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NMED
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Los Alamos
NATIONAL LABORATORY
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Environmental Protection Division
Environmental Compliance Programs (ENV-CP)
PO Box 1663, K490
Los Alamos, New Mexico 87545
(505) 667-0666

National Nuclear Security Administration
Los Alamos Field Office, A316
3747 West Jemez Road
Los Alamos, New Mexico, 87545
(505) 667-5794/Fax (505) 667-5948

Date: November 24, 2015
Symbol: ENV-DO-15-0327
LA-UR: 15-26789
Locates Action No.: N/A

Ms. Michelle Hunter, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2261
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

Dear Ms. Hunter:

Subject: **Review Comments, Draft Discharge Permit DP-1835, Class V Underground Injection Control Wells**

On October 30, 2015, the New Mexico Environment Department (NMED) gave notice (Enclosure 1) of a 30-day public comment period for draft Discharge Permit DP-1835 to the U.S. Department of Energy and Los Alamos National Security, LLC (hereafter: Permittees) for the discharge of treated groundwater to a network of Class V Underground Injection Control Wells. The Permittees have reviewed the draft Discharge Permit DP-1835 and prepared the enclosed written comments for your consideration.

- Enclosure 2: A redline-strikeout of the draft Discharge Permit showing all comments
- Enclosure 3: A master table listing all comments on the draft Discharge Permit

The Permittees believe these comments help to clarify the draft Discharge Permit, and that proposed alternative text will facilitate final permit issuance. To address significant and outstanding issues stated in the comments, however, the Permittees request that a hearing be scheduled pursuant to NMAC 20.6.2.3108.K. The Permittees are hopeful that their concerns may be resolved in advance of a public hearing, and, if successful, will immediately withdraw the hearing request.

Please contact Robert S. Beers by telephone at (505) 667-7969 or by email at bbeers@lanl.gov if you have questions regarding the enclosed comments.

Sincerely,

Alison M. Dorries
Division Leader
Environmental Protection Division
Los Alamos National Security LLC

Sincerely,

Gene E. Turner
Environmental Permitting Manager
National Security Missions
Los Alamos Field Office
U.S. Department of Energy

AMD:BTH:MTS:RSB/lm

Enclosures: (1) NMED Public Notice 2 for Discharge Permit DP-1835
(2) A redline-strikeout of the draft Discharge Permit showing all comments
(3) A master table listing all comments on the draft Discharge Permit

Cy: James Hogan, NMED/SWQB, Santa Fe, NM, (E-File)
John E. Kieling, NMED/HWB, Santa Fe, NM, (E-File)
Steven M. Yanicak, NMED/DOE/OB, (E-File)
Gene E. Turner, LASO-NS-LP, (E-File)
Cheryl L. Rodriguez, EM-SG, (E-File)
Brian T. Hennessey, EM-LA, (E-File)
Kirsten M. Laskey, EM-LA, (E-File)
Craig S. Leasure, PADOPS, (E-File)
Amy E. De Palma, PADOPS, (E-File)
Michael T. Brandt, ADESH, (E-File)
Raeanna Sharp-Geiger, ADESH, (E-File)
Randall Mark Erickson, ADEP, (E-File)
Enrique Torres, ADEP, (E-File)
Bruce Robinson, ADEP-PDO, (E-File)
Alison M. Dorries, ENV-DO, (E-File)
Stephani F. Swickley, ADEP-PDO, (E-File)
Danny Katzman, ADEP-PDO, (E-File)
Alan S. MacGregor, ER-ES, (E-File)
Gerald F. Fordham, ES-EPD, (E-File)
Michael T. Saladen, ENV-CP, (E-File)
Robert S. Beers, ENV-CP, (E-File)
lasomailbox@nnsa.doe.gov, (E-File)
locatesteam@lanl.gov, (E-File)
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GROUND WATER
NOV 24 2015
BUREAU

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ENCLOSURE 1

NMED Public Notice (PN) 2 for
Discharge Permit DP-1835

ENV-DO-15-0327

LA-UR-15-28979

Date: NOV 2 4 2015

Notice is hereby given pursuant to 20.6.2.3108.H NMAC, the following Ground Water Discharge Permit applications have been proposed for approval. To request additional information or to obtain a copy of a draft permit, contact the Ground Water Quality Bureau in Santa Fe at (505) 827-2900. Draft permits may also be viewed on-line at http://www.nmenv.state.nm.us/gwb/NMED-GWQB-PublicNotice.htm

NOTE – If viewing by WEB - Click on facility name to review a copy of the draft permit.

DP #	Facility/Applicant	Closest City	County	Notice	NMED Permit Contact
521	West Mesa Disposal Site Charles Leder Plant Operations Division Manager Albuquerque Bernalillo County Water Authority 4201 2nd Street SW Albuquerque, NM 87105	Albuquerque	Bernalillo	DP-521, West Mesa Disposal Site, Charles Leder, Plant Operations Manager, proposes to renew the Discharge Permit for the discharge of up to 95,000 gallons per day (or up to 80.3 dry metric tons per day) of treated municipal sludge generated from the City of Albuquerque Southside Water Reclamation Plant to the West Mesa Disposal Site. Potential contaminants from this type of discharge include nitrogen compounds and metals. The facility is located at 7400 Access Road NW, Albuquerque, in Sections 3, 4, 5, 8, 9, 10, 14, 15, 16, 17, 22, 23, 26, 27, and 34, T11N, R01E, Bernalillo County. Groundwater beneath the site is at a depth of approximately 922 feet and has a total dissolved solids concentration of approximately 458 milligrams per liter.	Matthew Slafkosky matthew.slafkosky@state.nm.us
1735	Las Cruces Country Club Golf Course Robert Caldwell President Las Cruces Country Club, Inc. 1274 Golf Course Road Las Cruces, NM 88011	Las Cruces	Doña Ana	DP-1735, Las Cruces Country Club Golf Course, Robert Caldwell, President, proposes to renew the Discharge Permit for the transfer of up to 680,000 gallons per day of reclaimed domestic wastewater from the City of Las Cruces-East Mesa Water Reclamation Facility to the Las Cruces Country Club Golf Course to irrigate approximately 130 acres of landscape. Potential contaminants associated with this type of discharge include nitrogen compounds. The facility is located at 1274 Golf Course Road, in Las Cruces, in Section 4, Township 23S, Range 02E, Doña Ana County. Groundwater most likely to be affected is at a depth of approximately 430 feet and has a total dissolved solids concentration of approximately 1,395 milligrams per liter.	Gerald Knutson gerald.knutson@state.nm.us
1059	North Hurley Wastewater Treatment and Disposal	North Hurley	Grant	DP-1059, North Hurley Wastewater Treatment and Disposal System, Justin Reese, Public Works Director,	Gerald Knutson gerald.knutson@state.nm.us

	System Justin Reese, Public Works Director Grant County P.O. Box 898 Silver City, NM 88062			proposes to renew the Discharge Permit solely for groundwater monitoring associated with past discharges of domestic wastewater. Potential contaminants associated with this type of discharge include nitrogen compounds. The facility is located at 22 Cottonwood Street (Phase 1) and 15 Horseshoe Street (Phases 2&3), in North Hurley, in Section 19, Township 18S, Range 12W, Grant County. Groundwater most likely to be affected is at a depth of approximately 7.5-20 feet and has a total dissolved solids concentration of approximately 350 milligrams per liter.	
1835	Los Alamos National Laboratory Robert S. Beers Environmental Professional Los Alamos National Security, LLC P.O. Box 1663 Mail Stop K490 Los Alamos, NM 87545	Los Alamos	Los Alamos	DP-1835, Los Alamos National Laboratory, Robert S. Beers, Environmental Professional with Los Alamos National Security, LLC proposes the discharge of up to 648,000 gallons per day of remediated groundwater to an Class V Underground Injection Control system. Potential contaminants from this type of discharge include chlorides and metals. The treatment and discharge locations are within the boundaries of Los Alamos National Laboratory in Mortandad Canyon, in Sections 24 and 25, T19N, R6E, Los Alamos County. Groundwater beneath the site is at a depth of approximately 50 feet and has a total dissolved solids concentration of approximately 150 milligrams per liter.	Greg Huey greg.huey@state.nm.us

Prior to ruling on any proposed Discharge Permit or its modification, the New Mexico Environment Department (NMED) will allow thirty days after the date of publication of this notice to receive written comments and during which time a public hearing may be requested by any interested person, including the applicant. Requests for public hearing shall be in writing and shall set forth the reasons why a hearing should be held. A hearing will be held if NMED determines that there is substantial public interest. Comments or requests for hearing should be submitted to the Ground Water Quality Bureau at PO Box 5469, Santa Fe, NM 87502-5469.

