

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
Revised April 3, 2017

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOCD District Office.
For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Below-Grade Tank, or
Proposed Alternative Method Permit or Closure Plan Application

- Type of action: [] Below grade tank registration
[X] Permit of a pit or proposed alternative method
Trench #1 [] Closure of a pit, below-grade tank, or proposed alternative method
[] Modification to an existing permit/or registration
[] Closure plan only submitted for an existing permitted or non-permitted pit, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, below-grade tank or alternative request

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1. Operator: LOGOS Operating, LLC OGRID #: 289408
Address: 2010 Afton Place, Farmington 87401
Facility or well name: Section 7 Burial Trench See attached list in application
API Number: See list OCD Permit Number: Facility ID:[fJMB2306858043]
U/L or Qtr/Qtr J Section 7 Township 31N Range 5W County: Rio Arriba
Center of Proposed Design: Latitude 36.913593 Longitude -107.397846 NAD83
Surface Owner: [X] Federal [] State [] Private [] Tribal Trust or Indian Allotment

2. [X] Pit: Subsection F, G or J of 19.15.17.11 NMAC
Temporary: [X] Drilling [] Workover X Burial Trench/Drying Pad
[] Permanent [] Emergency [] Cavitation [] P&A [] Multi-Well Fluid Management Low Chloride Drilling Fluid [X] yes [] no
[X] Lined [] Unlined Liner type: Thickness 30 mil [X] LLDPE [] HDPE [] PVC [] Other
[X] String-Reinforced
Liner Seams: [] Welded [] Factory [] Other Volume: 253,749 bbl Dimensions: L 402 x W 206 x D 20'

3. [] Below-grade tank: Subsection I of 19.15.17.11 NMAC
Volume: bbl Type of fluid:
Tank Construction material:
[] Secondary containment with leak detection [] Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
[] Visible sidewalls and liner [] Visible sidewalls only [] Other
Liner type: Thickness mil [] HDPE [] PVC [] Other

4. [] Alternative Method:
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

5. Fencing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks)
[] Chain link, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)
[X] Four foot height, four strands of barbed wire evenly spaced between one and four feet
[] Alternate. Please specify

6.
Netting: Subsection E of 19.15.17.11 NMAC (*Applies to permanent pits and permanent open top tanks*)
 Screen Netting Other _____
 Monthly inspections (If netting or screening is not physically feasible)

7.
Signs: Subsection C of 19.15.17.11 NMAC
 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers
 Signed in compliance with 19.15.16.8 NMAC

8.
Variations and Exceptions:
 Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.
Please check a box if one or more of the following is requested, if not leave blank:
 Variance(s): Requests must be submitted to the appropriate division district for consideration of approval.
 Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

9.
Siting Criteria (regarding permitting): 19.15.17.10 NMAC
Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Siting criteria does not apply to drying pads or above-grade tanks.

General siting	
Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank. - <input type="checkbox"/> NM Office of the State Engineer - iWATERS database search; <input type="checkbox"/> USGS; <input type="checkbox"/> Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit. NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. (Does not apply to below grade tanks) - Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within the area overlying a subsurface mine. (Does not apply to below grade tanks) - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within an unstable area. (Does not apply to below grade tanks) - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within a 100-year floodplain. (Does not apply to below grade tanks) - FEMA map	<input type="checkbox"/> Yes <input type="checkbox"/> No
<u>Below Grade Tanks</u>	
Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
<u>Temporary Pit using Low Chloride Drilling Fluid</u> (maximum chloride content 15,000 mg/liter)	
Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.) - Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application. NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No

Within 100 feet of a wetland.
 - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site Yes No

Temporary Pit Non-low chloride drilling fluid

Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).
 - Topographic map; Visual inspection (certification) of the proposed site Yes No

Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.
 - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image Yes No

Within 500 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application;
 - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site Yes No

Within 300 feet of a wetland.
 - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site Yes No

Permanent Pit or Multi-Well Fluid Management Pit

Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).
 - Topographic map; Visual inspection (certification) of the proposed site Yes No

Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.
 - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image Yes No

Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application.
 - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site Yes No

Within 500 feet of a wetland.
 - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site Yes No

10.
Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
- Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
- Previously Approved Design (attach copy of design) API Number: 30-039-31383 30-039-31384
Permit Number: pcs1912236653 _____

