic Wastewater from Holding Tanks
LANL	Los Alamos National Laboratory
SCC	Strategic Computing Complex located at TA-3
SERF	Sanitary Effluent Reclamation Facility located at TA-3
SMEB	Sigma Mesa Evaporative Basins located at TA-60
SWWS	Sanitary Wastewater System Treatment Facility located at TA-46
TA	Technical Area as designated by LANL

## II. FINDINGS

In issuing this Discharge Permit, NMED finds:

1. The Permittees are discharging effluent or leachate from the Facilities so that such effluent or leachate may move directly or indirectly into groundwater within the meaning of Section 20.6.2.3104 NMAC.
2. The Permittees are discharging effluent or leachate from the Facilities so that such effluent or leachate may move into groundwater of the State of New Mexico which has an existing concentration of 10,000 mg/L or less of TDS within the meaning of Subsection A of Section 20.6.2.3101 NMAC.
3. The discharge from the Facilities are not subject to any of the exemptions of Section 20.6.2.3105 NMAC.

### III. AUTHORIZATION TO DISCHARGE

The Permittees are authorized to treat, reuse, and discharge up to 250,000 gpd of domestic wastewater and 600,000 gpd of industrial wastewater (total discharge up to 850,000 gpd) from various facilities located throughout the Laboratory.

The combined domestic and industrial wastewater treatment facilities and discharge locations include:

- The SWWS, which can discharge to the SERF and outfalls 001 and 13S under NPDES Permit #NM0028355; and
- The SERF, which can discharge to the Power Plant Boiler, the SCC Cooling Towers, the SMEB, the SWWS, and outfall 001 under NPDES Permit #NM0028355.

Industrial wastewater facilities and discharge locations include:

- The SMEB, which discharges via evaporation;
- The SCC Cooling Tower(s), which can discharge to outfalls 03A027 and 001 under NPDES Permit #NM0028355, the SWWS, and the SERF; and
- The Power Plant Boiler and RO Treatment Unit, which can discharge to outfall 001 under NPDES Permit #NM0028355, and the SWWS.

The facilities are further described as follows:

#### TA-46 Sanitary Wastewater System Treatment Plant (SWWS)

The SWWS treatment plant is designed to treat up to 600,000 gpd of wastewater. Domestic and industrial wastewater is conveyed to the SWWS treatment plant via a collection system or transported by truck and discharged to the collection system at locations approved by NMED. Treated groundwater from remediation sites can also be conveyed to the SWWS synthetically lined effluent storage impoundment(s) via a pipe line. The treatment system employs screening, grit removal, flow equalization, oxic/anoxic activated sludge biological treatment, gravity solids separation (clarification), mixed oxidant (MIOX) disinfection, and chemical dechlorination. Treated wastewater from the SWWS is stored in a synthetically lined effluent storage impoundment(s) and then transferred or discharged to various locations (discussed below). This permit authorizes the installation of a second synthetically lined effluent storage impoundment at the SWWS.

Domestic wastewater, industrial wastewater, and groundwater discharged to and treated by the SWWS must conform to the most current version of LANL's internal pretreatment controls. Treated groundwater from remediation sites discharged to the synthetically lined effluent storage impoundment(s) must meet all applicable groundwater standards. The sources of wastewater discharged to the SWWS include:

- Domestic and industrial wastewater from LANL buildings located in various Technical Areas connected to the collection system;
- Domestic wastewater from Los Alamos County connected to the collection system including the Royal Crest Mobile Home Park;
- DWWHT(s) and portable toilets located throughout LANL;

- Septage from septic tanks located throughout LANL;
- Water from the drilling, development, rehabilitation, pump testing, and sampling of groundwater monitoring wells that does not meet on-site land application criteria but is individually authorized for discharge to the SWWS by NMED;
- Treated groundwater from remediation system(s) authorized for discharge to the SWWS synthetically lined effluent storage impoundment(s) that meet all applicable groundwater standards, and with NMED written approval;
- Industrial wastewater from the Power Plant Boiler blow-down activities and the RO treatment unit; and
- Other LANL related domestic and industrial sources of wastewater that meet LANL's internal pretreatment controls, and with NMED written approval.

Treated wastewater from the SWWS is authorized to be transferred or discharged to the following locations:

- Transferred to the SERF for additional treatment;
- Discharged to the TA-3 500,000 gallon storage tank (Reuse Tank), which discharges to NPDES outfall 001 into Sandia Canyon;
- Discharged to NPDES outfall 13S into Cañada Del Buey; and
- Re-used for wash, process, and irrigation water at the SWWS.

Solids/sludge generated at the SWWS are dewatered in synthetically lined drying beds and may be composted for beneficial use within LANL or transported off-site for disposal.

#### **TA-3 Sanitary Effluent Reclamation Facility (SERF)**

Treated wastewater from the SWWS and wastewater from authorized industrial sources listed below are transferred to the SERF for additional treatment. The SERF is currently designed to treat up to 600,000 gpd of wastewater using microfiltration and RO. The sources of wastewater transferred to the SERF include the following:

- Treated wastewater from the SWWS;
- Industrial wastewater from SCC cooling tower(s) blow-down activities; and
- Other LANL related industrial sources with NMED written approval.

Blended high quality wastewater (combination of RO product water from the SERF and treated wastewater from the SWWS) is authorized to be transferred or discharged to the following locations:

- Transferred to the SCC for cooling tower(s) make up water;
- Transferred to the Power Plant for boiler make up water; and
- Discharged to NPDES outfall 001.

RO reject wastewater from the SERF is discharged to the SMEB for disposal by evaporation or to the SWWS. RO product water from the SERF can be discharged to the SMEB for disposal as part of testing or maintenance activities. Solids generated from the microfiltration process at the SERF are dewatered in a plate press and transported off-site for disposal.

### TA-60 Sigma Mesa Evaporative Basins (SMEB)

Industrial wastewater is transferred to the SMEB from the SERF via pipeline. Wastewater as listed below and other LANL related sources of industrial wastewater can be transported by truck or other means to the SMEB with NMED written approval. The SMEB currently consists of five evaporative impoundments equipped with double synthetic liners with leak detection systems. The SMEB can be expanded to six evaporation impoundments under this Discharge Permit. Mechanical evaporators, to supplement the evaporation of wastewater, can be installed under this Discharge Permit. The sources of industrial wastewater discharged to the SMEB include:

- RO reject water from the SERF;
- RO product water from the SERF (as necessary for maintenance at the SERF);
- Wastewater from the drilling, development, rehabilitation, pump testing, and sampling of groundwater monitoring wells that does not meet on-site land application criteria but is authorized for discharge to the SMEB by NMED; and
- Other LANL related industrial and groundwater sources with NMED written approval.

### TA-3 SCC Cooling Tower(s) Blow-down and TA-3 Power Plant Boiler Blow-down

Potable water and/or blended high quality wastewater from the SERF is used as make-up water at the SCC Cooling Tower(s) and/or the Power Plant Boiler. Concentrated water from the boiler and the cooling tower(s) is routinely "blown-down" by discharging spent water to NPDES outfalls 001 and/or 03A027 for discharge into Sandia Canyon. In accordance with this Discharge Permit, blow-down water from the Power Plant Boiler and the Power Plant RO Treatment Unit may be directed to the SWWS for treatment. Blow-down water from the SCC Cooling Tower(s) may be directed to the SWWS and the SERF for treatment and re-use.

All discharges to outfalls authorized by this Discharge Permit from these Facilities are made pursuant to NPDES Permit NM0028355 (issued by EPA and certified by NMED) and this Discharge Permit.

[20.6.2.3104 NMAC, Subsection C of 20.6.2.3106 NMAC, Subsection C of 20.6.2.3109 NMAC]

## IV. CONDITIONS

The Permittees are authorized to discharge water contaminants from the Facilities subject to the conditions set forth in this Section. The Permittees shall comply fully with the conditions of this Discharge Permit. These conditions are enforceable by NMED under NMSA 1978, § 74-6-10.

### OPERATIONAL PLAN

#### *General Operational Terms and Conditions*

1. The Permittees shall implement the following operational plan to ensure compliance with Sections 20.6.1 and 20.6.2 NMAC.

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC]

2. The Permittees shall operate in a manner such that standards and requirements of Sections 20.6.2.3101 and 20.6.2.3103 NMAC are not violated.

[20.6.2.3101 NMAC, 20.6.2.3103 NMAC, Subsections B and C of 20.6.2.3109 NMAC]

***Operational Actions with Implementation Deadlines***

3. Prior to modification, expansion, decommissioning, or alteration of any facility authorized to discharge under this Discharge Permit, the Permittees shall submit to NMED a written notification detailing the proposed change. Such situations include without limitation:
  - Construction of an additional double synthetically lined evaporative impoundment at the SMEB;
  - Construction of an additional synthetically lined storage impoundment at the SWWS;
  - Significant alterations to the treatment processes at the SWWS or the SERF that could affect treated wastewater quality; and
  - Installation of additional mechanical evaporators at the SMEB.

The notification shall include design plans and specifications. NMED will review the proposed changes for conformance with the activities authorized by this Discharge Permit, the WQCC Regulations, and the WQA. Changes that conform will be approved, or approved with conditions by NMED. Should NMED determine that the proposed changes do not conform to the activities authorized by this Discharge Permit and/or constitute a modification of the Permittee's Discharge Plan, NMED will inform LANL that a Discharge Permit modification shall be required in order to proceed with the proposed change.

Record drawings of completed new construction showing the "as-built" condition of the facility(s) shall be submitted to NMED after LANL's receipt of record drawings showing the completion of a construction project subject to this condition.

Construction plans and specifications, supporting design calculations, and record drawings for all projects subject to this condition shall comply with the New Mexico Engineering and Surveying Practice Act (Chapter 61, Article 23 NMSA 1978) as well as applicable DOE and LANL Engineering Standards.

[NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC, 20.6.2.1202 NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]

4. Within 180 days following the effective date of this Discharge Permit (by Date), the Permittees shall measure the thickness of the settled solids in the SWWS synthetically lined effluent storage impoundment and report the results of the solids depth measurements to NMED.

The Permittees shall measure the thickness of settled solids in accordance with the following procedure or submit, for NMED approval, an alternate method to measure the thickness of

settled solids:

- a) The total surface area of the storage impoundment shall be divided into nine equal sub-areas.
- b) A settled solids measurement device (core sampler) shall be utilized to obtain one settled solids thickness measurement (to the nearest half-foot) per sub-area.
- c) The nine settled solids measurements shall be averaged.

[NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC, 40 CFR Part 503]

5. In the event the average solids accumulation in the SWWS synthetically lined effluent storage impoundment exceeds one-third of the maximum liquid depth in the impoundment, the Permittees shall propose a plan for the removal and disposal of the solids from the storage impoundment. If required, the solids removal and disposal plan shall be submitted to NMED for approval within 120 days following the completion of the measurement of the settled solids, and shall include the following:
  - a) A method for removal of the solids to a depth of less than six inches throughout the storage impoundment in a manner that is protective of the impoundment liner.
  - b) A description of how the solids will be contained, transported, and disposed of in accordance with all local, state, and federal regulations, including 40 CFR Part 503.
  - c) A schedule for completion of the solids removal and disposal project.

Upon NMED approval of the solids removal and disposal plan, or approval of the plan with conditions, the Permittees shall implement the solids removal and disposal plan.

[NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC, 40 CFR Part 503]

***Facility Operational Conditions***

6. Treated wastewater discharged after the final treatment process at the SWWS shall not exceed the following limitation:

**Total Nitrogen: 10 mg/L**

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC]

7. The Permittees shall maintain adequate access control around the SWWS, SERF and SMEB facilities to prevent access by the general public and animals. The access controls shall be maintained throughout the term of this Discharge Permit.

[NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC]

8. The Permittees shall maintain signs indicating that the wastewater at the SWWS, SERF, SMEB facilities and at NPDES outfalls 001, 13S and 03A027 is not potable. Signs shall be posted at the Facilities' entrances and outfalls where there is potential for public contact with

wastewater. All signs shall be printed in English and Spanish, and they shall remain visible and legible for the term of this Discharge Permit.

[NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC]

9. The Permittees shall maintain the impoundment liners at the SWWS and the SMEB in such a manner as to avoid conditions which could affect the structural integrity of the impoundments or impoundment liners. Such conditions include or may be characterized by the following (without limitation):

- erosion damage;
- animal burrows or other damage;
- the presence of vegetation including aquatic plants, weeds, woody shrubs, or trees growing within five feet of the top inside edge of a sub-grade impoundment, within five feet of the toe of the outside berm of an above-grade impoundment, or within the impoundment itself;
- the presence of large debris or large quantities of debris in the impoundment;
- evidence of seepage;
- evidence of berm subsidence; and
- high wind events that could affect the SMEB.