To view this and other public notices issued by the Ground Water Quality Bureau on-line, go to:
http://www.nmenv.state.nm.us/gwb/NMED-GWQB-PublicNotice.htm

ENCLOSURE 2

A redline-strikeout of the draft
Discharge Permit showing all comments

ENV-DO-15-0327

LA-UR-15-28979

Date: NOV 2 4 2015

GROUND WATER DISCHARGE PERMIT
Los Alamos National Laboratory
Underground Injection Control Wells
DRAFT DP-1835
(version October 29, 2015 for review)

I. INTRODUCTION

The New Mexico Environment Department (NMED) issues this Discharge Permit (Discharge Permit), DP-1835, to the United States Department of Energy (DOE) and to Los Alamos National Security, LLC (LANS) (collectively the ~~permitteepermittees~~) 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 injection of treated groundwater into the regional aquifer beneath Los Alamos National Laboratory ~~activities related to groundwater remediation projects 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 20.6.2.3109 NMAC have been or will be met. Pursuant to Section 20.6.2.3104 NMAC, it is the responsibility of the ~~permitteepermittees~~ to comply with the terms and conditions of this Discharge Permit; failure to do so may result in an enforcement action(s) by NMED (20.6.2.1220 NMAC).

The activities which produce the discharge, the location of the discharge, and the quantity, quality, and flow characteristics of the discharge are described as follows.

Up to 648,000 gallons per day (gpd) of contaminated groundwater is to be pumped from up to three extraction wells installed in the regional aquifer, treated in ion exchange (IX) treatment systems to meet the groundwater concentration limits set by 20.6.2.3103 NMAC, and injected into the regional aquifer through up to six Class V Underground Injection Control (UIC) wells. Treated groundwater from the IX systems may also be land applied under DP-1793.

Groundwater pumped from the three extraction wells (CrEX-1, CrEX-2, and Cr-EX-3) will be conveyed through double-walled piping with leak detection systems to the IX treatment systems. Multiple IX treatment trains, each consisting of a primary vessel and a polishing unit, will be operated to treat chromium levels to below the limits set by 20.6.2.3103 NMAC. Treated water will be pumped through single-walled piping and distributed to six Class V UIC wells (CrIN-1, CrIN-2, CrIN-3, CrIN-4, CrIN-5, and CrIN-6) that will be equipped with submersible pumps to allow for periodic backflushing as dictated by increased injection well pressures.

Specific monitoring of the extraction, treatment, and injection systems will be conducted ~~completed~~ to ensure proper system operation using a supervisory control and data acquisition (SCADA) control system, ~~with a centrally located computer station~~. Incoming data, including

flowrates, pressures, liquid levels, groundwater levels, motor status, and alarms from the system sites, will be monitored, flowrate of injected water will be managed by motor controlled valves, and pressure at each injection well will be maintained at a specified value using down-hole ~~Baski~~ pneumatic flow control valves (FCV).

The flow of treated water that is pumped into the injection wells will be controlled with the FCV to keep the down-hole discharge injection pipe filled ~~and under pressure~~ to prevent cascading of the water into the well. Once discharged from the FCV, the water will enter the injection well casing and gravity flow through the well screen into the formation. Pressure in the piping at the surface will be monitored by the control system, which will automatically adjust the FCV operation to maintain the pipeline pressure set point.

The water level in the injection well casing will be monitored by the control system through a down-hole pressure transducer. It is expected that the water pressure in the injection well casing will rise ~~10-15 psi~~ above that of the static water level during injection. Reduced injection capacity within the well is anticipated during on-going operation; thus, the control system will be programmed to alarm the operator and shut down ~~one or more extraction wells~~ the affected well(s) in the event that water levels within the injection well casing reach the high-level set point. High level alarm set points will be used to prevent the system from overflowing the wells and will be identified and fine-tuned during system startup. Water level rise in each injection well will be dependent upon the volume of water discharged to each well and its hydraulic characteristics. Therefore, these alarm set points will likely vary between wells and will likely be modified as initial operational data is collected and assessed.

The injection pipe will be equipped with a check valve and a submersible pump. This pump will be used to maintain well performance by back flushing the well as part of a regular maintenance program. Back flushing is anticipated once the water pressure within the injection well increases ~~10-12 psi~~ above the levels observed initially under static conditions. The specific levels above static conditions that will trigger the back flushing operation will be determined based upon operational conditions and will likely vary between wells. The level of injection well capacity improvement observed during initial back flushing will be used to develop on-going well maintenance schedules. The groundwater generated from injection well back flushing will be pumped into storage tanks, tested, transported to an IX treatment unit for treatment if necessary, and then land applied under DP-1793.

~~Treated water monitoring~~ Monitoring of the treated water will ensure that contaminant concentrations in the discharge do not exceed the 20.6.2.3103 NMAC standards or the limits in Table A-1 of the most recent version of NMED *Risk Assessment Guidance for Site Investigation and Remediation* for 20.6.2.7.WW NMAC Toxic Pollutants.

The groundwater to be treated and discharged may contain water contaminants which may be elevated above the standards of Section 20.6.2.3103 NMAC and/or toxic pollutants as defined in Subsection WW of 20.6.2.7 NMAC. Prior to discharge, all groundwater will be treated to achieve standards less than (<) 90% of the numeric standards of 20.6.2.3103 NMAC and <90%

of the numeric standards established for tap water in Table A-1 for constituents not listed in 20.6.2.3103 NMAC.

The discharge is located approximately 3 miles southeast of Los Alamos in sections 24 and 25, Township 19N, Range 06E, Los Alamos County, NM. Groundwater most likely to be affected lies in a regional aquifer from 900-1100 feet below ground surface (BGS) and has a total dissolved solids (TDS) concentration of approximately 150 milligrams per liter (mg/L).

The application (i.e. Discharge Plan) consists of the Discharge Permit Application and supporting materials submitted by the ~~permitteepermittees~~ on April 10, 2015 and October 08, 2015. 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 and/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 ~~permitteepermittees~~ may be required to implement abatement of water pollution and remediate groundwater contamination.

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

The following acronyms and abbreviations may be used in this Discharge Permit:

Abbreviation	Explanation		Abbreviation	Explanation
BGS	below ground surface		NO_3-N	nitrate-nitrogen
BOD_5	biochemical oxygen demand (5-day)		NTU	nephelometric turbidity units
CFR	Code of Federal Regulations		Org	organisms
Cl	chloride		TDS	total dissolved solids
EPA	United States Environmental Protection Agency		TKN	total Kjeldahl nitrogen
gpd	gallons per day		total nitrogen	= TKN + NO_3-N
LADS	land application data sheet(s)		TRC	Total Residual Chlorine
mg/L	milligrams per liter		TSS	total suspended solids
mL	milliliters		UPC	Uniform Plumbing Code
NMAC	New Mexico Administrative Code		WQA	New Mexico Water Quality Act
NMED	New Mexico Environment Department		WQCC	Water Quality Control Commission
NMSA	New Mexico Statutes Annotated		WWTF	Wastewater Treatment Facility
			Table A-1	Table A-1 of the NMED *Risk Assessment Guidance for Site Investigation and Remediation*

Abbreviation	Explanation		Abbreviation	Explanation
				(most recent version)

II. FINDINGS

In issuing this Discharge Permit, NMED finds:

1. The ~~permitteepermittees~~ are ~~is~~ discharging effluent or leachate from the facility 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 ~~permitteepermittees~~ are ~~is~~ discharging effluent from the facility so that such effluent 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 20.6.2.3101 NMAC.