11.
Multi-Well Fluid Management Pit Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- A List of wells with approved application for permit to drill associated with the pit.
- Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
- Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12. **Permanent Pits Permit Application Checklist:** Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- Climatological Factors Assessment
- Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- Quality Control/Quality Assurance Construction and Installation Plan
- Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- Nuisance or Hazardous Odors, including H₂S, Prevention Plan
- Emergency Response Plan
- Oil Field Waste Stream Characterization
- Monitoring and Inspection Plan
- Erosion Control Plan
- Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

13. **Proposed Closure:** 19.15.17.13 NMAC

Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regard to the proposed closure plan.

- Type: Drilling Workover Emergency Cavitation P&A Permanent Pit Below-grade Tank Multi-well Fluid Management Pit
 Alternative
- Proposed Closure Method: Waste Excavation and Removal
 Waste Removal (Closed-loop systems only)
 On-site Closure Method (Only for temporary pits and closed-loop systems)
 In-place Burial On-site Trench Burial
 Alternative Closure Method

14. **Waste Excavation and Removal Closure Plan Checklist:** (19.15.17.13 NMAC) **Instructions:** Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.

- Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.13 NMAC
- Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

15. **Siting Criteria (regarding on-site closure methods only):** 19.15.17.10 NMAC

Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 25 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Ground water is between 25-50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Within 100 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 300 feet of a wetland. US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

16. **On-Site Closure Plan Checklist:** (19.15.17.13 NMAC) *Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.*

- Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection E of 19.15.17.13 NMAC
- Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K of 19.15.17.11 NMAC
- Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC
- Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of 19.15.17.13 NMAC
- Waste Material Sampling Plan - based upon the appropriate requirements of 19.15.17.13 NMAC
- Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
- Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

17. **Operator Application Certification:**

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Vanessa Fields Title: Regulatory Manager

Signature: *Vanessa Fields* Date: 3/8/2023

e-mail address: vfields@logosresourcesllc.com Telephone: 505-320-1243

18. **OCD Approval:** Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment)

OCD Representative Signature: *Jaclyn Burdine* Approval Date: 03/09/2023

Title: Environmental Specialist-A OCD Permit Number: Facility ID:[JMB2306858043]

19. **Closure Report (required within 60 days of closure completion):** 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

Closure Completion Date: _____

20. **Closure Method:**

Waste Excavation and Removal On-Site Closure Method Alternative Closure Method Waste Removal (Closed-loop systems only)

If different from approved plan, please explain.

21. **Closure Report Attachment Checklist:** *Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.*

- Proof of Closure Notice (surface owner and division)
- Proof of Deed Notice (required for on-site closure for private land only)
- Plot Plan (for on-site closures and temporary pits)
- Confirmation Sampling Analytical Results (if applicable)
- Waste Material Sampling Analytical Results (required for on-site closure)
- Disposal Facility Name and Permit Number
- Soil Backfilling and Cover Installation
- Re-vegetation Application Rates and Seeding Technique
- Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude _____ Longitude _____ NAD: 1927 1983

22.

Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

Hydrogeological Report for Section 7 Burial Trench

The proposed burial trench site is in the southeast portion of the Colorado Plateau, on the northern San Juan Basin. The area of the project is characterized by high mesas cut by numerous arroyos and canyons, North of the project area is Navajo Lake, a reservoir that flooded a deep canyon of the San Juan River. The project area lies within the Laguna Seca drainage, a northwest-to west flowing dry arroyo and canyon system about 6 miles in length. Laguna Seca Mesa, the highest mesa within the drainage basin, is 6779 feet (SE ¼ Section 20 T31N R5W) and the water level elevation of the Navajo Lake ranges between 6030-6050 feet above sea level (asl) throughout the year. Thus, the total relief within the Laguna Seca Drainage is about 750 Feet.

The Trench location lies on an outcrop of the Eocene (Tertiary) San Jose Formation, a fluvial unit composed of more than 2000 feet of sandstone and conglomerate interbedded with mudstone. The San Jose formation overlies the Nacimiento Formation to the south and west and the Animas Formation to the northeast. The Llaves (predominantly sandstone) and/or Tapicitos (predominantly mudstone) Members of the San Jose crop out in the vernal area of the Trench, as they do around the Navajo Lake¹. Many authors report inter-bedding of sandstone and mudstone units complicate mapping efforts.