Vegetation growing around the impoundments shall be routinely controlled by mechanical removal in a manner that is protective of the impoundments liners.

The Permittees shall visually inspect the impoundments and surrounding berms on a monthly basis to ensure proper maintenance. In the event that inspection reveals any evidence of damage that threatens the structural integrity of an impoundment's berm or liner, or that may result in an unauthorized discharge, the Permittees shall implement the contingency plan set forth in this Discharge Permit.

The Permittees shall inspect the leak collection sumps at the SMEB for the presence of any collected liquid on a monthly basis. In the event that standing liquid is detected in any of the sumps at an elevation above the four inch horizontal drain line, the Permittees shall follow the contingency plan set forth in this Discharge Permit.

[NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC]

10. The Permittees shall preserve a minimum of two feet of freeboard between the liquid level in the SWWS synthetically lined effluent storage impoundment(s) and the elevation of the top of the impoundment(s) liner. In the event that the Permittees determine that two feet of freeboard cannot be preserved in an impoundment, the Permittees shall implement the contingency plan set forth in this Discharge Permit.

[NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC]

11. The Permittees shall preserve a minimum of one foot of freeboard between the liquid level in the SMEB synthetically lined evaporation impoundments and the elevation of the top of the impoundment liners. In the event that the Permittees determine that one foot of freeboard cannot be preserved in the impoundments, the Permittees shall implement the contingency plan set forth in this Discharge Permit.

[NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC]

12. The Permittees shall properly manage all solids generated at the SWWS and the SERF to maintain effective operation by removing solids as necessary in accordance with accepted process control methods. Solids removed from the Facilities shall be contained, transported, and disposed of offsite or beneficially reused in accordance with all local, state, and federal regulations. The Permittees shall maintain records of solids disposal at a location accessible for review and inspection by NMED upon request.

[NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC]

13. The Permittees shall utilize operators, certified by the State of New Mexico at the appropriate level, to operate the wastewater collection, treatment, and disposal systems. The operations and maintenance of all or any part of the wastewater collection, treatment, and disposal systems shall be performed by, or under the direct supervision of, a certified operator.

[NMSA 1978, § 74-6-5.D; Subsection B of 20.6.2.3109 NMAC, 20.7.4 NMAC]

### MONITORING AND REPORTING

#### *General Monitoring and Reporting Terms and Conditions*

14. The Permittees shall conduct the monitoring, reporting, and other related requirements listed below in accordance with the methods, procedures, and other conditions listed below.

[NMSA 1978, § 74-6-5.D; Subsections B and C of 20.6.2.3109 NMAC, 20.6.2.3107 NMAC]

15. **METHODOLOGY** – Unless otherwise approved in writing by NMED, the Permittees shall conduct sampling and analysis in accordance with the most recent edition of the following documents:

- a) American Public Health Association, Standard Methods for the Examination of Water and Wastewater (18<sup>th</sup>, through current Editions);
- b) U.S. Environmental Protection Agency, Methods for Chemical Analysis of Water and Waste;
- c) U.S. Geological Survey, Techniques for Water Resource Investigations of the U.S. Geological Survey;
- d) American Society for Testing and Materials, Annual Book of ASTM Standards, Part 31. Water;

- e) U.S. Geological Survey, et al., National Handbook of Recommended Methods for Water Data Acquisition;
- f) EPA Publication SW-846, or the latest methods for monitoring pursuant to Resource Conservation and Recovery Act regulations published in the *Federal Register*; and
- g) Methods of Soil Analysis: Part 1. Physical and Mineralogical Methods; Part 2. Microbiological and Biochemical Properties; Part 3. Chemical Methods, American Society of Agronomy

[Subsection B of 20.6.2.3107 NMAC]

16. The Permittees shall submit quarterly monitoring reports to NMED for the most recently completed quarterly period by the 1<sup>st</sup> of February, May, August, and November of each year.

Quarterly monitoring shall be performed during the following periods and submitted as follows:

- January 1<sup>st</sup> through March 31<sup>st</sup> (first quarter) – due by May 1<sup>st</sup>;
- April 1<sup>st</sup> through June 30<sup>th</sup> (second quarter) – due by August 1<sup>st</sup>;
- July 1<sup>st</sup> through September 30<sup>th</sup> (third quarter) – due by November 1<sup>st</sup>; and
- October 1<sup>st</sup> through December 31<sup>st</sup> (fourth quarter) – due by February 1<sup>st</sup>.

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]

***Monitoring Actions with Implementation Deadlines***

17. Within 180 days following the effective date of this Discharge Permit (by Date), the Permittees shall sample the soil within ten feet of the SMEB northeast and northwest synthetically lined impoundments. The Permittees shall collect one composite soil sample consisting of six soil core samples at a depth of 0 to 6 inches from locations approved by NMED. The composite soil sample shall be analyzed for Inorganic Contaminants and Radioactivity listed in Attachment 1 of this Discharge Permit.

Samples shall be properly prepared, preserved, and transported to an independent environmental laboratory accredited under the National Environmental Laboratory Accreditation Program and analyzed in accordance with the methods authorized in the Discharge Permit. Analytical results shall be submitted to NMED in the quarterly monitoring report.

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]

***Facility Monitoring Conditions***

18. The Permittees shall implement the flow measurements set forth accordance with the following conditions.

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC]

19. The Permittees shall measure the totalized, average daily, and peak daily volume of raw wastewater (influent) discharged to the SWWS from the collection system each month using a primary measuring device (flume or weir equipped with head sensing and data logging mechanisms) located prior to the entrance works. The totalized, average daily, and peak daily discharge volumes received for each month shall be submitted to NMED in the quarterly monitoring reports.

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC]

20. The Permittees shall measure the totalized, average daily, and peak daily volume wastewater discharged from NPDES outfall 001 and NPDES outfall 13S each month using a primary measuring device (flume or weir equipped with head sensing and data logging mechanisms). The totalized, average daily, and peak daily discharge volumes discharged from the NPDES outfall 001 and NPDES outfall 13S each month shall be submitted to NMED in the quarterly monitoring reports. For any flow measurement location where no discharge occurs for a complete calendar month, the Permittees shall report: "no discharge."

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC]

21. The Permittees shall measure the volume of wastewater discharged or transferred to the following locations each month using totalizing flow measurement devices or by calculation where noted:
- Treated wastewater discharged from the SWWS, synthetically lined treated wastewater storage impoundment(s) to the SERF and the Reuse Tank;
  - Treated wastewater from the SWWS and industrial wastewater from other sources transferred to the SERF;
  - Blended wastewater transferred from the SERF to the SCC Cooling Towers;
  - Blended wastewater transferred from the SERF to the Power Plant Boiler;
  - Blended wastewater discharged, by calculation, from SERF to NPDES outfall 001;
  - RO reject and process wastewater discharged from the SERF to the SMEB; and
  - SCC Cooling Towers blow-down wastewater discharged to NPDES outfall 03A027, NPDES outfall 001, SWWS, and SERF.

The Permittees shall obtain readings from the total flow measurement devices on a monthly basis and calculate the monthly discharge volume for each location. The monthly meter readings and calculated monthly discharge volumes shall be submitted to NMED in the quarterly monitoring reports. For any flow measurement location where no discharge occurs for a complete calendar month, the Permittees shall report: "no discharge."

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC]

22. Flow measurement devices located at the SWWS influent, the SERF blended wastewater transfer, the SERF RO reject, SCC Cooling Towers blow-down, NPDES outfall 001, and NPDES outfall 13S shall be capable of having their accuracy ascertained under actual working (field) conditions. A field calibration method or an alternative method shall be developed for each flow measurement device and that method shall be used to check the accuracy of each respective device. Properly installed hydraulic structure primary flow measurement devices do not need to be calibrated, but shall serve as the calibration instrument for head sensing and data logging mechanisms. Field calibrations shall be performed upon repair or replacement of a flow measurement device, and, at a minimum, on an annual basis.

Flow measurement devices shall be calibrated to within plus or minus 10 percent of actual flow, as measured under field conditions. Field calibrations or alternative methods shall be performed by an individual knowledgeable in flow measurement and in the installation and operation of the particular device in use. A written flow measurement device calibration report shall be prepared for each device at the calibration frequency required. The flow measurement device calibration report shall include the following information:

- a) The location and flow measurement device identification.
- b) The method of flow measurement device field calibration employed.
- c) The measured accuracy of each flow measurement device prior to adjustment indicating the positive or negative offset as a percentage of actual flow as determined by an in-field calibration check.
- d) When an adjustment is necessary, the measured accuracy of each flow measurement device following adjustment indicating the positive or negative offset as a percentage of actual flow.
- e) Any flow measurement device repairs made during the previous year or during field calibration.

The Permittees shall maintain records of flow measurement device calibrations at a location accessible for review by NMED upon request.

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC]

23. The Permittees shall visually inspect all flow measurement devices on a routine basis for evidence of malfunction. If a visual inspection indicates a flow measurement device is not functioning as required by this Discharge Permit, the Permittees shall repair or replace the device within 30 days of discovery and perform a field calibration in accordance with the requirements of this Discharge Permit.

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC]

24. The Permittees shall maintain a monthly log detailing the transfer of domestic wastewater and septage from all DWWHT(s), portable toilets, and septic tanks located within LANL to the SWWS. The log shall include the following information:
- The specific origin of the wastewater and septage (e.g. DWWHT, portable toilet, or septic

- tank designation);
- The estimated volume of wastewater and septage; and
- Location of disposal within the SWWS collection system.

The permittees shall maintain the monthly domestic wastewater transfer logs at a location accessible for review by NMED upon request.

[NMSA 1978, § 74-6-5.D, 20.6.2.3107 NMAC, Subsections B and C of 20.6.2.3109 NMAC]

25. The Permittees shall maintain a monthly log detailing the transfer of wastewater to the SWWS, SERF, and SMEB from the following sources:
- Monitoring well drilling, development, and rehabilitation wastewater;
  - Monitoring well sampling purge water;
  - Monitoring well pump test water;
  - Treated groundwater from remediation system(s) as approved by NMED; and
  - Other LANL related sources as approved by NMED.

The log shall include the following information:

- The specific origin of the wastewater (e.g. well designation or remediation system);
- Type of wastewater (e.g. drilling, development, rehabilitation, pump testing, purge, or treated groundwater);
- A brief summary of the wastewater characteristics, noting parameters that exceed the limits listed in Attachment 1 and Attachment 2 of this Discharge Permit (when available);
- The estimated or metered volume of wastewater; and
- The facility (SWWS, SERF, or SMEB) to which the wastewater was transferred and the manner of transfer.

A copy of each monthly wastewater transfer log for the monitoring period shall be submitted to NMED in the quarterly monitoring reports. When no transfer occurs for a complete calendar month, the Permittees shall report: "no transfer".

[NMSA 1978, § 74-6-5.D, 20.6.2.3107 NMAC, Subsections B and C of 20.6.2.3109 NMAC]

26. The Permittees shall perform quarterly groundwater sampling in the following alluvial monitoring well and analyze the samples for dissolved TKN, NO<sub>3</sub>-N, TDS, and Cl:
- SCA-3, intended to be located hydrologically downgradient of NPDES outfalls 001 and 03A027.

Groundwater sample collection, preservation, transport, and analysis shall be performed according to the following procedure:

- a) Measure the depth-to-most-shallow groundwater from the top of the well casing to the nearest hundredth of a foot.
- b) Remove standing water from the well prior to sample collection.
- c) Obtain samples from the well for analysis.

- d) Properly prepare, preserve, and transport samples.
- e) Analyze samples in accordance with the methods authorized in this Discharge Permit.

Depth-to-most-shallow groundwater measurements, analytical results, including the laboratory QA/QC summary report, and a facility layout map showing the location and identification of the monitoring well shall be submitted to NMED in the quarterly monitoring reports.

[NMSA 1978, § 74-6-5.D, Subsection A of 20.6.2.3107 NMAC]

- 27. The Permittees shall collect samples of the discharges and analyze the samples in accordance with the following conditions.

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC]

- 28. The Permittees shall sample and analyze discharges from the SWWS, SMEB, and outfalls. The sample collection points and points of compliance for respective discharge locations are as follows:

SWWS treated wastewater	Discharge from the re-use wet well after the chlorine contact chamber
Outfall 13S	Discharge after the Parshall Flume at outfall
Outfall 001	Discharge after the Parshall Flume at outfall
Outfall 03A027	Discharge from the outfall pipe or a suitable sampling location
SMEB	Basin water column

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]

- 29. On a quarterly basis, the Permittees shall collect grab samples of treated wastewater discharged from the SWWS and wastewater discharged from NPDES outfall 001, NPDES outfall 13S, and NPDES outfall 03A027 and analyze the samples for TKN, NO<sub>3</sub>-N, TDS, and Cl. Samples shall be properly prepared, preserved, transported, and analyzed in accordance with the methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the quarterly monitoring reports. For any sampling location where no discharge occurs for a complete quarter, the Permittees shall report: "no discharge."