3. The discharge from the facility is not subject to any of the exemptions of Section 20.6.2.3105 NMAC.

4. The ~~permitteepermittees~~ are ~~is~~ operating ~~a~~ Class V underground injection control (UIC) ~~recharge~~ wells within the meaning of 20.6.2.5002A(1) and 20.6.2.5002B(5)(d)(i) NMAC which is subject to the prohibition(s) listed under 20.6.2.5004A(4) NMAC.

III. AUTHORIZATION TO DISCHARGE

Pursuant to 20.6.2.3104 NMAC, it is the responsibility of the ~~permitteepermittees~~ to ensure that discharges authorized by this Discharge Permit are consistent with the terms and conditions herein.

The ~~permitteepermittees~~ are ~~is~~ authorized to process up to 648,000 gpd of groundwater through an ion exchange treatment system and discharge the treated effluent via six UIC wells to the regional groundwater aquifer in Sections 24 and 25 of T19N, R06E, Los Alamos County, NM.

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

IV. CONDITIONS

The following conditions shall be complied with by the ~~permitteepermittees~~ and are enforceable by NMED. The ~~permitteepermittees~~ are ~~is~~ authorized to discharge water contaminants subject to the following conditions:

A. OPERATIONAL PLAN

#	Terms and Conditions

#	Terms and Conditions
1.	The ~~permitteepermittees~~ shall implement the following operational plan to ensure compliance with Title 20, Chapter 6, Parts 1 and 2 NMAC. [20.6.2.3109.C NMAC]
2.	The ~~permitteepermittees~~ 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, 20.6.2.3109.C NMAC]
3.	Within one year of the effective date of this Discharge Permit (by Date), the ~~permitteepermittees~~ shall demonstrate the mechanical integrity of the distribution piping and injection wells ~~associated with this discharge permit.~~ Prior to testing, the ~~permitteepermittees~~ shall propose for NMED approval the test method to be used. The results of the mechanical integrity testing shall be submitted to NMED within 60 days of test completion. The ~~permitteepermittees~~ shall demonstrate mechanical integrity of the distribution piping and injection wells associated with this Discharge Permit at least once every five years. If an ~~the tubing is pulled or the packer is reseated in the~~ injection well is reconfigured, the ~~permitteepermittees~~ must conduct a mechanical integrity test prior to re-injection of treated groundwater ~~fluids~~ into the subsurface at that well. [Subsection C of 20.6.2.3106 NMAC, Subsection A of 20.6.2.3107 NMAC, Subsection B of 20.6.2.5204 NMAC]
4.	Prior to discharging from the IX systems to any of the six injection wells, the ~~permitteepermittees~~ shall submit written notification to NMED stating the date that the discharge is to commence. [20.6.2.3107.A NMAC]
5.	Prior to the initial discharge of treated effluent from the IX treatment system to the injection wells, and before injecting treated effluent following any major modification of the IX treatment system, ~~discharging from the IX systems to the direct injection wells,~~ the ~~permitteepermittees~~ shall submit documentation that the IX systems achieve standards less than (<) 90% of the numeric standards of 20.6.2.3103 NMAC and <90% of the numeric standards established for tap water in Table A-1 for constituents not listed in 20.6.2.3103 NMAC. [Subsections A and C of 20.6.2.1202 NMAC, Subsection C of 20.6.2.3109 NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]

#	Terms and Conditions
6.	The ~~permitteepermittees~~ shall maintain fences around all synthetically lined storage lagoons ~~any IX treatment facilities~~ to control access by the general public and animals. The fences shall consist of a minimum of six-foot chain link or field fencing and locking gates. Fences shall be maintained throughout the term of this Discharge Permit. [20.6.2.3109.B-C NMAC, NMSA 1978, §74-6-5.D]
7.	The ~~permitteepermittees~~ shall maintain signs printed in English and Spanish indicating that the treated effluent is not potable. Signs shall be posted at the UIC wellheads, the IX treatment systems, impoundments, storage vessels and other areas where there is potential for public contact with hazardous materials or equipment. ~~All signs shall be printed in English, Spanish, and Tewa and remain visible and legible for the term of this Discharge Permit.~~ [20.6.2.3109 NMAC.B-C, NMSA 1978, § 74-6-5.D]

B. MONITORING, REPORTING, AND OTHER REQUIREMENTS

#	Terms and Conditions
8.	The ~~permitteepermittees~~ shall conduct the monitoring, reporting, and other requirements listed below. [20.6.2.3107 NMAC]
9.	METHODOLOGY - Unless otherwise approved in writing by NMED, the ~~permitteepermittees~~ 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* (18th, 19th or current) 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) Federal Register, latest methods published for monitoring pursuant to Resource Conservation Recovery Act regulations f) U.S. Geological Survey, et al., *National Handbook of Recommended Methods for Water Data Acquisition* g) American Society of Agronomy, *Chemical Methods: Methods of Soil Analysis; Part 1.*

#	Terms and Conditions
	Physical and Mineralogical Methods; Part 2. Microbiological and Biochemical Properties; Part 3. **[20.6.2.3107.B NMAC]**
10	The ~~permitteepermittees~~ shall submit quarterly monitoring reports to NMED for the most recently completed quarterly period by the 1st of ~~June February, September May, December August, and~~ March ~~November~~ of each year, ~~.~~ as described below. The quarterly reports shall document the influent and discharge volumes from the treatment systems, ~~compiled recharge water sampling results (weekly, monthly, and quarterly sampling),~~ quarterly groundwater and treated effluent sampling results, and any operations/maintenance activities performed for the prior quarter. Quarterly monitoring shall be performed during the following periods and submitted as follows. • January 1st through March 31st ~~(first quarter)~~ – due by ~~May~~ June 1st • April 1st through June 30th ~~(second quarter)~~ – due by ~~August~~ September 1st • July 1st through September 30th ~~(third quarter)~~ – due by ~~November~~ December 1st • October 1st through December 31st ~~(fourth quarter)~~ – due by ~~February~~ March 1st [20.6.2.3107.A NMAC]
11	Quarterly reports shall include the following general information: a) Any periodic test of mechanical integrity conducted; b) Any well work-overs conducted; and c) Any changes within the area of review which may have the potential to impact subsurface conditions. [20.6.2.3107 NMAC]
12	Quarterly reports shall include the following system performance information: a) Monthly average, maximum, and minimum values for ~~injection pressure,~~ flow rate and volume of treated groundwater transferred to each injection well ~~and injection well casing pressure~~; b) The totalized monthly volume of treated groundwater transferred from the IX system to each injection well. ~~a)~~c) Injection wells: Monthly average, maximum and minimum of injection water level (pressure) above static level for each injection well ~~b)~~d) ~~Injection well components: down hole~~well casing ~~pressure, annulus pressure, and flow rate of water injected shall be monitored on a continuous basis;~~

#	Terms and Conditions
	~~e)~~e) The daily volume injected at each injection well; ~~d) Water levels in the storage tanks;~~ ~~e)~~f) The daily ~~Daily~~ volume pumped from each extraction well. ~~production well shall be measured~~. [20.6.2.3107 NMAC]
13	Quarterly reports shall include laboratory analysis of the following samples ~~analytes~~, analysis to be conducted by an independent environmental laboratory that is certified under the National Environmental Laboratory Accreditation Program (NELAP).