Site Geology

The trench is located on an outcrop the Eocene San Jose Formation, Specifically the “persistent sheet sandstone” of the Llaves Member that characterizes the adjacent tree-covered hills of the general area. Beneath the site location are interbedded sandstone and mudrock units as described in the previous section of this application. The schematic cross-section below presents the driller’s logs from five cathodic protection wells located on the southern border of Figure 2. This cross-section clearly shows the discontinuous nature of the fluvial sandstones that compose the Regina and Llaves Members of the San Jose Formation. The cross-section also shows that groundwater elevation decreases, in general, from east to west, from the higher mesas toward Navajo Lake. Note that that the elevation of the former rock quarry into which the trench will be constructed lies at an elevation of about 6380 feet.

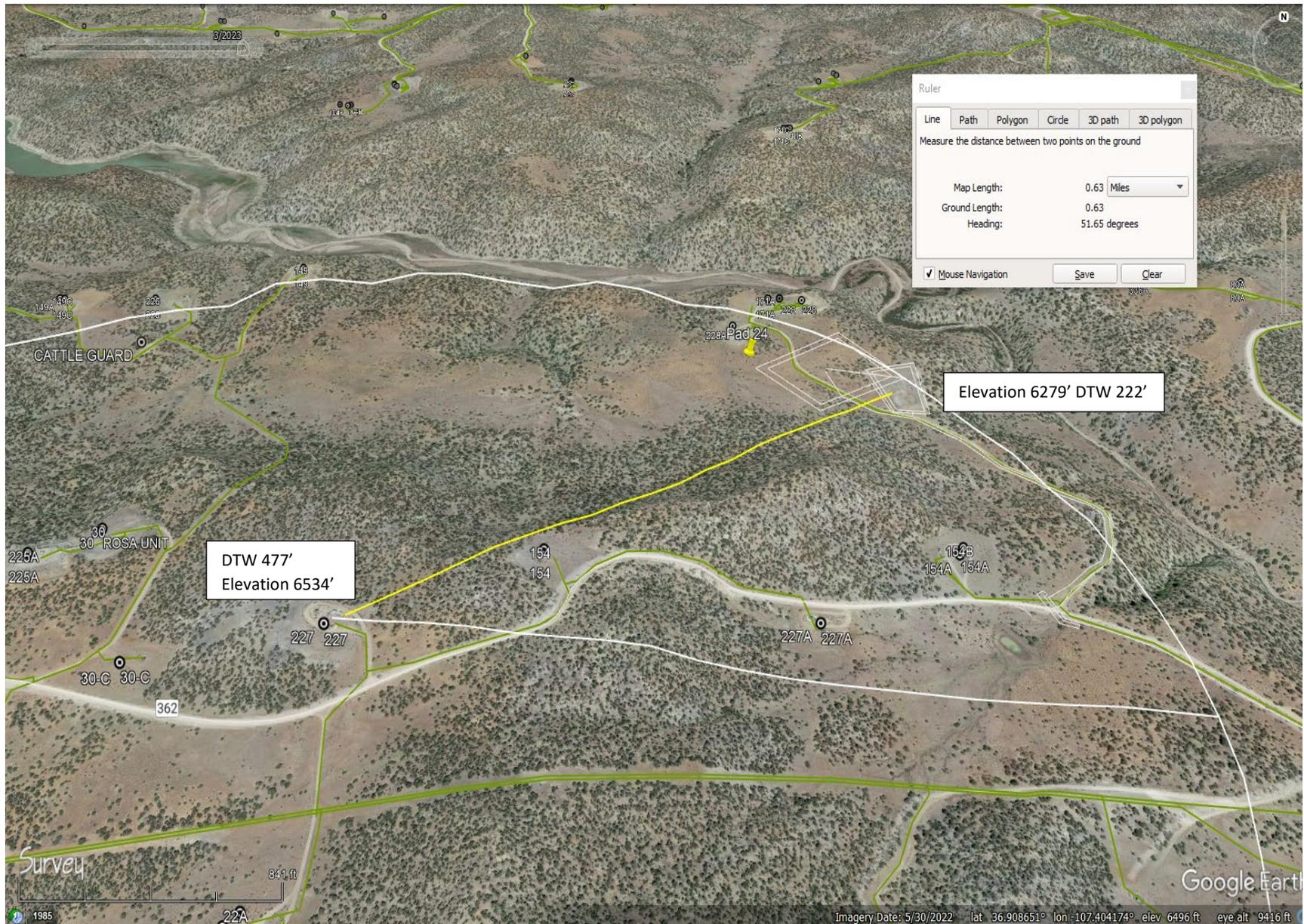
¹ <https://geoinfo.nmt.edu/publications/water/hr/6/HR6.pdf>