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]

- 30. On a semi-annual basis, the Permittees shall collect composite wastewater samples from representative locations within each synthetically lined evaporative impoundment located at the SMEB to characterize the wastewater in each impoundment. The composite samples shall consist of a minimum of six equal aliquots collected around the entire perimeter of each impoundment and thoroughly mixed. Each composite sample shall be analyzed for TKN,

NO<sub>3</sub>-N, TDS, and Cl. Samples shall be properly prepared, preserved, transported, and analyzed in accordance with the methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the monitoring reports due by February 1<sup>st</sup> and August 1<sup>st</sup> of each year.

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]

31. On a quarterly basis, the Permittees shall collect 24-hour flow weighted composite samples (except where noted) of treated wastewater discharged from the SWWS and wastewater discharged from NPDES outfall 001, and NPDES outfall 13S, and a grab sample of wastewater discharged from NPDES outfall 03A027. All samples shall be analyzed for the following inorganic constituents:

- aluminum
- arsenic
- barium
- boron
- cadmium
- chromium
- cobalt
- copper
- cyanide
- fluoride
- iron
- lead
- manganese
- molybdenum
- mercury
- pH (instantaneous)
- nickel
- radioactivity: combined radium-226 & radium-228
- selenium
- silver
- sulfate
- uranium
- zinc

Samples shall be filtered, properly prepared, preserved, transported to an independent environmental laboratory accredited under the National Environmental Laboratory Accreditation Program, and analyzed in accordance with the methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the quarterly monitoring reports.

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]

32. During the years of 2018 and 2020, the Permittees shall collect composite wastewater samples from representative locations within each synthetically lined evaporative impoundment located at the SMEB to characterize the wastewater in each impoundment. The composite samples shall consist of a minimum of six equal aliquots collected around the entire perimeter of each impoundment and thoroughly mixed. Each composite sample shall be analyzed for the following inorganic constituents:

- aluminum
- arsenic
- barium
- boron
- cadmium
- chromium
- cobalt
- copper
- cyanide
- fluoride
- iron
- lead
- manganese
- molybdenum
- mercury
- pH (instantaneous)
- nickel
- radioactivity: combined radium-226 & radium-228
- selenium
- silver
- sulfate
- uranium
- zinc

Samples shall be filtered, properly prepared, preserved, transported to an independent environmental laboratory accredited under the National Environmental Laboratory Accreditation Program, and analyzed in accordance with the methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the monitoring reports due by February 1, 2019 and February 1, 2021.

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]

33. On an annual basis, the Permittees shall collect grab samples of treated wastewater discharged from the SWWS and wastewater discharged from NPDES outfall 001, NPDES outfall 13S, and NPDES outfall 03A027. The samples shall be analyzed for the following organic constituents:

- benzene
- benzo-a-pyrene
- carbon tetrachloride
- chloroform
- 1,1-dichloroethane
- 1,2-dichloroethane (EDC)
- 1,1-dichloroethylene (1,1-DCE)
- ethylbenzene
- ethylene dibromide (EDB)
- methylene chloride
- PAHs: total naphthalene plus monomethylnaphthalenes
- phenols
- polychlorinated biphenyls (PCBs)
- toluene
- 1,1,2,2-tetrachloroethane
- 1,1,2,2-tetrachloroethylene (PCE)
- 1,1,1-trichloroethane
- 1,1,2-trichloroethane
- 1,1,2-trichloroethylene (TCE)
- vinyl chloride
- xylenes (total)

Samples shall be properly prepared, preserved, transported to an independent environmental laboratory accredited under the National Environmental Laboratory Accreditation Program, and analyzed in accordance with the methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the monitoring report due by February 1<sup>st</sup> of each year.

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107.A NMAC]

34. During the years of 2018 and 2020, the Permittees shall collect composite wastewater samples from representative locations within each synthetically lined evaporative impoundment located at the SMEB to characterize the wastewater in each impoundment. The composite samples shall consist of a minimum of six equal aliquots collected around the entire perimeter of each impoundment and thoroughly mixed. Each composite sample shall be analyzed for the following organic constituents:

- benzene
- benzo-a-pyrene
- carbon tetrachloride
- chloroform
- 1,1-dichloroethane
- 1,2-dichloroethane (EDC)
- 1,1-dichloroethylene (1,1-DCE)
- ethylbenzene
- ethylene dibromide (EDB)
- methylene chloride
- PAHs: total naphthalene plus monomethylnaphthalenes
- phenols
- polychlorinated biphenyls (PCBs)
- toluene
- 1,1,2,2-tetrachloroethane
- 1,1,2,2-tetrachloroethylene (PCE)
- 1,1,1-trichloroethane
- 1,1,2-trichloroethane
- 1,1,2-trichloroethylene (TCE)
- vinyl chloride
- xylenes (total)

Samples shall be properly prepared, preserved, transported to an independent environmental laboratory accredited under the National Environmental Laboratory Accreditation Program, and analyzed in accordance with the methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the monitoring report due by February 1, 2019 and February 1, 2021.

[NMSA 1978, § 74-6-5.D, Subsections Band C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]

35. On an annual basis, the Permittees shall collect grab samples of treated wastewater discharged from the SWWS and wastewater discharged from NPDES outfall 001, NPDES outfall 13S, and NPDES outfall 03A027. The samples shall be analyzed for the following toxic pollutants:

- acrolein
- acrylonitrile
- aldrin
- benzidine
- chlordane
- chlorinated benzenes
- hexachlorocyclopentadiene
- high explosives (HE)
  - 2,4-dinitrotoluene (2,4,DNT)
  - 2,6-dinitrotoluene (2,6,DNT)
  - octrahydro-1,3,5,7-tetranitro-1,3,5,7 tetrazocine (HMX)

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>monochlorobenzene</li> <li>hexachlorobenzene</li> <li>pentachlorobenzene</li> <li>• 1,2,4,5-tetrachlorobenzene</li> <li>• chlorinated ethanes             <ul style="list-style-type: none"> <li>hexachloroethane</li> </ul> </li> <li>• chlorinated phenols             <ul style="list-style-type: none"> <li>2,4-dichlorophenol</li> <li>2,4,5-trichlorophenol</li> <li>2,4,6-trichlorophenol</li> </ul> </li> <li>• chloroalkyl ethers             <ul style="list-style-type: none"> <li>bis (2-chloroethyl) ether</li> <li>bis (2-chloroisopropyl) ether</li> <li>bis (chloromethyl) ether</li> </ul> </li> <li>• DDT</li> <li>• dichlorobenzene</li> <li>• dichlorobenzidine</li> <li>• dichloropropenes</li> <li>• dieldrin</li> <li>• diphenylhydrazine</li> <li>• endosulfan</li> <li>• endrin</li> <li>• halomethanes             <ul style="list-style-type: none"> <li>bromodichloromethane</li> <li>bromomethane</li> <li>chloromethane</li> <li>dichlorodifluoromethane</li> <li>dichloromethane</li> <li>tribromomethane</li> <li>trichlorofluoromethane</li> </ul> </li> <li>• heptachlor</li> <li>• hexachlorobutadiene</li> <li>• hexachlorocyclohexane (HCH)             <ul style="list-style-type: none"> <li>alpha-HCH</li> <li>beta-HCH</li> <li>gamma-HCH</li> <li>technical HCH</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)</li> <li>2,4,6-trinitrotoluene (TNT)</li> <li>• isophorone</li> <li>• methyl tertiary butyl ether</li> <li>• nitrobenzene             <ul style="list-style-type: none"> <li>• nitrophenols                 <ul style="list-style-type: none"> <li>2,4-dinitro-o-cresol</li> <li>dinitrophenols</li> </ul> </li> </ul> </li> <li>• nitrosamines             <ul style="list-style-type: none"> <li>N-nitrosodiethylamine</li> <li>N-nitrosodimethylamine</li> <li>N-nitrosodibutylamine</li> <li>N-nitrosodiphenylamine</li> <li>N-nitrosopyrrolidine</li> </ul> </li> <li>• pentachlorophenol</li> <li>• perchlorate</li> <li>• phthalate esters             <ul style="list-style-type: none"> <li>dibutyl phthalate</li> <li>di-2-ethylhexyl phthalate</li> <li>diethyl phthalate</li> <li>dimethyl phthalate</li> </ul> </li> <li>• polynuclear aromatic hydrocarbons (PAH)             <ul style="list-style-type: none"> <li>anthracene</li> <li>3,4-benzofluoranthene</li> <li>benzo (k) fluoranthene</li> <li>fluoranthene</li> <li>fluorene</li> <li>phenanthrene</li> <li>pyrene</li> </ul> </li> <li>• toxaphene</li> <li>• cis-1,2-dichloroethylene</li> <li>• trans-1,2-dichloroethylene</li> <li>• naphthalene</li> <li>• 1-methylnaphthalene</li> <li>• 2-methylnaphthalene</li> </ul> |
|---|--|

Samples shall be properly prepared, preserved, transported to an independent environmental laboratory accredited under the National Environmental Laboratory Accreditation Program, and analyzed in accordance with the methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the monitoring report due by February 1<sup>st</sup> of each year.

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]

36. Once during the year of 2018, the Permittees shall collect composite wastewater samples from representative locations within each synthetically lined evaporative impoundment located at the SMEB to characterize the wastewater in each impoundment. The composite samples shall consist of a minimum of six equal aliquots collected around the entire perimeter of each impoundment and thoroughly mixed. Each composite sample shall be analyzed for the following toxic pollutants:

- acrolein
- acrylonitrile
- aldrin
- benzidine
- chlordane
- chlorinated benzenes
  - monochlorobenzene
  - hexachlorobenzene
  - pentachlorobenzene
- 1,2,4,5-tetrachlorobenzene
- chlorinated ethanes
  - hexachloroethane
- chlorinated phenols
  - 2,4-dichlorophenol
  - 2,4,5-trichlorophenol
  - 2,4,6-trichlorophenol
- chloroalkyl ethers
  - bis(2-chloroethyl) ether
  - bis(2-chloroisopropyl) ether
  - bis(chloromethyl) ether
- DDT
- dichlorobenzene
- dichlorobenzidine
- dichloropropenes
- dieldrin
- diphenylhydrazine
- endosulfan
- endrin
- halomethanes
  - bromodichloromethane
  - bromomethane
  - chloromethane
  - dichlorodifluoromethane
  - dichloromethane
  - tribromomethane
  - trichlorofluoromethane
- hexachlorocyclopentadiene
- high explosives (HE)
  - 2,4-dinitrotoluene (2,4-DNT)
  - 2,6-dinitrotoluene (2,6-DNT)
  - octrahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)
  - hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)
  - 2,4,6-trinitrotoluene (TNT)
- isophorone
- methyl tertiary butyl ether
- nitrobenzene
- nitrophenols
  - 2,4-dinitro-o-cresol
  - dinitrophenols
- nitrosamines
  - N-nitrosodiethylamine
  - N-nitrosodimethylamine
  - N-nitrosodibutylamine
  - N-nitrosodiphenylamine
  - N-nitrosopyrrolidine
- pentachlorophenol
- perchlorate
- phthalate esters
  - dibutyl phthalate
  - di-2-ethylhexyl phthalate
  - diethyl phthalate
  - dimethyl phthalate
- polynuclear aromatic hydrocarbons (PAH)
  - anthracene
  - 3,4-benzofluoranthene
  - benzo (k) fluoranthene
  - fluoranthene
  - fluorene
  - phenanthrene
  - pyrene
- toxaphene

- heptachlor
- hexachlorobutadiene
- hexachlorocyclohexane (HCH)
  - alpha-HCH
  - beta-HCH
  - gamma-HCH
  - technical HCH
- cis-1,2-dichloroethylene
- trans-1,2-dichloroethylene
- naphthalene
- 1-methylnaphthalene
- 2-methylnaphthalene

Samples shall be properly prepared, preserved, transported to an independent environmental laboratory accredited under the National Environmental Laboratory Accreditation Program, and analyzed in accordance with the methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the monitoring report due by February 1, 2019.

[NMSA 1978, § 74-6-5.D, Subsections B and C of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]

### CONTINGENCY PLAN

#### *Contingency Plan for Groundwater*

37. In the event that a groundwater quality standard identified in Section 20.6.2.3103 NMAC is exceeded; the total nitrogen concentration in groundwater is greater than 10 mg/L; or a toxic pollutant (defined in Subsection WW of 20.6.2.7 NMAC) is present in groundwater during the term of this Discharge Permit, upon closure of the facility, or during the implementation of post-closure requirements; and if NMED determines that the exceedance of the groundwater quality standard(s) is potentially due to discharges authorized under this Discharge Permit, the Permittees shall propose measures to mitigate damage from the discharge including, at a minimum, source control measures and a completion schedule by submitting a corrective action plan to NMED for approval. The Permittees may be required to abate water pollution pursuant to Sections 20.6.2.4000 through 20.6.2.4115 NMAC should the corrective action plan not result in compliance with the standards and requirements set forth in Section 20.6.2.4103 NMAC within 180 days of confirmation of groundwater contamination.