Analytical Laboratory	Sampling Location	Time Period After System Startup or Modification	Frequency	Analytes	Sample Type	Sample TAT[1]
Stage 1						
Contract lab[2]	Post IX treatment[3]	weeks 1–8	weekly	NO_3-N, Cr, ClO_4, SO_4, F, Cl, TDS	filtered	7-day
Stage 2						
Contract lab[2]	Post IX treatment[3]	weeks 10–12–14	biweekly	NO_3-N, Cr, ClO_4, SO_4, F, Cl, TDS	filtered	7-day
Stage 3						
Contract lab[2]	Post IX treatment[3]	after 14 weeks	monthly	NO_3-N, Cr, ClO_4, SO_4, F, Cl, TDS	filtered	7-day
Annual						
Contract lab[2]	Post IX treatment[3]	one year	annual	Full-suite[4]	varies	30-day

Notes:
[1] TAT means the turn-around-time for sample analysis and reporting from the analytical laboratory.
[2] Contract lab means an off-site, independent analytical laboratory that is NELAP certified.
[3] Post IX treatment means after the last IX treatment vessel. See POC Sample Location on the Chromium Project Process Flow Diagrams, Appendix A.
[4] Full-suite means all water contaminants listed in 20.6.2.3103 NMAC and all toxic pollutants defined in 20.6.2.WW NMAC.

~~Chromium (µg/L)~~
~~Nitrate as N (mg/L)~~
~~Perchlorate (µg/L)~~
~~Sulfate (mg/L)~~
~~TDS (mg/L)~~
~~Fluoride (mg/L)~~
~~Chloride (mg/L)~~

[20.6.2.3107.A NMAC and 20.6.2.3107.B NMAC]

#	Terms and Conditions
14	The ~~permitteepermittees~~ shall perform quarterly depth to groundwater measurements and groundwater quality analysis for Nitrate as N (NO_3-N), Chromium (Cr), Perchlorate (ClO_4), Sulfate (SO_4), Fluoride (F), Chloride (Cl), and Total Dissolved Solids (TDS) ~~the analytes listed in Condition 13 for each quarterly monitoring report as described in Condition 10~~ for the following monitoring wells. • CrCH-1 (water level only) • CrCH-2 (water level only) • CrCH-3 (water level only) • CrCH-4 (water level only) • CrCH-5 (water level only) • R-11 • R-13 • R-43 • R-44 • R-45 • R-50 • R-61(water level only) • R-62 • SIMR-2 ~~Data from routine IX vessel monitoring and discharge from the IX facility shall be included in each quarterly monitoring report.~~ **Depth to groundwater measurements, a summary table of the analytical results, ~~including the laboratory QA/QC summary report~~, and a facility layout map showing the location and number of each well shall be submitted to NMED in the quarterly monitoring reports.** **[Subsection A of 20.6.2.3107 NMAC]**
15	~~The permittee shall record measure the totalized volume of treated wastewater groundwater transferred from the IX systems to the each UIC well each month. The totalized influent volumes of treated water injected for each month shall be submitted to NMED in the quarterly monitoring reports.~~ ~~[Subsection A of 20.6.2.3107 NMAC]~~
16	The ~~permitteepermittees~~ shall develop a groundwater elevation contour map on a quarterly basis using the top of casing elevation data from the monitoring well survey and quarterly depth-to-~~regionalmost shallow~~ groundwater measurements obtained from the regional aquifer groundwater monitoring wells and coreholes listed in Condition No. 14 of ~~required by~~ this Discharge Permit. The groundwater elevation contour map shall depict the groundwater flow direction based on the groundwater elevation contours. Groundwater elevations between monitoring well locations shall be estimated using common interpolation methods. A contour interval appropriate to the data shall be used, but in no case shall the interval be greater than two feet. Groundwater elevation contour maps shall depict the groundwater flow direction using arrows

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	based on the orientation of the groundwater elevation contours and the location and identification of each monitoring well and contaminant source. The groundwater elevation contour map shall be submitted to NMED in the quarterly monitoring reports. **[Subsection A of 20.6.2.3107 NMAC]**
17	Groundwater quality monitoring shall be conducted in accordance to the *Interim Facility-Wide Groundwater Monitoring Plan* (most recent version) which is conducted under the direction of the NMED Hazardous Waste Bureau. In some cases, NMED Groundwater Quality Bureau may request additional analytes or wells be added to the sampling regime in cases where specific locations, constituents, or monitoring may not be included in the *Interim Facility-Wide Groundwater Monitoring Plan.* [20.6.2.3107 NMAC]
18	**ELECTRONIC POSTING** - Quarterly monitoring reports shall be posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated). This permit condition is not enforceable under 20.6.2.1220 NMAC or NMSA 1978 Sections 74-6-10 through -10.2, as amended from time to time, and is not subject to civil or criminal fines and/or penalties associated with permit requirements under Permit Sections 52 and 53. **[20.6.2.3107.A NMAC]**

C. CONTINGENCY PLAN

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19.	If the SCADA system triggers a system alarm~~, production~~ injection operations in the affected system ~~well pumping~~ shall cease. The system shall not be restarted until the problem is identified and corrected. In addition, the SCADA system shall be set to alarm and shut off injection should there be a malfunction such as increase in down-hole pressure in the injection well or rupture of a treated effluent conveyance line, ~~or storage tank. Injection shall not be resumeduntil the problem is corrected~~
20.	In the event that groundwater monitoring in the vicinity of the discharge conducted under this permit indicates that a significant increase in concentration of an analyte identified in Condition No. 14 of this permit ~~Section 20.6.2.3103 NMAC or a toxic pollutant defined in Subsection WW of 20.6.2.7 NMAC~~ is present in a groundwater sample that is attributable

#	Terms and Conditions
	to a discharge conducted under this permit, and in any subsequent groundwater sample, the ~~permitteepermittees~~ shall enact the following contingency plan. Within 30 days of receipt of the data confirming the increase, the ~~permitteepermittees~~ shall propose measures to ensure that the exceedance of the standard or the presence of a toxic pollutant will be mitigated by submitting a corrective action plan to NMED for approval. The corrective action plan shall include a description of the proposed actions to control the source and an associated completion schedule. The plan shall be enacted as approved by NMED. Once invoked (whether during the term of this Discharge Permit or after the term of this Discharge Permit and prior to the completion of the Discharge Permit closure plan requirements), this condition shall apply until the ~~permitteepermittees~~ have ~~has~~ fulfilled the requirements of this condition and groundwater monitoring confirms for a minimum of two years of consecutive groundwater sampling events that the standards of Section 20.6.2.3103 NMAC are not exceeded and toxic pollutants are not present in groundwater. The ~~permitteepermittees~~ 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 confirmed increase in groundwater contamination. [Subsection A of 20.6.2.3107 NMAC, Subsection E of 20.6.2.3109 NMAC]
21.	In the event that information available to NMED indicates that a groundwater monitoring well listed in Condition No. 14 ~~included in a project workplan submitted under~~ of this Discharge Permit — excluding SIMR-2 because of its location on Pueblo of San Ildefonso Tribal Land — is not constructed in a manner consistent with its intended use; contains insufficient water to effectively monitor groundwater quality; or is not completed in a manner that is protective of groundwater quality, the ~~permitteepermittees~~ shall, at the request of NMED, submit a drilling workplan and project schedule for NMED approval within 120 days following notification. The ~~permitteepermittees~~ shall survey the new monitoring well within 30 days following well construction. Replacement monitoring well locations shall be approved by NMED prior to installation and completed in accordance with the attachment titled *Ground Water Quality Bureau Monitoring Well Construction and Abandonment Conditions*, Revision 1.1, March 2011, or the ~~permitteepermittees~~ may propose specific construction details for approval by NMED. The ~~permitteepermittees~~ shall submit construction and lithologic logs, survey data, and a groundwater potentiometric surface map to NMED within 60 days following well completion.