Section 7 Burial Trench TOPO Map



Section 7 Burial Trench Depth to Ground Water 222'

Per Cathodic Report from the Rosa Unit #227 DTW @477'



694

30-039-25063

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO

~~72136~~
23236

Operator Meredian Oil Location: Unit M Sec. 7 Twp 31 Rng 5

Name of Well/Wells or Pipeline Serviced Losa # 227

Elevation 525 Completion Date 10-10-91 Total Depth 477 Land Type F

Casing Strings, Sizes, Types & Depths 60" sch 40 8" PVC

If Casing Strings are cemented, show amounts & types used _____

12 sacks Cement

If Cement or Bentonite Plugs have been placed, show depths & amounts used _____

NO

Depths & thickness of water zones with description of water: Fresh, Clear, Salty, Sulphur, Etc. Dry hole

RECEIVED

FEB 24 1992

Depths gas encountered: NO

OIL CON. DIV.
DIST. 2

Ground bed depth with type & amount of coke breeze used: _____

477' Ashbury, 85 sacks

Depths anodes placed: 305', 295', 285', 275', 265', 255', 230', 220', 195', 185', 170', 155'

Depths vent pipes placed: 295'

Vent pipe perforations: 1" apart Perforated bottom 200' from 2nd anode.

Remarks: _____

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

CPS GROUND BED CONSTRUCTION WORKSHEET

CPS# 2283w	P/L NAME (S), NUMBER (S) Rosa # 227					
ID # K842	TOTAL 12.40	VOLTS 23.0	AMPS .53	OHMS	DATE	NAME L.S.E.

REMARKS (notes for construction log)

No water table, Dry hole. Set 60' of 8" PVC casing, separated bottom 200' from 2nd anode.

DEPTH	LOG ANODE	ANODE #	NO. COKE	FULLY COK'D									
100	3.0		295	3.0	-2	490			685				
105	3.2		300	2.8		495			690				
110	3.6		305	2.7	-1	500			695				
115	3.6		310	2.2		505			700				
120	4.0		315	2.0		510			ANODE	DEPTH	NO.	FULLY	
125	3.5		320	2.0		515			#		COKE	COK'D	
130	3.2		325	2.0		520			1	305	2.8	5.1	
135	3.7		330	2.0		525			2	295	3.1	6.2	
140	3.4		335	1.8		530			3	285	3.2	6.3	
145	3.6		340	1.7		535			4	275	3.1	5.7	
150	3.4		345	1.6		540			5	265	2.9	5.6	
155	2.6	-12	350	1.5		545			6	255	3.0	5.5	
160	2.3		355	1.4		550			7	230	2.9	6.1	
165	2.2		360	1.3		555			8	220	3.0	6.3	
170	2.8	-11	365	1.6		560			9	195	2.9	6.0	
175	2.7		370	1.9		565			10	185	3.1	6.4	
180	3.1		375	1.8		570			11	170	3.0	6.3	
185	3.1	-10	380	1.9		575			12	155	3.2	6.4	
190	2.7		385	2.3		580			13				
195	2.8	-9	390	1.8		585			14				
200	2.6		395	1.8		590			15				
205	2.4		400	2.1		595			16				
210	2.1		405	1.9		600			17				
215	2.8		410	1.6		605			18				
220	2.8	-8	415	1.6		610			19				
225	3.0		420	1.7		615			20				
230	2.9	-7	425	1.6		620			21				
235	2.5		430	1.6		625			22				
240	2.5		435	1.7		630			23				
245	2.6		440	2.2		635			24				
250	2.9		445	2.4		640			25				
255	2.9	-6	450	2.6		645			26				
260	2.9		455	2.3		650			27				
265	2.9	-5	460	2.1		655			28				
270	2.7		465	2.5		660			29				
275	2.9	-4	470	2.4		665			30				
280	3.0		475	TD	477	670							
285	3.0	-3	480			675							
290	3.0		485			680							