This permit condition does not apply to an exceedance of groundwater quality standard or the presence of a toxic pollutant in groundwater unrelated to a discharge associated with the Facilities or defined systems in the Discharge Permit, to the extent that abatement of such groundwater contamination is occurring, or will occur, pursuant to and in accordance with the March 1, 2005 Compliance Order on Consent (Consent Order) agreed to by NMED, DOE, and the Regents of the University of California (predecessor to LANLS).

[NMSA 1978, § 74-6-5.D, Subsections A and E of 20.6.2.3107 NMAC]

***Contingency Plan for Discharge***

38. In the event that analytical results of a quarterly treated wastewater sample from the discharge at the SWWS indicate an exceedance of the total nitrogen limitation set in this Discharge Permit, the Permittees shall collect a confirmatory sample within 15 days of receipt of the analysis. In the event the second sample results indicate that the limitation continues to be exceeded, the following contingency plan shall be enacted:
- a) Within 15 days of the second sample analysis date indicating that the limitation continues to be exceeded, the Permittees shall:
    - i) notify NMED that the contingency plan is being enacted; and
    - ii) submit a copy of the first and second analytical results indicating an exceedance to NMED.
  - b) The Permittees shall increase the frequency of total nitrogen wastewater sampling and analysis of treated wastewater to once per month.
  - c) The Permittees shall examine the operation and maintenance log, required by the Record Keeping conditions of this Discharge Permit, for improper operational procedures.
  - d) The Permittees shall conduct a physical inspection of the treatment system to detect abnormalities. Any abnormalities discovered shall be corrected. A report detailing the corrections made shall be submitted to NMED within 30 days of correction.
  - e) In the event that any analytical results from monthly wastewater sampling indicate an exceedance of the total nitrogen limitation, the Permittees shall propose to modify operational procedures and/or upgrade the treatment process to achieve the total nitrogen limit by submitting a corrective action plan to NMED for approval. The plan shall include a schedule for completion of corrective actions and shall be submitted within 90 days of the second sample analysis date indicating that the limitation is continuing to be exceeded. The Permittees shall initiate implementation of the plan following approval by NMED.

When analytical results from three consecutive months of wastewater sampling do not exceed the limitation, the Permittees are authorized to return to a quarterly monitoring frequency.

[NMSA 1978, § 74-6-5.D; Subsection A of 20.6.2.3107 NMAC, Subsection C of 20.6.2.3109 NMAC]

39. In the event that analytical results of a wastewater sample from the discharges at NPDES outfalls 001, 13S, and 03A27 indicate an exceedance of any of the standards for groundwater listed in Attachment 1 included with this Discharge Permit, the Permittees shall collect a confirmatory sample within 15 days of receipt of the analysis from the same location and analyze the sample for the contaminant(s) in question. Upon confirmation that the discharge contains a contaminant(s) that exceed the standards for groundwater listed in Attachment 1, the Permittees shall implement the following contingency plan:
- a) Within 24 hours of receiving the analytical results of the confirmatory sample, the Permittees shall orally notify NMED that the contingency plan is being implemented.
  - b) Wastewater sampling and analysis for each contaminant that exceeds the standards for groundwater listed in Attachment 1 shall be done on a monthly basis at the location(s) where the exceedance was detected.

- c) The Permittees shall investigate all suspected sources that could be contributing elevated levels of the contaminant. This investigation may include an evaluation of LANL's internal pretreatment controls for the SWWS facility.
- d) The Permittees shall sample the downgradient monitoring well SCA-3 for NPDES outfalls 001 and 03A027 and/or a downgradient monitoring well approved by NMED for NPDES outfall 13S and analyze the samples for the exceeded contaminant(s) on an ongoing quarterly basis. The analytical results from the monitoring well(s) for the exceeded contaminant(s) in question shall be submitted to NMED with the quarterly monitoring reports.

If analytical results from the sampling of the downgradient monitoring well SCA-3 and/or the NMED approved downgradient monitoring well show that a contaminant(s) exceeds the standards for groundwater listed in Attachment 1, the Permittees shall implement a corrective action plan as required by Condition #37.

When analytical results from two consecutive quarters of wastewater sampling do not exceed any of the standards for groundwater listed in Attachment 1, the Permittees are authorized to return to the permitted sampling frequency for the contaminant(s).

If standards for groundwater listed in Attachment 1, which have been determined to be potentially due to discharges authorized by this Discharge Permit, are not exceeded for two consecutive quarters of groundwater sampling after the Permittees are authorized to return to permitted wastewater sampling frequency, the Permittees are authorized to cease the sampling of the downgradient monitoring well SCA-3 and/or NMED approved downgradient monitoring well.

[NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]

40. In the event that analytical results of a wastewater sample from the discharges at NPDES outfalls 001, 13S, and 03A27 indicate an exceedance of any of the tap water screening levels listed in Attachment 2 included with this Discharge Permit, the Permittees shall collect a confirmatory sample within 15 days of receipt of the analysis from the same location and analyze the sample for the contaminant(s) in question. Upon confirmation that the discharge contains contaminant(s) which exceed the tap water screening levels listed in Attachment 2, the Permittees shall implement the following contingency plan:
  - a) Within 24 hours of receiving the analytical results of the confirmatory sample, the Permittees shall orally notify NMED that the contingency plan is being implemented.
  - b) Wastewater sampling and analysis for each contaminant that exceeds the tap water screening levels listed in Attachment 2 shall be done on a monthly basis at the location(s) where the exceedance was detected.
  - c) The Permittees shall investigate all suspected sources that could be contributing elevated levels of the contaminant. This investigation may include an evaluation of LANL's internal pretreatment controls for the SWWS facility.
  - d) The Permittees shall sample the downgradient monitoring well SCA-3 for NPDES

outfalls 001 and 03A027 and/or a downgradient monitoring well approved by NMED for NPDES outfall 13S and analyze the samples for the exceeded contaminant(s) on an ongoing quarterly basis. The analytical results from the monitoring well(s) for the exceeded contaminant(s) in question shall be submitted to NMED with the quarterly monitoring reports.

If analytical results from the sampling of the downgradient monitoring well SCA-3 and/or the NMED approved downgradient monitoring well show that a contaminant(s) exceeds the tap water limits listed in Attachment 2, the Permittees shall implement a corrective action plan as required by Condition #37.

When analytical results from two consecutive quarters of wastewater sampling do not exceed any of the tap water limits listed in Attachment 2, the Permittees are authorized to return to an annual monitoring frequency.

If tap water limits for groundwater listed in Attachment 2, which have been determined to be potentially due to discharges authorized by this Discharge Permit, are not exceeded for two consecutive quarters of groundwater sampling after the Permittees are authorized to return to permitted wastewater sampling frequency, the Permittees are authorized to cease the sampling of the downgradient monitoring well SCA-3 and/or NMED approved downgradient monitoring well.

[NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]

#### ***Contingency Plan for Facilities***

41. In the event that an inspection of the SWWS or the SMEB reveals significant damage likely to affect the structural integrity of any of synthetically lined impoundments at these facilities, or impair their ability to contain contaminants, the Permittees shall propose the repair or replacement of the damaged impoundment liner by submitting a corrective action plan to NMED for approval. The plan shall be submitted to NMED within 30 days after discovery by the Permittees or following notification from NMED that significant liner damage is evident. The corrective action plan shall include a schedule for completion of corrective actions.

Upon NMED approval of the corrective action plan, or approval of the plan with conditions, the Permittees shall implement the corrective action plan.

[NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]

42. In the event that a minimum of two feet of freeboard cannot be preserved at an SWWS impoundment or a minimum of one foot of freeboard cannot be maintained at an SMEB impoundment, the Permittees shall take corrective actions to restore the required freeboard.

In the event that the required freeboard cannot be restored within a period of 72 hours following discovery, the Permittees shall propose actions to be immediately implemented to restore the required freeboard by submitting a short-term corrective action plan to NMED for approval. Examples of short-term corrective actions include removing excess wastewater from the impoundment(s) through pumping and hauling or reducing the volume of wastewater discharged to the impoundment(s). The short-term corrective action plan shall include a schedule for completion of corrective actions and shall be submitted within 15 days following the date when the freeboard limit violation was initially discovered.

Upon NMED approval of the short-term corrective action plan, or approval of the plan with conditions, the Permittees shall implement the short-term corrective action plan.

In the event that the short-term corrective actions fail to restore the required freeboard, the Permittees shall propose permanent corrective actions in a long-term corrective action plan submitted to NMED within 90 days following failure of the short-term corrective action plan. Examples of long-term corrective action include the installation of an additional storage impoundment or a significant, permanent reduction in the volume of wastewater discharged to the impoundment(s). The plan shall include a schedule for completion of corrective actions.

Upon NMED approval of the long-term corrective action plan, or approval of the plan with conditions, the Permittees shall implement the long-term corrective action plan.

[NMSA 1978, § 74-6-5.D; Subsection B of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]

43. In the event that standing liquid is present at an elevation above the four-inch drain line in any of the double, synthetically-lined, evaporative impoundment leak detection systems (collection sumps) at the SMEB, the Permittees shall initiate pumping of the collection sump. The volume of liquid removed from the collection sump shall be measured and then the liquid shall be transferred to one (or more) of the evaporative impoundments. If more than 80 gallons of liquid can be removed from any single leak collection sump within a 24-hour period, the Permittees shall implement the following contingency plan:
- a) Within 24 hours of discovering the standing liquid, the Permittees shall orally notify NMED that the contingency plan is being implemented.
  - b) The Permittees shall collect samples of the standing liquid in the sump and the liquid contents of the related impoundment and analyze the samples for TDS.
  - c) If analytical results show the presence of elevated levels of TDS in the liquid from the collection sump consistent with the concentration of this constituent in the impoundment, the primary synthetic liner of the impoundment will be assumed to be compromised and the Permittees shall submit a corrective action plan for inspection and repair or replacement of the primary synthetic liner. The corrective action plan shall be submitted to NMED for approval within 30 days of receipt of the analytical results indicating that the primary liner has been compromised. The corrective action plan shall include a

schedule for completion.

Upon NMED approval of the corrective action plan, or approval of the plan with conditions, the Permittees shall implement the corrective action plan.

If analytical results do not show the presence of elevated levels of TDS in the liquid from the collection sump, the Permittees shall continue to remove liquid from the sump when it exceeds the elevation of the four-inch drain line and monitor the volume of liquid that is removed from the sump. The Permittees shall consult with NMED regarding additional appropriate corrective actions.

[NMSA 1978, § 74-6-5.D, 20.6.2.3107 NMAC, 20.6.2.3109 NMAC]

### *Contingency Plan for Spills*

44. In the event that a release or spill occurs at the SWWS, the SERF, or the SMEB that is not authorized under this Discharge Permit, the Permittees shall take measures to mitigate damage from the unauthorized discharge and initiate the notifications and corrective actions required in Section 20.6.2.1203 NMAC and summarized below.

Within 24 hours following discovery of the unauthorized discharge, the Permittees shall orally notify NMED and provide the following information:

- a) The name, address, and telephone number of the person or persons in charge of the Facility.
- b) The identity and location of the Facility.
- c) The date, time, location, and duration of the unauthorized discharge.
- d) The source and cause of the unauthorized discharge.
- e) A description of the unauthorized discharge, including its estimated chemical composition.
- f) The estimated volume of the unauthorized discharge.
- g) Any actions taken to mitigate immediate damage from the unauthorized discharge.

Within one week following discovery of the unauthorized discharge, the Permittees shall submit written notification to NMED with the information listed above and any pertinent updates.

Within 15 days following discovery of the unauthorized discharge, the Permittees shall submit a corrective action report and plan to NMED describing any corrective actions taken and to be taken relative to the unauthorized discharge that includes the following:

- a) A description of proposed actions to mitigate damage from the unauthorized discharge.
- b) A description of proposed actions to prevent future unauthorized discharges of this nature.
- c) A schedule for completion of proposed actions.

In the event that the unauthorized discharge causes or may with reasonable probability cause water pollution in excess of the standards and requirements of Section 20.6.2.4103 NMAC, and the water pollution will not be abated within 180 days after notice is required to be given

pursuant to Section 20.6.2.1203.A(1) NMAC, the Permittees may be required to abate water pollution pursuant to Sections 20.6.2.4000 through 20.6.2.4115 NMAC.