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	Upon completion of the replacement monitoring wells, the monitoring well requiring replacement shall be properly plugged and abandoned. Well plugging, abandonment, and documentation of the abandonment procedures shall be completed in accordance with the attachment titled *Ground Water Quality Bureau, Monitoring Well Construction and Abandonment Conditions*, Revision 1.1, March 2011, and all applicable local, state, and federal regulations. The well abandonment documentation shall be submitted to NMED within 60 days of completion of well plugging activities. [Subsection A of 20.6.2.3107 NMAC]
22.	In the event that groundwater flow information obtained pursuant to this Discharge Permit indicates that a groundwater monitoring well listed in Condtion No. 14 ~~included in a project workplan submitted under~~ of this Discharge Ppermit is not located hydrologically downgradient of the discharge location it is intended to monitor, the ~~permitteepermittees~~ shall submit a drilling workplan and project schedule for NMED approval within 120 days following notification from NMED. The ~~permitteepermittees~~ shall survey the new monitoring well within 30 days following well construction. New monitoring well locations shall be approved by NMED prior to installation and completed in accordance with the attachment titled *Ground Water Quality Bureau, Monitoring Well Construction and Abandonment Conditions*, Revision 1.1, March 2011, or the ~~permitteepermittees~~ may propose specific construction details for approval by NMED. The ~~permitteepermittees~~ shall submit construction and lithologic logs, survey data and a groundwater elevation contour map within 90 days following well completion. [Subsection A of 20.6.2.3107 NMAC]
23.	In the event that a release ("spill") occurs that is not authorized under this Discharge Permit, the ~~permitteepermittees~~ 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 ~~permitteepermittees~~ shall verbally notify NMED and provide the following information: a) The name, address, and telephone number of the person or persons in charge of the facility, as well as of the owner and/or operator of the facility; b) The name and address of the facility; c) The date, time, location, and duration of the unauthorized discharge; d) The source and cause of unauthorized discharge; e) A description of the unauthorized discharge, including its estimated chemical composition;

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	f) The estimated volume of the unauthorized discharge; and g) Any actions taken to mitigate immediate damage from the unauthorized discharge. Within one week following discovery of the unauthorized discharge, the ~~permitteepermittees~~ 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 ~~permitteepermittees~~ shall submit a corrective action report/plan to NMED describing any corrective actions taken and/or 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; and 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 Paragraph (1) of Subsection A of 20.6.2.1203 NMAC, the ~~permitteepermittees~~ 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 ~~permitteepermittees~~ of the obligation to comply with all requirements of Section 20.6.2.1203 NMAC. [20.6.2.1203 NMAC]
24.	In the event that NMED or the ~~permitteepermittees~~ identifies any failures of the discharge plan or this Discharge Permit not specifically noted herein, NMED may require the ~~permitteepermittees~~ to submit a corrective action plan and a schedule for completion of corrective actions to address the failures. Additionally, NMED may require a Discharge Permit modification to achieve compliance with 20.6.2 NMAC. [Subsection A of 20.6.2.3107 NMAC, Subsection E of 20.6.2.3109 NMAC]

D. CLOSURE PLAN

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25.	Upon final cessation of the activity pursuant to the Discharge Permit, the ~~permitteepermittees~~ shall perform the following closure measures: a) Cap or plug all lines to prevent the flow of wastewater to treatment or disposal systems; b) Empty, clean, and remove tanks; c) Empty lagoons, remove liners, backfill, and re-grade to surface topography; d) Appropriately dispose of liquids and solids; e) Regrade and cover stockpiles; f) Continue groundwater monitoring for at least two years, or as appropriate; g) Enact contingency plans if groundwater standards are exceeded including any abatement required by NMED pursuant to actions related to this Discharge Permit; h) Remove any compounds and equipment pertaining to the remediation activities; i) Appropriately remove and manage ~~dispose of~~ all treatment resins and media in accordance with all applicable local, state and federal regulations; j) UIC wells must be closed in accordance with State of New Mexico Oil Conservation Division guidelines as described in the *Oil Conservation Division Underground Injection Control Program Manual*, February 26, 2004; k) Following notification from NMED that post-closure monitoring may cease, the ~~permitteepermittees~~ shall plug and abandon ~~the~~ any groundwater monitoring ~~wells~~ wells not included in the current IFGMP in accordance with the attachment titled *Ground Water Quality Bureau Monitoring Well Construction and Abandonment Conditions*, Revision 1.1, March 2011. l) When all post-closure requirements have been met, the ~~permitteepermittees~~ may request to terminate the Discharge Permit. Should individual components utilized under this Discharge Permit be required for completion of Consent Agreement activities under other regulatory oversight, the ~~permitteepermittees~~ may request a variance from specific closure activities required under this condition. [20.6.2.3107 (A)11 NMAC]

E. GENERAL TERMS AND CONDITIONS

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26.	RECORD KEEPING - The ~~permitteepermittees~~ shall maintain a written record of the following information: a) Information and data used to complete the application for this Discharge Permit; b) Records of any releases (commonly known as "spills") not authorized under this Discharge Permit and reports submitted pursuant to 20.6.2.1203 NMAC; c) Records of the operation, maintenance, and repair of all facilities/equipment used to

#	**Terms and Conditions**
	treat, store or dispose of wastewater; d) Facility record drawings (plans and specifications) showing the actual construction of the facility shall comply with all applicable statutes, regulations and codes including applicable DOE and LANL Engineering Standards; e) Copies of monitoring reports completed and/or submitted to NMED pursuant to this Discharge Permit; f) The volume of wastewater or other wastes discharged pursuant to this Discharge Permit; and g) Groundwater quality and wastewater quality data collected pursuant to this Discharge Permit. h) Copies of construction records (well log) for all groundwater monitoring wells required to be sampled pursuant to this Discharge Permit. i) Records of the maintenance, repair, replacement or calibration of any monitoring equipment or flow measurement devices required by this Discharge Permit. j) Data and information related to field measurements, sampling, and analysis conducted pursuant to this Discharge Permit. The following information shall be recorded and shall be made available to NMED upon request: i) The dates, location and times of sampling or field measurements; ii) The name and job title of the individuals who performed each sample collection or field measurement; iii) The sample analysis date of each sample; iv) The name and address of the laboratory, and the name of the signatory authority for the laboratory analysis; v) The analytical technique or method used to analyze each sample or collect each field measurement; vi) The results of each analysis or field measurement, including raw data; vii) The results of any split, spiked, duplicate or repeat sample; and viii) 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 ~~permittee~~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. [Subsections A and D of 20.6.2.3107 NMAC]
27.	INSPECTION and ENTRY – The ~~permittee~~permittees shall allow inspection by NMED of the facility and its operations which 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

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	any records are located regarding this discharge permit or related discharges required to be maintained by regulations of the federal government or the WQCC. The ~~permittee~~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]
28.	DUTY to PROVIDE INFORMATION - The ~~permittee~~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. [Subsection D of 20.6.2.3107 NMAC]
29.	MODIFICATIONS and/or AMENDMENTS – In the event the ~~permittee~~permittees proposes a change to the facility or the facility's 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 facility, the ~~permittee~~permittees shall notify NMED prior to implementing such changes. The ~~permittee~~permittees shall obtain approval (which may require modification of this Discharge Permit) by NMED prior to implementing such changes. [Subsection C of 20.6.2.3107 NMAC, Subsections E and G of 20.6.2.3109 NMAC]
30.	PLANS and SPECIFICATIONS – In the event the ~~permittee~~permittees is 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 ~~permittee~~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 ~~permittee~~permittees implements changes to the wastewater system authorized by this Discharge Permit which result in only a minor effect on the character of the discharge, the ~~permittee~~permittees shall report such changes (including the submission of record drawings, where applicable) ~~as of January 1 of each year to NMED~~ in the next quarterly report.