Nothing in this condition shall be construed as relieving the Permittees of the obligation to comply with all requirements of Section 20.6.2.1203 NMAC.

[NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC, 20.6.2.1203 NMAC]

***Contingency Plan for Other Failures***

45. In the event that NMED or the Permittees identify any failures of the discharge plan or this Discharge Permit not specifically addressed herein, NMED may require the Permittees to submit a corrective action plan and a schedule for completion to address the failure. Upon NMED approval of the corrective action plan, or approval of the plan with conditions, the Permittees shall implement the corrective action plan. Additionally, NMED may require a Discharge Permit modification to achieve compliance with Section 20.6.2 NMAC.

[NMSA 1978, § 74-6-5.D, Subsections B and E of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC]

**CLOSURE PLAN**

***Permanent Facility Closure Conditions***

46. Upon permanent cessation of operations of the SWWS and/or the SERF (facilities), the Permittees shall perform the following closure measures:

Within 90 days of ceasing discharge to the facility(s), the Permittees shall complete the following closure measures:

- a) Plug the line(s) leading to the facility(s) so that a discharge to the facility(s) can no longer occur.
- b) Drain or evaporate all wastewater from the facility(s) components including the synthetically lined storage impoundment(s). Dispose the wastewater in accordance with all local, state, and federal laws and regulations.
- c) Remove all solids from the facility(s) components. Contain, transport, and dispose the solids in accordance with all local, state, and federal laws and regulations, including 40 CFR Part 503. The Permittees shall maintain a record of all solids transported for off-site disposal.

Within 180 days of ceasing discharge to the facilities, the Permittees shall complete the following closure measures:

- a) Remove all lines leading to and from the facility(s), or permanently plug them and abandon them in place.
- b) Remove or demolish all facility components and re-grade the area with suitable fill to blend with surface topography, promote positive drainage, and prevent ponding.

- c) Perforate or remove the storage impoundment liner(s) and sludge drying bed liners; fill the impoundment(s) and drying beds sites with suitable fill; and re-grade the impoundment(s) and drying bed sites to blend with surface topography, promote positive drainage, and prevent ponding.

When all closure requirements have been completed, the Permittees may submit to NMED a written request for the removal of the SWWS and/or the SERF from the Discharge Permit or the termination of the Discharge Permit.

[NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC, 40 CFR Part 503]

47. Upon permanent cessation of operation of the SMEB, or a synthetically lined evaporative impoundment(s) at the SMEB, the Permittees shall perform the following closure measures:

Within 90 days of ceasing discharge to an impoundment(s), the line leading to the impoundment(s) shall be plugged so that a discharge can no longer occur and wastewater shall be drained or evaporated from the impoundment(s). Wastewater shall be disposed of in accordance with all local, state, and federal laws and regulations.

Within 180 days of ceasing discharge to an impoundment(s), the Permittees shall submit a solids removal and disposal plan to NMED for approval. The solids removal and disposal plan shall include the following:

- a) The estimated volume and dry weight of solids to be removed and disposed, including measurements and calculations.
- b) Analytical results for samples of the solids taken from the impoundment(s) for all constituents listed in Attachment I of this Discharge Permit.
- c) The method of solid removal from the impoundment(s).
- d) The method of disposal for all of the solids removed from the impoundment(s). The method shall comply with all local, state, and federal laws and regulations, including 40 CFR Part 503 [Note: A proposal that includes the surface disposal of sludge may be subject to Ground Water Discharge Permitting requirements pursuant to 20.6.2.3104 NMAC that are separate from the requirements of this Discharge Permit.
- e) A schedule for completion of solids removal and disposal not to exceed two years from the date that discharge to the impoundment(s) ceased.

Within 30 days of NMED approval of the solids removal and disposal plan, the Permittees shall implement the plan.

Within one year of completion of the solids removal and disposal, the Permittees shall complete the following closure measures:

- a) Remove all lines leading to and from the impoundment(s), or permanently plug and abandon them in place.
- b) Perforate or remove the impoundment liner(s).
- c) Fill the impoundment(s) with suitable fill.

- d) Re-grade the impoundment(s) site to blend with surface topography, promote positive drainage, and prevent ponding.

When all closure requirements have been completed, the Permittees may submit to NMED a written request for the removal of the synthetically lined evaporative impoundment(s) or the SMEB from the Discharge Permit.

[NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC, 40 CFR Part 503]

48. Upon cessation of the operation of any NPDES outfall authorized by this Discharge Permit, the Permittees shall perform the following closure measures within 90 days of ceasing discharge:
- Remove or plug all lines leading to the NPDES outfall so that a discharge can no longer occur.
  - Submit a closure report to NMED that describes the NPDES outfall that has been decommissioned and the closure activities conducted, including photographic documentation.

[NMSA 1978, § 74-6-5.D, Subsection B of 20.6.2.3109 NMAC, Subsection A of 20.6.2.3107 NMAC, 40 CFR Part 503]

### GENERAL TERMS AND CONDITIONS

49. **RECORD KEEPING** - The Permittees shall maintain a written record of:
- information and data used to complete the application for this Discharge Permit;
  - any releases (commonly known as "spills") not authorized under this Discharge Permit and reports submitted pursuant to 20.6.2.1203 NMAC;
  - the operation, maintenance, and repair of all facilities/equipment used to treat, store or dispose of wastewater;
  - facility record drawings (plans and specifications) showing the actual construction of the facility and bear the seal and signature of a licensed New Mexico professional engineer;
  - copies of monitoring reports completed and/or submitted to NMED pursuant to this Discharge Permit;
  - the volume of wastewater or other wastes discharged pursuant to this Discharge Permit;
  - groundwater quality and wastewater quality data collected pursuant to this Discharge Permit;
  - copies of construction records (well logs) for all groundwater monitoring wells required to be sampled pursuant to this Discharge Permit;
  - the maintenance, repair, replacement or calibration of any monitoring equipment or flow measurement devices required by this Discharge Permit; and

- data and information related to field measurements, sampling, and analysis conducted pursuant to this Discharge Permit, including:
  - the dates, location and times of sampling or field measurements;
  - the name and job title of the individuals who performed each sample collection or field measurement;
  - the sample analysis date of each sample
  - the name and address of the laboratory, and the name of the signatory authority for the laboratory analysis;
  - the analytical technique or method used to analyze each sample or collect each field measurement;
  - the results of each analysis or field measurement, including raw data;
  - the results of any split, spiked, duplicate or repeat sample; and
  - a copy of the laboratory analysis chain-of-custody as well as a description of the quality assurance and quality control procedures used.

The written record shall be maintained by the Permittees at a location accessible during a facility inspection by NMED for a period of at least five years from the date of application, report, collection or measurement and shall be made available to the department upon request.

[NMSA 1978, § 74-6-5.D, Subsections A and D of 20.6.2.3107 NMAC]

50. **INSPECTION and ENTRY** - The Permittees shall allow inspection by NMED of the Facilities and their operations that are subject to this Discharge Permit and the WQCC regulations. NMED may upon presentation of proper credentials, enter at reasonable times upon or through any premises in which a water contaminant source is located or in which are located any records required to be maintained by regulations of the federal government or the WQCC.

The Permittees shall allow NMED to have access to and reproduce for their use any copy of the records, and to perform assessments, sampling or monitoring during an inspection for the purpose of evaluating compliance with this Discharge Permit and the WQCC regulations.

Nothing in this Discharge Permit shall be construed as limiting in any way the inspection and entry authority of NMED under the WQA, the WQCC Regulations, or any other local, state or federal regulations.

[Subsection D of 20.6.2.3107 NMAC, NMSA 1978, §§ 74-6-9.B and 74-6-9.E]

51. **DUTY to PROVIDE INFORMATION** - The Permittees shall, upon NMED's request, allow for NMED's inspection/duplication of records required by this Discharge Permit and/or furnish to NMED copies of such records.

[NMSA 1978, § 74-6-5.D, Subsection D of 20.6.2.3107 NMAC]

52. **MODIFICATIONS and/or AMENDMENTS** – In the event the Permittees proposes a change to the Facilities or the Facilities' discharge that would result in a change in the volume discharged; the location of the discharge; or in the amount or character of water contaminants received, treated or discharged by the Facilities, the Permittees shall notify NMED prior to implementing such changes. The Permittees shall obtain approval (which may require modification of this Discharge Permit) by NMED prior to implementing such changes.

[NMSA 1978, § 74-6-5.D, Subsection C of 20.6.2.3107 NMAC, Subsections E and G of 20.6.2.3109 NMAC]

53. **PLANS and SPECIFICATIONS** – In the event the Permittees are proposing to construct a wastewater system or change a process unit of an existing system such that the quantity or quality of the discharge will change substantially from that authorized by this Discharge Permit, the Permittees shall submit construction plans and specifications to NMED for the proposed system or process unit prior to the commencement of construction.

In the event the Permittees implements changes to the wastewater system(s) authorized by this Discharge Permit that result in only a minor effect on the character of the discharge, the Permittees shall report such changes (including the submission of record drawings, where applicable) as of January 1<sup>st</sup> and June 30<sup>th</sup> of each year to NMED.

[Subsections A and C of 20.6.2.1202 NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]

54. **CIVIL PENALTIES** - Any violation of the requirements and conditions of this Discharge Permit, including any failure to allow NMED staff to enter and inspect records or facilities, or any refusal or failure to provide NMED with records or information, may subject the Permittees to a civil enforcement action. Pursuant to WQA 74-6-10(A) and (B), such action may include a compliance order requiring compliance immediately or in a specified time, assessing a civil penalty, modifying or terminating the Discharge Permit, or any combination of the foregoing; or an action in district court seeking injunctive relief, civil penalties, or both. Pursuant to WQA 74-6-10(C) and 74-6-10.1, civil penalties of up to \$15,000 per day of noncompliance may be assessed for each violation of the WQA 74-6-5, the WQCC Regulations, or this Discharge Permit, and civil penalties of up to \$10,000 per day of noncompliance may be assessed for each violation of any other provision of the WQA, or any regulation, standard, or order adopted pursuant to such other provision. In any action to enforce this Discharge Permit, the Permittees waives any objection to the admissibility as evidence of any data generated pursuant to this Discharge Permit.

[20.6.2.1220 NMAC, NMSA 1978, §§ 74-6-10 and 74-6-10.1]

55. **CRIMINAL PENALTIES** – No person shall:
- make any false material statement, representation, certification or omission of material fact in an application, record, report, plan or other document filed, submitted or required to be maintained under the WQA;

- falsify, tamper with or render inaccurate any monitoring device, method or record required to be maintained under the WQA; or
- fail to monitor, sample or report as required by a permit issued pursuant to a state or federal law or regulation.

Any person who knowingly violates or knowingly causes or allows another person to violate the requirements of this condition is guilty of a fourth degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who is convicted of a second or subsequent violation of the requirements of this condition is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who knowingly violates the requirements of this condition or knowingly causes another person to violate the requirements of this condition and thereby causes a substantial adverse environmental impact is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who knowingly violates the requirements of this condition and knows, at the time of the violation that he is creating a substantial danger of death or serious bodily injury to any other person is guilty of a second degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15.

[20.6.2.1220 NMAC, NMSA 1978, §§ 74-6-10.2.A through 74-6-10.2.F]

56. COMPLIANCE with OTHER LAWS - Nothing in this Discharge Permit shall be construed in any way as relieving the Permittees of the obligation to comply with all applicable federal, state, and local laws, regulations, permits or orders.

[NMSA 1978, § 74-6-5.L];

57. RIGHT to APPEAL - The Permittees may file a petition for review before the WQCC on this Discharge Permit. Such petition shall be in writing to the WQCC within thirty days of the receipt of postal notice of this Discharge Permit and shall include a statement of the issues to be raised and the relief sought. Unless a timely petition for review is made, the decision of NMED shall be final and not subject to judicial review.

[20.6.2.3112 NMAC, NMSA 1978, § 74-6-5.O]

58. TRANSFER of DISCHARGE PERMIT - Prior to the transfer of any ownership, control, or possession of this facility or any portion thereof, the Permittees shall:
- notify the proposed transferee in writing of the existence of this Discharge Permit;
  - include a copy of this Discharge Permit with the notice; and
  - deliver or send by certified mail to NMED a copy of the notification and proof that such notification has been received by the proposed transferee.

Until both ownership and possession of the facility have been transferred to the transferee, the Permittees shall continue to be responsible for any discharge from the facility.

[20.6.2.3111 NMAC]

59. PERMIT FEES - Payment of permit fees is due at the time of Discharge Permit approval. Permit fees shall be paid in a single payment or shall be paid in equal installments on a yearly basis over the term of the Discharge Permit. Single payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date. Initial installment payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date; subsequent installment payments shall be remitted to NMED no later than the anniversary of the Discharge Permit effective date.

Permit fees are associated with issuance of this Discharge Permit. Nothing in this Discharge Permit shall be construed as relieving the Permittees of the obligation to pay all permit fees assessed by NMED. Permittees that ceases discharging or does not commence discharging from the Facilities during the term of the Discharge Permit shall pay all permit fees assessed by NMED. An approved Discharge Permit shall be suspended or terminated if the Permittees fails to remit an installment payment by its due date.

[Subsection F of 20.6.2.3114 NMAC, NMSA 1978, § 74-6-5.K]

PERMIT TERM & SIGNATURE

EFFECTIVE DATE: [effective date]  
TERM ENDS: [expiration date]

[Subsection H of 20.6.2.3109 NMAC, NMSA 1978, § 74-6-5.I]

MICHELLE HUNTER  
Chief, Ground Water Quality Bureau  
New Mexico Environment Department

**ATTACHMENT 1 – STANDARDS FOR GROUND WATER**

<b>Inorganic Contaminants:</b>	<b>mg/L</b>
Aluminum	5.0
Arsenic	0.1
Barium	1.0
Boron	0.75
Cadmium	0.01
Chromium	0.05
Chloride	250.0
Cobalt	0.05
Copper	1.0
Cyanide	0.2
Fluoride	1.6
Iron	1.0
Lead	0.05
Manganese	0.2
Molybdenum	1.0
Mercury (total)	0.002
Nickel	0.2
pH	6 – 9
Selenium	0.05
Silver	0.05
Sulfate	600.0
Total Dissolved Solids	1000.0
Uranium	0.03
Zinc	10.0

<b>Radioactivity:</b>	<b>pCi/L</b>
Combined Radium-226 & Radium-228	30

<b>Organic Contaminants:</b>	<b>mg/L</b>
Benzene	0.01
Benzo (a) pyrene	0.0007
Carbon tetrachloride	0.01
Chloroform	0.1
1,1-Dichloroethane	0.025
1,2-Dichloroethane	0.01
1-1-Dichloroethylene	0.005
1,1,2,2-tetrachloroethylene (PCE)	0.02
1,1,2-trichloroethylene (TCE)	0.1
Ethylbenzene	0.75
Ethylene dibromide	0.0001
Naphthalene plus monomethylnaphthalenes	0.03
Methylene chloride	0.1
Polychlorinated biphenyls (PCBs)	0.001
Phenols	0.005
Toluene	0.75
1,1,1-Trichloroethane	0.06
1,1,2-Trichloroethane	0.01
1,1,2,2-tetrachloroethane	0.01
Vinyl Chloride	0.001
Xylenes (total)	0.62

<b>Nitrogen Compounds:</b>	<b>mg/L</b>
Total Nitrogen (sum of TKN+NO <sub>3</sub> -N)	10

Table A-1: NMED Soil Screening Levels

Chemical	Residential Soil (mg/kg)	End-point	Industrial/Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	Tap Water (ug/L)	End-point	Risk-based SSL for a DAF of 1 (mg/kg)	Risk-based SSL for a DAF of 20 (mg/kg)
Acenaphthene	3.48E+03	n	5.05E+04	n	1.51E+04	n	5.35E+02	n	4.12E+00	8.25E+01
Acetaldehyde	3.249E+02	n	1.17E+03	n	2.17E+02	n	1.88E+01	n	3.29E+03	1.658E+02
Acetone	6.63E+04	n	9.60E+05	nls	2.42E+05	nls	1.41E+04	n	2.49E+00	4.98E+01
Acrylonitrile	4.93E+00	c	2.46E+01	c	3.52E+01	n	5.23E+01	c	9.77E+05	1.95E+03
Acetophenone	7.82E+03	ns	1.30E+05	nls	3.54E+04	ns	1.92E+03	n	4.82E-01	9.64E+00
Acrolein	4.54E+01	n	2.16E+00	n	4.01E+01	n	4.15E+02	n	7.29E+06	1.46E+04
Aldrin	3.11E-01	c	1.50E+00	c	8.07E+00	n	4.54E-02	c	5.60E-03	1.12E-01
Aluminum	7.80E+04	n	1.29E+06	n	4.14E+04	n	1.99E+04	n	2.99E+04	5.97E+05
Anthracene	1.74E+04	n	2.53E+05	nl	7.53E+04	n	1.72E+03	n	4.25E+01	8.51E+02
Antimony	3.13E+01	n	5.19E+02	n	1.42E+02	n	7.26E+00	n	3.28E+01	6.56E+00
Arsenic	4.25E+00	c	2.15E+01	c	5.74E+01	n	5.13E-01	c	1.50E-02	2.99E-01
Barium	4.56E+04	n	2.55E+05	n	4.39E+03	n	3.28E+03	n	1.35E+02	2.70E+03
Benzene	1.78E+01	c	8.72E+01	c	1.42E+02	n	4.54E+00	c	1.90E-03	3.80E-02
Benzdine	5.18E-03	c	1.12E+01	c	8.12E+01	c	1.07E+03	c	2.09E+06	7.417E+05
Benzo(a)anthracene	1.53E+00	c	3.23E+01	c	2.40E+02	c	3.43E-01	c	9.11E-02	1.82E+00
Benzo(a)pyrene	1.53E-01	c	3.23E+00	c	2.40E+01	c	3.43E-02	c	3.02E+02	6.05E+01
Benzo(b)fluoranthene	1.53E+00	c	3.23E+01	c	2.40E+02	c	3.43E-01	c	3.09E-01	6.17E+00
Benzo(k)fluoranthene	1.53E+01	c	3.23E+02	c	2.31E+03	c	3.43E+00	c	3.02E+00	6.05E+01
Beryllium	1.56E+02	n	2.58E+03	n	1.48E+02	n	1.24E+01	n	9.79E+00	1.96E+02
α-BHC (α-Hexachlorocyclohexane, α-HCH)	1.845E-01	c	4.07E+00	c	2.97E+01	c	6.80E-02	c	2.98E+04	7.596E+03
β-BHC (β-Hexachlorocyclohexane, β-HCH)	2.96E+00	c	1.43E+01	c	1.04E+02	c	2.38E-01	c	1.04E-03	2.09E-02
γ-BHC (Lindane)	5.63E+00	c	2.83E+01	c	9.43E+01	n	4.08E+01	c	1.79E+03	3.58E+02
1,1-Biphenyl	6.32E+01	n	2.98E+02	n	5.46E+01	n	8.34E-01	n	6.56E-03	1.31E-01
Bis(2-chloroethyl) ether	3.11E+00	c	1.57E+01	c	1.95E+00	c	1.36E+01	c	3.03E+05	1.605E+04
Bis(2-chloroisopropyl) ether	9.93E+01	c	5.19E+02	cs	3.54E+03	cs	9.76E+00	c	2.37E-03	4.73E-02
Bis(2-ethylhexyl) phthalate	3.80E+02	c	1.83E+03	c	5.38E+03	n	5.56E+01	c	9.99E+00	2.00E+02
Bis(chloromethyl) ether	2.08E-03	c	1.02E-02	c	4.81E-02	c	7.20E-04	c	1.50E-07	3.00E-06
Boron	1.56E+04	n	2.59E+05	n	5.14E+04	n	3.95E+03	n	1.25E+01	2.51E+02
Bromodichloromethane	6.19E+00	c	3.02E+01	c	1.43E+02	c	1.34E+00	c	3.10E-04	6.21E-03
Bromomethane	1.77E+01	n	9.45E+01	n	1.79E+01	n	7.54E+00	n	1.71E+03	3.43E+02
1,3-Butadiene	6.86E-01	c	3.41E+00	c	2.02E+00	n	1.80E-01	c	1.04E-04	2.07E-03

Chemical	Residential Soil (mg/kg)	End-point	Industrial/Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	Tap Water (ug/L)	End-point	Risk-based SSL for a DAF of 1 (mg/kg)	Risk-based SSL for a DAF of 20 (mg/kg)
2-Butanone (Methyl ethyl ketone; MEK)	13.74E+04	n	24.11E+05	nls	9.17E+04	ns	15.56E+03	n	1.00E+00	2.01E+01
tert-Butyl methyl ether (MTBE)	9.75E+02	c	4.82E+03	c	2.42E+04	cs	1.43E+02	c	2.77E-02	5.53E-01
Cadmium	7.05E+01E	n	1.11E+03	n	7.21E+01	n	6.24E+00	n	4.69E-01	9.39E+00
Carbon disulfide	1.55E+03	ns	8.54E+03	ns	1.62E+03	ns	8.10E+02	n	2.21E-01	4.42E+00
Carbon tetrachloride	1.07E+01	c	5.25E+01	ci	2.02E+02	n	4.53E+00	c	1.66E-03	3.33E-02
Chlordane	1.77E+01	c	8.90E+01	c	1.53E+02	n	2.23E+00	c	1.13E-01	2.26E+00
2-Chloroacetophenone	1.72E+05	nl	8.12E+05	nl	2.81E+02	n				
2-Chloro-1,3-butadiene	1.75E-01	c	8.48E-01	c	3.95E+00	c	1.87E-01	c	9.83E-05	1.97E-03
1,1-Dichloro-1,1-difluoroethane	1.09E+05	nls	5.15E+05	nls	9.58E+04	ns	1.04E+05	n	5.34E+01	1.07E+03
Chlorobenzene	3.78E+02	ns	2.16E+03	ns	4.12E+02	ns	7.76E+01	n	4.18E-02	8.36E-01
1-Chlorobutane	3.13E+03	ns	5.19E+04	ns	1.42E+04	ns	6.31E+02	n	2.27E-01	4.53E+00
Chlorodifluoromethane	1.02E+05	nls	4.83E+05	nls	8.98E+04	ns	1.04E+05	n	4.27E+01	8.55E+02
Chloroform	5.90E+00	c	2.87E+01	c	1.34E+02	c	2.29E+00	c	5.46E-04	1.09E-02
Chloromethane	4.11E+01	c	2.01E+02	c	2.35E+02	n	2.03E+01	c	4.76E-03	9.51E-02
3-Chloronaphthalene	6.26E+03	n	1.04E+05	nl	2.83E+04	ns	7.33E+02	n	2.85E+00	5.70E+01
o-Chloronitrobenzene	1.78E+01	c	8.55E+01	c	8.39E+01	n	2.35E+00	c	1.71E-03	3.42E-02
p-Chloronitrobenzene	6.16E+01	n	9.16E+02	n	2.57E+02	n	1.79E+01	n	1.28E-02	2.57E-01
2-Chlorophenol	3.91E+02	n	6.49E+03	n	1.77E+03	n	9.10E+01	n	5.76E-02	1.15E+00
2-Chloropropane	2.86E+02	n	1.35E+03	ns	2.51E+02	ns	2.09E+02	n	6.31E-02	1.26E+00
o-Chlorotoluene	1.56E+03	ns	2.60E+04	ns	7.08E+03	ns	2.33E+02	n	1.78E-01	3.56E+00
Chromium III	1.17E+05	nl	1.95E+06	nl	5.31E+05	nl	1.36E+04	n	2.46E+07	4.91E+08
Chromium VI	3.05E+00	c	7.21E+01	c	6.69E+01	c	2.52E-01	c	4.84E-03	9.68E-02
Chromium (Total)	9.66E+01	c	5.05E+02	c	1.34E+02	n	5.59E+00	c	1.01E+04	2.01E+05
Chrysene	1.53E+02	c	3.23E+03	c	2.31E+04	c	3.43E+01	c	9.30E+00	1.86E+02
Copper	3.13E+03	n	5.19E+04	n	1.42E+04	n	7.90E+02	n	2.78E+01	5.56E+02
Crotonaldehyde	3.66E+00	c	1.91E+01	c	1.30E+02	c	4.04E-01	c	7.11E-05	1.42E-03
Cumene (isopropylbenzene)	2.36E+03	ns	1.42E+04	ns	2.74E+03	ns	4.47E+02	n	5.69E-01	1.54E+01
Cyanide	1.12E+01	n	6.33E+01	n	1.21E+01	n	1.46E+00	n	2.61E-04	5.22E-03
Cyanogen	7.82E+01	n	1.30E+03	n	3.54E+02	n	1.99E+01	n	4.01E-03	8.01E-02
Cyanogen bromide	7.04E+03	n	1.17E+05	nl	3.19E+04	n	1.80E+03	n	5.29E-01	1.06E+01
Cyanogen chloride	3.91E+03	n	6.49E+04	n	1.77E+04	n	9.99E+02	n	2.94E-01	5.88E+00
DDD	2.22E+01	c	1.07E+02	c	7.78E+02	c	3.06E-01	c	5.39E-02	1.08E+00
DE	1.57E+01	c	7.55E+01	c	5.49E+02	c	2.29E+00	c	4.04E-01	8.08E+00