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	[Subsections A and C of 20.6.2.1202 NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]
31.	CIVIL PENALTIES - Any violation of the requirements and conditions of this Discharge Permit, including any failure to allow properly credentialed NMED staff to enter and inspect records or facilities, or any refusal or failure to provide NMED with records or information required to be maintained by this Discharge Permit or related regulation may subject the ~~permitteepermittees~~ 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 ~~permitteepermittees~~ 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]
32.	CRIMINAL PENALTIES – No person shall: 1) 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; 2) falsify, tamper with or render inaccurate any monitoring device, method or record required to be maintained under the WQA; or 3) 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

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	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]**
33.	COMPLIANCE with OTHER LAWS - Nothing in this Discharge Permit shall be construed in any way as relieving the ~~permitteepermittees~~ of the obligation to comply with all applicable federal, state, and local laws, regulations, permits, or orders. [NMSA 1978, § 74-6-5.L]
34.	RIGHT to APPEAL - The ~~permitteepermittees~~ 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]
35.	TRANSFER of DISCHARGE PERMIT - Prior to the transfer of any ownership, control, or possession of this facility or any portion thereof, the ~~permitteepermittees~~ shall: 1) notify the proposed transferee in writing of the existence of this Discharge Permit; 2) include a copy of this Discharge Permit with the notice; and 3) 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 ~~permitteepermittees~~ shall continue to be responsible for any discharge from the facility. [20.6.2.3111 NMAC]
36.	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 <u>issuance</u> of this Discharge Permit. Nothing in this Discharge Permit shall be construed as relieving the ~~permitteepermittees~~ of the obligation to pay all permit fees assessed by NMED. A ~~permitteepermittees~~ that ceases discharging or

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	does not commence discharging from the facility 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 facility 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]
EXPIRATION DATE: [Seven years from the effective date (i.e. Date) or five years from the date the discharge commences, whichever comes first]

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

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Michelle Hunter, Chief
Ground Water Quality Bureau
New Mexico Environment Department

ENCLOSURE 3

A master table listing all comments on the draft Discharge Permit

ENV-DO-15-0327

LA-UR-15-28979

Date: NOV 2 4 2015

No.	Page	Section No.	Current Language	Proposed Change
1	1	All	*permittee*	permittees
2	1	INTRO	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 activities related to groundwater remediation projects 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.	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 injection of treated groundwater into the regional aquifer beneath Los Alamos National Laboratory 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. **Basis:** The proposed activity is specific to the injection of treated groundwater with no discharge to surface water.
3	1	INTRO	*Specific monitoring of the extraction, treatment, and injection systems will be completed to ensure proper system operation....*	Specific monitoring of the extraction, treatment, and injection systems will be conducted to ensure proper system operation.... **Basis:** Clarifying language, replace *completed* with *conducted*.
4	1	INTRO	*....to ensure proper system operation using a supervisory control and data acquisition (SCADA) control system with a centrally located computer station.*	....to ensure proper system operation using a supervisory control and data acquisition (SCADA) control system. **Basis:** *Centrally located computer station* is unnecessary information.
5	2	INTRO	....will be maintained at a specified value using down-hole Baski pneumatic flow control valves (FCV).	.....will be maintained at a specified value using down-hole pneumatic flow control valves (FCV). **Basis:** The manufacturer's name is unnecessary information.
6	2	INTRO	*The water level in the injection well casing will be monitored by the control system through a down-hole pressure transducer. It is expected that the water pressure in the injection well casing will rise 10-15 psi above that of the static water level during injection. Reduced injection capacity within the well is anticipated during on-going operation; thus, the control system will be programmed to alarm the operator and shut down or more extraction wells in the event that water levels within the injection well casing reach the high-level set point.*	The water level in the injection well casing will be monitored by the control system through a down-hole pressure transducer. It is expected that the water pressure in the injection well casing will rise above that of the static water level during injection. Reduced injection capacity within the well is anticipated during on-going operation; thus, the control system will be programmed to alarm the operator and shut down the affected well(s) in the event that water levels within the injection well casing reach the high-level set point. High level alarm set points will be used to prevent the system from overflowing the wells and will be identified and fine-tuned during system startup. Water level rise in each injection well will be dependent upon the volume of water discharged to each well and its hydraulic characteristics. Therefore, these alarm set points will likely vary between wells and will likely be modified as initial operational data is collected and assessed. **Basis:** Edits are based on discussions with NMED GWQB on November 12, 2015

No.	Page	Section No.	Current Language	Proposed Change
7	2	INTRO	*The injection pipe will be equipped with a check valve and a submersible pump. This pump will be used to maintain well performance by back flushing the well as part of a regular maintenance program. Back flushing is anticipated once the water pressure within the injection well increases 10-12 psi above the levels observed initially under static conditions. The groundwater generated from injection well back flushing will be pumped into storage tanks, tested, transported to an IX treatment unit for treatment if necessary, and then land applied under DP-1793.*	The injection pipe will be equipped with a check valve and a submersible pump. This pump will be used to maintain well performance by back flushing the well as part of a regular maintenance program. Back flushing is anticipated once the water pressure within the injection well increases above the levels observed initially under static conditions. The specific levels above static conditions that will trigger the back flushing operation will be determined based upon operational conditions and will likely vary between wells. The level of injection well capacity improvement observed during initial back flushing will be used to develop on-going well maintenance schedules. The groundwater generated from injection well back flushing will be pumped into storage tanks, tested, transported to an IX treatment unit for treatment if necessary, and then land applied under DP-1793. **Basis:** Edits are based on discussions with NMED GWQB on November 12, 2015
8	5	OP No. 3	*....the permittees shall demonstrate the mechanical integrity of the distribution piping and injection wells.*	....the permittees shall demonstrate the mechanical integrity of the distribution piping and injection wells associated with this Discharge Permit. **Basis:** Mechanical integrity testing is specific to the piping and wells associated with this Discharge Permit.
9	5	OP No. 3	*The permittee shall demonstrate mechanical integrity of the distribution piping and injection wells at least once every five years. If the tubing is pulled or the packer is reseated in the injection well, the permittee must conduct a mechanical integrity test prior to re-injection of fluids into the subsurface.*	The permittees shall demonstrate mechanical integrity of the distribution piping and injection wells at least once every five years. If the injection well is reconfigured, the permittees must conduct a mechanical integrity test prior to re-injection of treated groundwater into the subsurface. **Basis:** The proposed injection wells do not contain tubes or packers.
10	5	OP No. 5	*Prior to discharging from the IX systems to the direct injection wells, the permittee shall submit documentation that the IX systems achieve standards less than (<) 90% of the numeric standards of 20.6.2.3103 NMAC and <90% of the numeric standards established for tap water in Table A-1 for constituents not listed in 20.6.2.3103 NMAC.*	Prior to the initial discharge of treated effluent from the IX treatment system to the injection wells, and before injecting treated effluent following any major modification of the IX treatment system, the permittees shall submit documentation that the IX systems achieve standards less than (<) 90% of the numeric standards of 20.6.2.3103 NMAC and <90% of the numeric standards established for tap water in Table A-1 for constituents not listed in 20.6.2.3103 NMAC. **Basis:** Clarification that documentation is only required at initial startup and following modifications to the IX treatment system.