Chemical	Residential Soil (mg/kg)	End-point	Industrial/Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	Tap Water (ug/L)	End-point	Risk-based SSL for a DAF of 1 (mg/kg)	Risk-based SSL for a DAF of 20 (mg/kg)
DDT	1.87E+01	c	9.50E+01	c	1.62E+02	n	2.29E+00	c	5.80E-01	1.16E+01
Dibenz(a,h)anthracene	1.53E+01	c	3.23E+00	c	2.40E+01	c	1.06E+01	c	3.05E+01	6.11E+00
1,2-Dibromo-3-chloropropane	8.58E-02	c	1.18E+00	c	5.53E+00	c	3.36E-03	c	1.17E-06	2.34E-05
Dibromochloromethane	1.39E+01	c	6.74E+01	c	3.40E+02	c	1.68E+00	c	3.77E+04	7.54E+03
1,2-Dibromoethane	6.72E-01	c	3.31E+00	c	1.63E+01	c	7.46E-02	c	1.76E-05	3.52E-04
1,4-Dichloro-2-butene	1.15E+01	c	5.58E+01	c	2.59E+00	c	1.34E+02	c	5.00E-06	9.99E-05
1,2-Dichlorobenzene	2.15E+03	ns	1.30E+04	ns	2.50E+03	ns	3.02E+02	n	2.29E-01	4.58E+00
1,4-Dichlorobenzene	3.28E+01	c	1.59E+02	c	7.46E+02	c	4.81E+00	c	3.60E-03	7.20E-02
3,3-Dichlorobenzidine	1.18E+01	c	5.70E+01	c	4.10E+02	c	1.24E+00	c	6.14E-03	1.23E-01
Dichlorodifluoromethane	1.82E+02	n	8.65E+02	ns	1.61E+02	n	1.97E+02	n	3.61E+01	7.23E+00
1,1-Dichloroethane	7.86E+01	c	3.83E+02	c	1.82E+03	cs	2.75E+01	c	6.79E-03	1.36E-01
1,2-Dichloroethane	8.32E+00	c	4.07E+01	c	5.38E+01	n	1.71E+00	c	4.07E+04	8.14E+03
cis-1,2-Dichloroethene	1.56E+02	n	2.60E+03	ns	7.08E+02	n	3.65E+01	n	9.18E-03	1.84E-01
trans-1,2-Dichloroethene	2.95E+02	n	1.61E+03	ns	3.05E+02	n	9.32E+01	n	2.35E+02	4.69E+01
1,1-Dichloroethene	4.40E+02	n	2.26E+03	ns	4.24E+02	n	2.84E+02	n	9.74E-02	1.95E+00
2,4-Dichlorophenol	1.85E+02	n	2.75E+03	n	8.07E+02	n	4.53E+01	n	4.13E-02	8.25E-01
1,2-Dichloropropane	1.78E+01	c	8.68E+01	c	2.54E+01	n	4.37E+00	c	1.21E-03	2.43E-02
1,3-Dichloropropene	2.93E+01	c	1.46E+02	c	1.30E+02	n	4.70E+00	c	1.40E-03	2.80E-02
Dicyclopentadiene	1.73E+00	n	8.14E+00	n	1.51E+00	n	6.25E-01	n	1.71E-03	3.42E-02
Dieldrin	3.33E+01	c	1.60E+00	c	1.17E+01	c	1.71E+02	c	5.18E-04	1.04E-02
Diethyl phthalate	4.93E+04	n	7.33E+05	nl	2.15E+05	nl	1.48E+04	n	4.89E+00	9.79E+01
Dibutyl phthalate (Dibutyl phthalate)	1.61E+03	n	9.16E+04	n	2.69E+04	n	8.85E+02	n	1.69E+00	3.38E+01
2,4-Dimethylphenol	1.23E+03	n	1.83E+04	n	5.38E+03	n	3.54E+02	n	3.22E-01	6.45E+00
4,6-Dinitro-o-cresol	4.93E+00	n	7.33E+01	n	2.15E+01	n	1.51E+00	n	1.97E-03	3.94E-02
2,4-Dinitrophenol	1.23E+02	n	1.83E+03	n	5.38E+02	n	3.88E+01	n	3.35E-02	6.71E-01
2,4-Dinitrotoluene	1.71E+01	c	8.23E+01	c	5.36E+02	n	2.37E+00	c	2.46E-03	4.91E-02
2,6-Dinitrotoluene	3.56E+00	c	1.72E+01	c	8.09E+01	n	4.84E-01	c	5.10E-04	1.02E-02
2,4,2,6-Dinitrotoluene Mixture	7.83E+00	c	3.77E+01	c	2.77E+02	c	1.06E+00	c	1.12E-03	2.23E-02
1,4-Dioxane	5.33E+01	c	2.57E+02	c	1.88E+03	c	7.76E+00	c	1.38E-03	2.75E-02
1,2-Diphenylhydrazine	6.66E+00	c	3.21E+01	c	2.34E+02	c	7.73E-01	c	1.88E-03	3.76E-02
Endosulfan	3.70E+02	n	5.50E+03	n	1.61E+03	n	9.87E+01	n	1.02E+00	2.04E+01
Endrin	1.85E+01	n	2.75E+02	n	8.07E+01	n	2.23E+00	n	6.77E-02	1.35E+00
Epichlorohydrin	4.27E+01	n	2.15E+02	n	4.02E+01	n	2.05E+00	n	3.86E-04	7.72E-03

Chemical	Residential Soil (mg/kg)	End-point	Industrial/Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	Tap Water (ug/L)	End-point	Risk-based SSL for a DAF of 1 (mg/kg)	Risk-based SSL for a DAF of 20 (mg/kg)
Ethyl acetate	1.82E+03	n	8.75E+03	n	1.63E+03	n	1.45E+02	n	2.64E+02	3.52E+01
Ethyl acrylate	1.45E+02	c	7.57E+02	c	5.16E+03	cs	1.56E+01	c	2.99E-03	5.97E-02
Ethyl chloride	1.90E+04	ns	8.95E+04	ns	1.66E+04	ns	2.09E+04	n	7.537E+00	1.07E+02
Ethyl ether	1.56E+04	ns	2.60E+05	nls	7.08E+04	ns	3.93E+03	n	7.60E-01	1.52E+01
Ethyl methacrylate	2.73E+03	ns	1.78E+04	ns	3.48E+03	ns	4.55E+02	n	1.915E+02	1.83E+00
Ethylbenzene	7.51E+01	c	3.68E+02	cs	1.77E+03	cs	1.49E+01	c	1.31E-02	2.62E-01
Ethylene oxide	5.02E+00	c	2.48E+01	c	1.23E+02	c	1.508E+01	c	9.09E+05	1.82E+03
Fluoranthene	2.32E+03	n	3.37E+04	n	1.00E+04	n	8.02E+02	n	6.69E+01	1.34E+03
Fluorene	2.32E+03	n	3.37E+04	n	1.00E+04	n	2.88E+02	n	4.00E+00	8.00E+01
Fluoride	4.69E+03	n	7.78E+04	n	1.81E+04	n	1.18E+03	n	1.78E+02	3.56E+03
Furan	7.24E+01	n	1.15E+03	n	3.54E+02	n	1.92E+01	n	1.612E+03	1.22E+01
Heptachlor	1.18E+00	c	5.70E+00	c	4.15E+01	c	4.39E-02	c	2.73E-03	5.45E-02
Hexachlorobenzene	3.33E+00	c	1.60E+01	c	1.17E+02	c	4.87E-01	c	4.61E+03	9.22E+02
Hexachloro-1,3-butadiene	6.16E+01	n	3.29E+02	c	2.69E+02	n	2.95E+00	c	4.39E-03	8.79E-02
Hexachlorocyclopentadiene	3.70E+02	n	5.49E+03	n	8.67E+02	n	2.78E+01	n	6.68E+02	1.34E+00
Hexachloroethane	4.31E+01	n	6.41E+02	c	1.88E+02	n	6.80E+00	n	3.31E-03	6.62E-02
n-Hexane	6.15E+02	ns	3.20E+03	ns	6.03E+02	ns	3.19E+02	n	2.78E+00	5.57E+01
HMX	3.85E+03	n	6.33E+04	n	1.74E+04	n	1.00E+03	n	9.72E-01	1.94E+01
Hydrazine anhydride	1.78E+00	c	8.55E+00	c	5.99E+01	c	2.60E+01	c	4.50E+05	9.00E+04
Hydrogen cyanide	1.02E+01	n	5.72E+01	n	1.09E+01	n	1.46E+00	n	2.61E-04	5.22E-03
Indeno(1,2,3-c,d)pyrene	1.53E+00	c	3.23E+01	c	2.40E+02	c	3.43E+01	c	1.00E+00	2.01E+01
Iron	5.48E+04	n	9.08E+05	nl	2.48E+05	nl	1.38E+04	n	3.48E+02	6.96E+03
Isobutanol (Isobutyl alcohol)	1.85E+04	n	2.75E+05	nl	8.07E+04	n	5.91E+03	n	1.05E+00	2.10E+01
Isophorone	5.61E+03	c	2.70E+04	c	5.37E+04	n	7.79E+02	c	2.11E-01	4.22E+00
Lead	4.00E+02	IEUBK	8.00E+02	IEUBK	8.00E+02	IEUBK				
Lead (tetraethyl-)	6.16E-03	n	9.16E-02	n	3.54E-02	n	1.24E-03	n	4.70E-06	9.41E-05
Maleic hydrazide	3.08E+04	n	4.58E+05	nl	1.35E+05	nl	1.00E+04	n	1.79E+00	3.57E+01
Manganese	1.05E+04	n	1.60E+05	nl	4.64E+02	n	2.02E+03	n	1.31E+02	2.63E+03
Mercury (elemental)	2.38E+01	ns	1.12E+02	ns	2.07E+01	ns	6.26E-01	n	3.27E+02	6.54E+01
Mercury (methyl)	7.82E+00	n	1.30E+02	n	3.54E+01	n	1.96E+00	n	4.45E-04	8.89E-03
Mercury (salts)	2.35E+01	n	3.89E+02	ns	7.71E+01	n	4.92E+00	n	2.56E+01	5.13E+00
Methacrylonitrile	7.70E+00	n	1.23E+02	n	3.28E+01	n	1.91E+00	n	3.71E-04	7.43E-03
Methionyl	1.54E+03	n	2.29E+04	n	6.73E+03	n	4.98E+02	n	1.937E+02	1.87E+00