No.	Page	Section No.	Current Language	Proposed Change
11	5	OP No. 6	*The permittee shall maintain fences around any IX treatment facilities to control access by the general public and animals. The fences shall consist of a minimum of six-foot chain link or field fencing and locking gates. Fences shall be maintained throughout the term of this Discharge Permit.*	The permittees shall maintain fences around all synthetically lined storage lagoons to control access by the general public and animals. The fences shall consist of a minimum of six-foot chain link or field fencing and locking gates. Fences shall be maintained throughout the term of this Discharge Permit. **Basis:** Treatment units are contained within locked transportainers and do not require fences.
12	5	OP No. 7	*The permittee shall maintain signs indicating that the treated effluent is not potable. Signs shall be posted at the UIC wellheads, the IX treatment systems, impoundments, storage vessels and other areas where there is potential for public contact with hazardous materials or equipment. All signs shall be printed in English, Spanish, and Tewa and remain visible and legible for the term of this Discharge Permit.*	The permittees shall maintain signs printed in English and Spanish indicating that the treated effluent is not potable. Signs shall be posted at the UIC wellheads, the IX treatment systems, impoundments, storage vessels and other areas where there is potential for public contact with hazardous materials or equipment. **Basis:** Signage in Tewa is a nonstandard requirement in NMED Discharge Permits.
13	6	OP No. 10	*The permittee shall submit quarterly monitoring reports to NMED for the most recently completed quarterly period by the 1st of February, May, August, and November of each year.* •January 1st through March 31st (first quarter) – due by May 1st •April 1st through June 30th (second quarter) – due by August 1st •July 1st through September 30th (third quarter) – due by November 1st •October 1st through December 31st (fourth quarter) – due by February 1st	The permittees shall submit quarterly monitoring reports to NMED for the most recently completed quarterly period by the 1st of June September December March of each year, as described below. •January 1st through March 31st– due by June 1st •April 1st through June 30th– due by September 1st •July 1st through September 30th– due by December 1st •October 1st through December 31st– due by March 1st **Basis:** The standard turn-around-time for samples submitted to the off-site, independent, NELAP certified analytical laboratory is 30 days. Accordingly, the Permittees cannot meet the quarterly reporting requirement of 30 days following the end of the quarter. The Permittees request an additional 30 days to submit quarterly reports (60 days following the end of the quarter).
14	6	OP No. 10	*The quarterly reports shall document the influent and discharge volumes from the treatment systems, compiled recharge water sampling results (weekly, monthly, and quarterly sampling), quarterly groundwater and treated effluent sampling results, and any operations/maintenance activities performed for the prior quarter.*	The quarterly reports shall document the influent and discharge volumes from the treatment systems, quarterly groundwater and treated effluent sampling results, and any operations/maintenance activities performed for the prior quarter. **Basis:** The requirement to report "compiled recharge water sampling results (weekly, monthly, and quarterly sampling)" is unclear and without reference. Permittees propose including additional information on the sampling & analysis plan requirements to Condition No. 13.

<table>
<tr><th>No.</th><th>Page</th><th>Section No.</th><th>Current Language</th><th>Proposed Change</th></tr>
<tr><td>15</td><td>7</td><td>OP No. 12</td><td>Quarterly reports shall include the following system performance information:
a) Monthly average, maximum, and minimum values for injection pressure, flow rate and volume and injection well casing pressure;
b) Injection well components: down-hole pressure, annulus pressure, and flow rate of water injected shall be monitored on a continuous basis;
c) The daily volume injected at each injection well;
d) Water levels in the storage tanks;
e) Daily volume pumped from each production well shall be measured.</td><td>Quarterly reports shall include the following system performance information:
a) Monthly average, maximum, and minimum values for flow rate and volume of treated wastewater transferred to each injection well;
b) The totalized monthly volume of wastewater transferred from the IX system to each injection well;
c) Injection wells: Monthly average, maximum and minimum of injection water level (pressure) above static level for each injection well
d) Daily volume pumped from each production well shall be measured.

Basis: Edits are based on discussions with NMED GWQB on November 12, 2015, which identified duplicative requirements and measurements not achievable.</td></tr>
<tr><td>16</td><td>8</td><td>OP No. 12</td><td>Quarterly reports shall include laboratory analysis of the following analytes, to be conducted by an independent environmental laboratory that is certified under the National Environmental Laboratory Accreditation Program (NELAP).

Chromium (µg/L)
Nitrate as N (mg/L)
Perchlorate (µg/L)
Sulfate (mg/L)
TDS (mg/L)
Fluoride (mg/L)
Chloride (mg/L)</td><td>Quarterly reports shall include laboratory analysis of the following samples, analysis to be conducted by an independent environmental laboratory that is certified under the NELAP Program.
<table>
<tr><th>Stage

Laboratory</th><th>Sampling Location</th><th>Time Period After System Startup or Modification</th><th>Frequency</th><th>Analytes</th></tr>
<tr><td>Stage 1

Contract lab[2]</td><td>Post IX treatment[3]</td><td>weeks 1–8</td><td>weekly</td><td>NO_3-N, Cr, ClO_4, SO_4, F, Cl, TDS</td></tr>
<tr><td>Stage 2

Contract lab[2]</td><td>Post IX treatment[3]</td><td>weeks 10–12–14</td><td>biweekly</td><td>NO_3-N, Cr, ClO_4, SO_4, F, Cl, TDS</td></tr>
<tr><td>Stage 3

Contract lab[2]</td><td>Post IX treatment[3]</td><td>after 14 weeks</td><td>monthly</td><td>NO_3-N, Cr, ClO_4, SO_4, F, Cl, TDS</td></tr>
<tr><td>Stage 4

Contract lab[2]</td><td>Post IX treatment[3]</td><td>one year</td><td>annual</td><td>Full-suite[4]</td></tr>
</table>
Basis: Edits are based on discussions with NMED GWQB on November 12, 2015. Inclusion of the sampling and analysis plan proposed by the Permittees in the Apr-2015 Discharge Permit application was incorporated to provide clarity.</td></tr>
</table>

No.	Page	Section No.	Current Language	Proposed Change
17	8,9	OPN No. 14	*The permittee shall perform depth to water and groundwater quality analysis for the analytes listed in Condition 13 for each quarterly monitoring report as described in Condition 10 for the following monitoring wells.* • *CrCH-1* • *CrCH-2* • *CrCH-3* • *CrCH-4* • *CrCH-5* • *R-11* • *R-13* • *R-43* • *R-44* • *R-45* • *R-50* • *R-61* • *R-62* • *SIMR-2* *Data from routine IX vessel monitoring and discharge from the IX facility shall be included in each quarterly monitoring report.* *Depth to groundwater measurements, analytical results, including the laboratory QA/QC summary report, and a facility layout map showing the location and number of each well shall be submitted to NMED in the quarterly monitoring reports.*	The permittees shall perform quarterly depth to groundwater measurements and groundwater quality analysis for Nitrate as N (NO_3-N), Chromium (Cr), Perchlorate (ClO_4), Sulfate (SO_4), Fluoride (F), Chloride (Cl), and Total Dissolved Solids (TDS) for the following monitoring wells. • CrCH-1 (water level only) • CrCH-2 (water level only) • CrCH-3 (water level only) • CrCH-4 (water level only) • CrCH-5 (water level only) • R-11 • R-13 • R-43 • R-44 • R-45 • R-50 • R-61 (water level only) • R-62 • SIMR-2 Depth to groundwater measurements, a summary table of the analytical results, and a facility layout map showing the location and number of each well shall be submitted to NMED in the quarterly monitoring reports. **Basis:** Edits are based on discussions with NMED GWQB on November 12, 2015.
18	9	OP No. 15	*The permittee shall measure the totalized volume of treated wastewater transferred from the IX systems to the each UIC well each month. The totalized influent volumes for each month shall be submitted to NMED in the quarterly monitoring reports.*	Delete Condition No. 15 and incorporate into Condition No. 12 **Basis:** Condition No. 15 is duplicate of Condition No. 12

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19	9	OP No. 16	*The permittee shall develop a groundwater elevation contour map on a quarterly basis using the top of casing elevation data from the monitoring well survey and quarterly depth-to-most-shallow groundwater measurements obtained from the groundwater monitoring wells required by this Discharge Permit.*	The permittees shall develop a groundwater elevation contour map on a quarterly basis using the top of casing elevation data from the monitoring well survey and quarterly depth-to-regional groundwater measurements obtained from the regional aquifer groundwater monitoring wells and coreholes listed in Condition No. 14 of this Discharge Permit. **Basis:** Injection will occur only into the regional groundwater aquifer. Contour mapping should include only those regional aquifer wells identified in Condition No. 14 of this permit.
20	10	OP No. 18	***ELECTRONIC POSTING** - Quarterly monitoring reports shall be posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated).*	**ELECTRONIC POSTING** - Quarterly monitoring reports shall be posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated). This permit condition is not enforceable under 20.6.2.1220 NMAC or NMSA 1978 Sections 74-6-10 through -10.2, as amended from time to time, and is not subject to civil or criminal fines and/or penalties associated with permit requirements under Permit Sections 52 and 53. **Basis:** There is no requirement in 20.6.2 NMAC for the posting of regulatory documents for public reading. The Permittees are willing to post the quarterly reports to the EPRR but only as a voluntary activity, not as a compliance requirement subject to fines and penalties.
21	10	Contingency No. 19	*If the SCADA system triggers a system alarm, production well pumping shall cease. The system shall not be restarted until the problem is identified and corrected. In addition, the SCADA system shall be set to alarm and shut off injection should there be a malfunction such as increase in down-hole pressure in the injection well or rupture of a treated effluent conveyance line or storage tank. Injection shall not be resumed until the problem is corrected*	If the SCADA system triggers a system alarm then injection operations in the affected system shall cease. The system shall not be restarted until the problem is identified and corrected. In addition, the SCADA system shall be set to alarm and shut off injection should there be a malfunction such as increase in down-hole pressure in the injection well or rupture of a treated effluent conveyance line. **Basis:** SCADA system alarms will only impact operations of the affection system, not all systems.

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22	10	Contingency No. 20	*In the event that groundwater monitoring in the vicinity of the discharge conducted under this permit indicates that a significant increase in concentration of an analyte identified in Section 20.6.2.3103 NMAC or a toxic pollutant defined in Subsection WW of 20.6.2.7 NMAC is present in a groundwater sample that is attributable to a discharge conducted under this permit, and in any subsequent groundwater sample, the permittee shall enact the following contingency plan.*	In the event that groundwater monitoring in the vicinity of the discharge conducted under this permit indicates that a significant increase in concentration of an analyte identified in Condition No. 14 of this permit is present in a groundwater sample that is attributable to a discharge conducted under this permit, and in any subsequent groundwater sample, the permittees shall enact the following contingency plan. **Basis:** The permittees should be held responsible for reporting significant changes in groundwater quality only for those constituents listed in Condition No. 14 of this Discharge Permit, not all analytes in 20.6.2.3103 NMAC or Subsection WW of 20.6.2.7 NMAC. Additionally, all monitoring wells listed in Condition No. 14 are sampled quarterly under the NMED-approved Interim Facility Groundwater Monitoring Plan (IFGMP) and NMED receives routine reports and notifications under agreements in place between NMED GWQB and the Permittees.
23	11	Contingency No. 21	*In the event that information available to NMED indicates that a well included in a project workplan submitted under this Discharge Permit is not constructed in a manner consistent with its intended use;*	In the event that information available to NMED indicates that a groundwater monitoring well listed in Condition No. 14 of this Discharge Permit—excluding SIMR-2 because of its location on Pueblo of San Ildefonso Tribal Land—is not constructed in a manner consistent with its intended use; **Basis:** Project workplans are not a component of this Discharge Permit. SIMR-2 requires special consideration due to its location.
24	12	Contingency No. 22	*In the event that groundwater flow information obtained pursuant to this Discharge Permit indicates that a monitoring well included in a project workplan submitted under this permit is not located hydrologically downgradient of the discharge location it is intended to monitor, the permittee shall submit a drilling workplan and project schedule for NMED approval within 120 days following notification from NMED.*	In the event that groundwater flow information obtained pursuant to this Discharge Permit indicates that a groundwater monitoring well listed in Condition No. 14 of this Discharge Permit is not located hydrologically downgradient of the discharge location it is intended to monitor, the permittees shall submit a drilling workplan and project schedule for NMED approval within 120 days following notification from NMED. **Basis:** Project workplans are not a component of this Discharge Permit.

No.	Page	Section No.	Current Language	Proposed Change
25	14	Closure Plan No. 25	*Upon cessation of the activity pursuant to the Discharge Permit, the permittee shall perform the following closure measures:* *a) Cap or plug all lines to prevent the flow of wastewater to treatment or disposal systems;* *b) Empty, clean, and remove tanks;* *c) Empty lagoons, remove liners, backfill, and re-grade to surface topography;* *d) Appropriately dispose of liquids and solids;* *e) Regrade and cover stockpiles;* *f) Continue groundwater monitoring for at least two years, or as appropriate;* *g) Enact contingency plans if groundwater standards are exceeded including any abatement required by NMED pursuant to actions related to this Discharge Permit;* *h) Remove any compounds and equipment pertaining to the remediation activities;* *i) Appropriately dispose of all treatment resins and media in accordance with all applicable local, state and federal regulations;* *j) UIC wells must be closed in accordance with State of New Mexico Oil Conservation Division guidelines as described in the Oil Conservation Division Underground Injection Control Program Manual, February 26, 2004;* k) *Following notification from NMED that post-closure monitoring may cease, the permittee shall plug and abandon the monitoring wells in accordance with the attachment titled Ground Water Quality Bureau Monitoring Well Construction and Abandonment Conditions, Revision 1.1, March 2011.*	Upon final cessation of the activity pursuant to the Discharge Permit, the permittees shall perform the following closure measures: a) Cap or plug all lines to prevent the flow of wastewater to treatment or disposal systems; b) Empty, clean, and remove tanks; c) Empty lagoons, remove liners, backfill, and re-grade to surface topography; d) Appropriately dispose of liquids and solids; e) Regrade and cover stockpiles; f) Continue groundwater monitoring for at least two years, or as appropriate; g) Enact contingency plans if groundwater standards are exceeded including any abatement required by NMED pursuant to actions related to this Discharge Permit; h) Remove any compounds and equipment pertaining to the remediation activities; i) Appropriately remove and manage all treatment resins and media in accordance with all applicable local, state and federal regulations; j) UIC wells must be closed in accordance with State of New Mexico Oil Conservation Division guidelines as described in the *Oil Conservation Division Underground Injection Control Program Manual*, February 26, 2004; k) Following notification from NMED that post-closure monitoring may cease, the permittees shall plug and abandon any groundwater monitoring wells not included in the current IFGMP in accordance with the attachment titled *Ground Water Quality Bureau Monitoring Well Construction and Abandonment Conditions*, Revision 1.1, March 2011. **Basis:** Treatment resins and media are returned to the vendor for disposition. Following closure, monitoring wells in this Discharge Permit may be required for sampling per the IFGMP and NMED HWB, and are therefore not subject to P&A under this Discharge Permit.
26	16	General Terms and Conditions No. 30	*....shall report such changes (including the submission of record drawings, where applicable) as of January 1 of each year to NMED.*	....shall report such changes (including the submission of record drawings, where applicable) in the next quarterly report. **Basis:** The quarterly report is the appropriate reporting document.