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	Tap Water (ug/L)	End-point	Risk-based SSL for a DAF of 1 (mg/kg)	Risk-based SSL for a DAF of 20 (mg/kg)
Methyl acetate	7.82E+04	ns	1.30E+06	nls	3.54E+05	nls	1.99E+04	n	3.55E+00	7.11E+01
Methyl acrylate	3.50E+02	in	1.85E+03	n	3.48E+02	in	3.90E+01	in	7.13E+03	1.43E+01
Methyl isobutyl ketone	5.81E+03	ns	8.16E+04	ns	2.02E+04	ns	1.24E+03	n	2.40E-01	4.80E+00
Methyl methacrylate	1.11E+04	ns	5.65E+04	ns	1.06E+04	ns	1.39E+03	in	2.61E+01	5.22E+00
Methyl styrene (alpha)	5.48E+03	ns	9.08E+04	ns	2.48E+04	ns	7.65E+02	n	9.43E-01	1.89E+01
Methyl styrene (mixture)	2.73E+02	ns	2.20E+03	ns	4.49E+02	ns	3.73E+01	in	4.70E+02	9.40E+01
Methylcyclohexane	5.50E+03	ns	2.59E+04	ns	4.82E+03	ns	6.26E+03	n	1.58E+01	3.16E+02
Methylene bromide (Dibromomethane)	5.79E+01	n	2.88E+02	n	5.99E+01	n	8.00E+00	in	1.68E+03	3.35E+02
Methylene chloride	4.09E+02	n	5.13E+03	ns	1.21E+03	n	1.06E+02	n	2.35E-02	4.71E-01
Molybdenum	3.91E+02	n	6.49E+03	n	1.77E+03	n	9.87E+01	in	1.99E+00	3.98E+01
Naphthalene	4.97E+01	c	2.41E+02	c	1.59E+02	n	1.65E+00	c	4.11E-03	8.23E-02
Nickel	1.56E+03	n	2.57E+04	n	7.53E+02	n	3.72E+02	n	2.42E+01	4.85E+02
Nitrate	1.25E+05	nl	2.08E+06	nl	5.66E+05	nl	3.16E+04	n	2.13E+01	4.25E+02
Nitrite	7.82E+03	n	1.30E+05	nl	3.54E+04	n	1.97E+03	n	1.33E+00	2.66E+01
Nitrobenzene	6.04E+01	c	2.93E+02	c	3.53E+02	n	1.40E+00	c	7.20E-04	1.44E-02
Nitroglycerin	6.16E+00	n	9.16E+01	n	2.69E+01	n	1.96E+00	n	6.80E+04	1.36E+02
N-Nitrosodiethylamine	7.94E-03	c	1.71E-01	c	1.25E+00	c	1.65E-03	c	4.92E-07	9.84E-06
N-Nitrosodimethylamine	2.34E-02	c	5.03E-01	c	2.44E+00	n	4.90E-03	c	1.02E-06	2.03E-05
N-Nitrosodi-n-butylamine	7.81E-01	c	3.77E+00	c	2.46E+01	c	2.72E-02	c	4.21E-05	8.41E-04
N-Nitrosodiphenylamine	1.09E+03	c	5.24E+03	c	3.79E+04	c	1.21E+02	c	4.98E+01	9.95E+00
N-Nitrosopyrrolidine	2.54E+00	c	1.22E+01	c	8.89E+01	c	3.70E-01	c	1.15E-04	2.30E-03
m-Nitrotoluene	6.16E+00	n	9.16E+01	n	2.69E+01	n	1.74E+00	n	1.25E+03	2.50E+02
o-Nitrotoluene	3.16E+01	c	1.65E+02	c	3.19E+02	n	3.13E+00	c	2.28E-03	4.56E-02
p-Nitrotoluene	2.47E+02	n	1.60E+03	c	1.08E+03	n	4.24E+01	c	3.05E-02	6.09E-01
Pentachlorobenzene	4.93E+01	n	7.33E+02	n	2.15E+02	n	3.07E+00	n	1.76E-02	3.52E-01
Pentachlorophenol	1.85E+00	c	4.45E+01	c	3.46E+02	c	4.00E+01	c	3.04E-03	6.08E-02
Perchlorate	5.48E+01	n	9.08E+02	ns	2.48E+02	n	1.38E+01	n	5.85E-03	1.17E-01
Phenanthrene	1.74E+03	n	2.53E+04	n	7.53E+03	n	1.70E+02	n	4.30E+00	8.59E+01
Phenol	1.85E+04	n	2.75E+05	nl	7.74E+04	n	5.76E+03	n	2.62E+00	5.23E+01
Polychlorinated biphenyls (PCBs)										
Aroclor 1016	3.98E+00	n	5.74E+01	n	1.72E+01	n	1.40E+00	n	1.01E-01	2.01E+00
Aroclor 1221	1.81E+00	c	8.57E+00	c	5.53E+01	cs	5.54E+02	c	7.08E-04	1.42E-02
Aroclor 1232	1.86E+00	c	8.82E+00	c	5.76E+01	cs	5.54E-02	c	7.08E-04	1.42E-02

Chemical	Residential Soil (mg/kg)	End-point	Industrial/Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	Tap Water (ug/L)	End-point	Risk-based SSL for a DAF of 1 (mg/kg)	Risk-based SSL for a DAF of 20 (mg/kg)
Aroclor 1242	2.43E+00	c	1.15E+01	c	8.53E+01	c	3.89E-01	c	4.57E-02	9.14E-01
Aroclor 1248	2.43E+00	c	1.15E+01	c	8.53E+01	c	3.89E-01	c	4.48E-02	8.96E-01
Aroclor 1254	2.43E+00	n	1.15E+01	c	4.91E+00	n	3.89E-01	c	7.63E-02	1.53E+00
Aroclor 1260	2.43E+00	c	1.15E+01	c	8.53E+01	c	3.89E-01	c	2.04E-01	4.09E+00
2,2',3,3',4,4',5'-Heptachlorobiphenyl (PCB 170)	3.75E-01	c	1.77E+01	c	1.72E+01	n	5.99E-02	c	3.14E-01	6.29E+00
2,2',3,4,4',5'-Heptachlorobiphenyl (PCB 180)	3.75E+00	c	1.77E+01	c	1.72E+01	n	5.99E-01	c	3.14E-01	6.29E+00
2,3,3',4,4',5'-Heptachlorobiphenyl (PCB 189)	3.125E+00	c	5.89E+00	c	5.73E+00	n	2.00E-01	c	1.05E-01	2.10E+00
2,3',4,4',5'-Hexachlorobiphenyl (PCB 167)	1.25E+00	c	5.89E+00	c	5.73E+00	n	2.00E-01	c	6.27E-02	1.25E+00
2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157)	1.25E+00	c	5.89E+00	c	5.73E+00	n	2.00E-01	c	6.40E-02	1.28E+00
2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 156)	1.25E+00	c	5.89E+00	c	5.73E+00	n	2.00E-01	c	6.40E-02	1.28E+00
3,3',4,4',5'-Hexachlorobiphenyl (PCB 169)	3.125E-03	c	5.89E-03	c	5.73E-03	n	2.00E-04	c	6.27E-05	1.25E-03
2,3,4,4',5'-Pentachlorobiphenyl (PCB 123)	1.25E+00	c	5.89E+00	c	5.73E+00	n	2.00E-01	c	3.91E-02	7.83E-01
2,3',4,4',5'-Pentachlorobiphenyl (PCB 118)	3.125E+00	c	5.89E+00	c	5.73E+00	n	2.00E-01	c	3.84E-02	7.67E-01
2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)	1.25E+00	c	5.89E+00	c	5.73E+00	n	2.00E-01	c	3.91E-02	7.83E-01
2,3,4,4',5'-Pentachlorobiphenyl (PCB 114)	3.125E+00	c	5.89E+00	c	5.73E+00	n	2.00E-01	c	3.91E-02	7.83E-01
3,3',4,4',5'-Pentachlorobiphenyl (PCB 126)	3.75E-04	c	1.77E-03	c	1.72E-03	n	5.99E-05	c	1.15E-05	2.30E-04
3,3',4,4'-Tetrachlorobiphenyl (PCB 77)	3.75E-01	c	1.77E+00	c	1.72E+00	n	5.99E-02	c	7.03E-03	1.41E-01
3,4,4',5'-Tetrachlorobiphenyl (PCB 81)	1.25E-01	c	5.89E-01	c	5.73E-01	n	2.00E-02	c	2.34E-03	4.69E-02
Propylene oxide	2.56E+01	c	1.33E+02	c	7.99E+02	n	2.66E+00	c	4.82E-04	9.65E-03
Pyrene	1.74E+03	n	2.53E+04	n	7.53E+03	n	1.17E+02	n	9.59E+00	1.92E+02
RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine)	6.04E+01	c	3.11E+02	c	1.01E+03	n	7.02E+00	c	2.16E-03	4.31E-02
Selenium	3.91E+02	n	6.49E+03	n	1.75E+03	n	9.87E+01	n	5.11E-01	1.02E+01
Silver	3.91E+02	n	6.49E+03	n	1.77E+03	n	8.12E+01	n	6.88E-01	1.38E+01
Strontium	4.69E+04	n	7.79E+05	nl	2.12E+05	nl	1.18E+04	n	4.17E+02	8.33E+03
Styrene	7.26E+03	ns	5.13E+04	ns	1.02E+04	ns	1.21E+03	n	1.03E+00	2.06E+01
Sulfolane	6.16E+01	n	9.16E+02	n	2.65E+02	n	2.00E+01	n	3.75E-03	7.49E-02
2,3,7,8-TCDD	4.90E-05	c	2.48E-04	c	2.26E-04	n	5.99E-06	c	2.24E-06	4.48E-05
2,3,7,8-TCDF	4.90E-04	c	2.48E-03	c	1.72E-02	c	2.01E-06	c	4.22E-07	8.44E-06
1,2,4,5-Tetrachlorobenzene	1.85E+01	n	2.75E+02	n	8.07E+01	n	1.66E+00	n	5.83E-03	1.17E-01
1,1,1,2-Tetrachloroethane	2.81E+01	c	1.37E+02	c	6.59E+02	cs	5.72E+00	c	1.80E-03	3.59E-02
1,1,2,2-Tetrachloroethane	7.98E+00	c	3.94E+01	c	1.97E+02	c	7.57E-01	c	2.40E-04	4.80E-03
Tetrachloroethene	1.11E+02	ns	6.29E+02	ns	1.20E+02	ns	4.03E+01	n	1.60E-02	3.21E-01
Triyl (Trinitrophenyl)methyl nitramine	1.56E+02	n	2.59E+03	nl	7.06E+02	n	3.94E+01	n	2.79E-01	5.59E+00

Chemical	Residential Soil (mg/kg)	End-point	Industrial/Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	Tap Water (ug/L)	End-point	Risk-based SSL for a DAF of 1 (mg/kg)	Risk-based SSL for a DAF of 20 (mg/kg)
Thallium	7.82E-01	n	1.30E+01	n	3.54E+00	n	1.97E-01	n	1.41E-02	2.81E-01
Toluene	5.23E+03	ns	6.13E+04	ns	1.40E+04	ns	1.09E+03	n	16.07E+01	1.21E+01
Toxaphene	4.84E+00	c	2.33E+01	c	1.70E+02	c	1.53E-01	c	1.77E-02	3.54E-01
Tribromomethane (Bromoform)	6.74E+02	c	3.25E+03	c	5.38E+03	n	9.19E+01	c	2.05E+02	7.11E+01
1,1,2-Trichloro-1,2,2-trifluoroethane	5.08E+04	ns	2.43E+05	nl	4.53E+04	ns	5.50E+04	n	1.60E+02	3.20E+03
1,2,4-Trichlorobenzene	8.29E+01	n	7.423E+02	ns	7.91E+01	n	3.98E+00	n	8.82E+03	1.76E+01
1,1,1-Trichloroethane	1.44E+04	ns	7.25E+04	ns	1.36E+04	ns	8.00E+03	n	2.55E+00	5.11E+01
1,1,2-Trichloroethane	2.61E+00	n	1.24E+01	n	2.30E+00	n	4.15E-01	n	1.11E+04	2.23E+03
Trichloroethylene	6.77E+00	n	3.65E+01	n	6.90E+00	n	2.82E+00	n	8.75E-04	1.75E-02
Trichlorofluoromethane	1.23E+03	ns	6.03E+03	ns	1.13E+03	ns	1.14E+03	n	7.84E+01	1.57E+01
2,4,5-Trichlorophenol	6.16E+03	n	9.16E+04	n	2.69E+04	n	1.17E+03	n	3.31E+00	6.62E+01
2,4,6-Trichlorophenol	1.616E+01	n	3.916E+02	n	2.69E+02	n	1.19E+01	n	3.37E+02	6.74E+01
1,1,2-Trichloropropane	3.91E+02	n	6.49E+03	ns	1.77E+03	ns	8.81E+01	n	2.79E-02	5.59E-01
1,2,3-Trichloropropane	5.10E+02	c	1.21E+00	c	6.31E+00	n	7.47E+03	c	2.60E+06	5.21E+05
Triethylamine	1.93E+02	n	9.09E+02	n	1.69E+02	n	1.46E+01	n	3.65E-03	7.31E-02
2,4,6-Trinitrotoluene	3.60E+01	n	5.73E+02	n	1.61E+02	n	9.80E+00	n	7.430E+02	8.61E+01
Uranium (soluble salts)	2.34E+02	n	3.88E+03	ns	2.77E+02	ns	5.92E+01	n	2.67E+01	5.33E+02
Vanadium	3.94E+02	n	6.53E+03	n	6.14E+02	n	6.31E+01	n	6.31E+01	1.26E+03
Vinyl acetate	2.56E+03	n	1.24E+04	ns	2.30E+03	ns	4.09E+02	n	7.52E-02	1.50E+00
Vinyl bromide	2.71E+00	c	1.31E+01	c	8.46E+00	n	1.75E+00	c	4.62E-04	9.23E-03
Vinyl chloride	7.42E-01	c	2.84E+01	c	1.61E+02	c	2.01E-01	c	6.75E-05	1.35E-03
m-Xylene	7.64E+02	ns	3.73E+03	ns	6.96E+02	ns	1.93E+02	n	1.48E+01	2.97E+00
o-Xylene	8.05E+02	ns	3.94E+03	ns	7.36E+02	ns	1.93E+02	n	1.49E-01	2.98E+00
Xylenes	3.871E+02	ns	4.28E+03	ns	7.98E+02	ns	1.93E+02	n	1.49E+01	2.98E+00
Zinc	2.35E+04	n	3.89E+05	nl	1.06E+05	nl	5.96E+03	n	3.71E+02	7.41E+03

c – carcinogen  
 cs - carcinogenic, SSL may exceed saturation  
 DAF – Dilution Attenuation Factor  
 mg/kg – milligrams per kilogram  
 n – noncarcinogenic  
 nl - noncarcinogen, SSL may exceed ceiling limit  
 ns - noncarcinogen, SSL may exceed saturation

nl - noncarcinogen, SSL may exceed both saturation and ceiling limit  
 SSL – Soil Screening Level  
 ug/L – micrograms per liter