DISTRIBUTION: - original - permanent CPS FILE
 copy: - Division Corrosion Supervisor
 - Region Corrosion Specialist



New Mexico Office of the State Engineer Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

PLSS Search:

Section(s): 7 **Township:** 32N **Range:** 05W

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

3/9/23 7:22 AM

WATER COLUMN/ AVERAGE
DEPTH TO WATER



New Mexico Office of the State Engineer Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

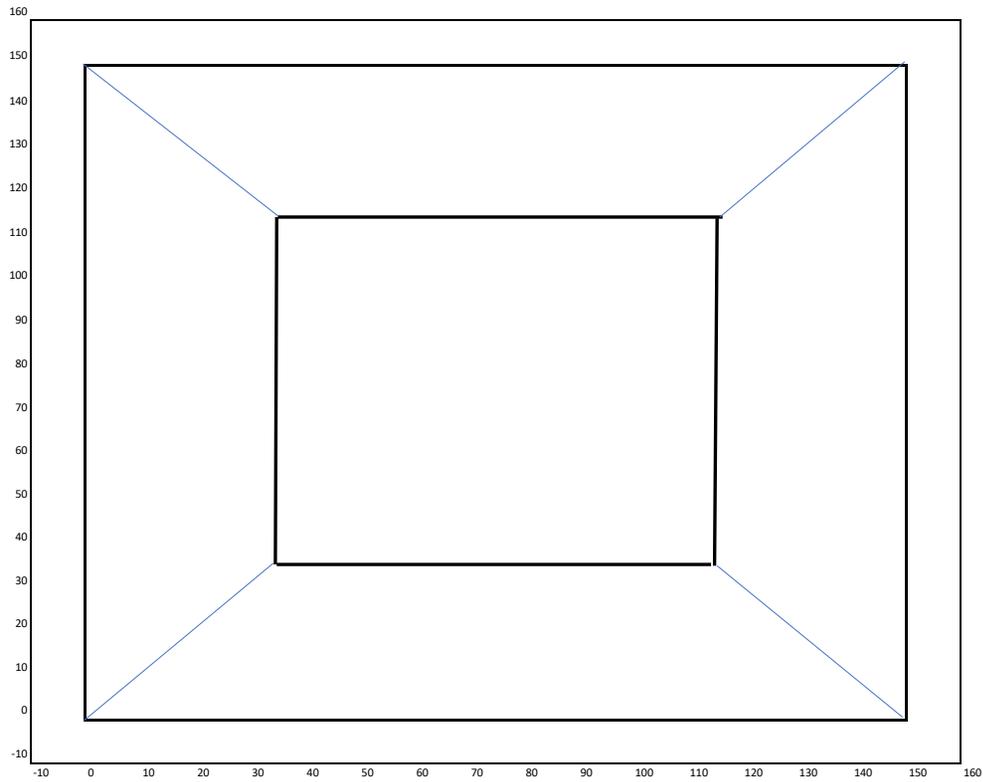
PLSS Search:

Section(s): 7 **Township:** 31N **Range:** 05W

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

3/9/23 7:22 AM

WATER COLUMN/AVERAGE
DEPTH TO WATER



Solids Burial Pit

Total Width (E-W) 206 Ft

Total Length (N-S) 402 Ft

Slope Dimensions

Pit Slopes (Rise to Run) 1.0 2.0

Depth Southeast Side
 Depth Adjacent to Drying Pad West
 Depth Adjacent to Drying Pad East
 Depth Southwest Side

Depth Below Drying Pad	Approximate depth below natural grade
15	20
15	20
15	20
15	20

E-W Bottom Dimension South
 E-W Bottom Dimension North
 N-S Bottom Dimension

Total Capacity 253,749.60 bbls
 1,424,698 cu. Ft.
 32.71 ac ft

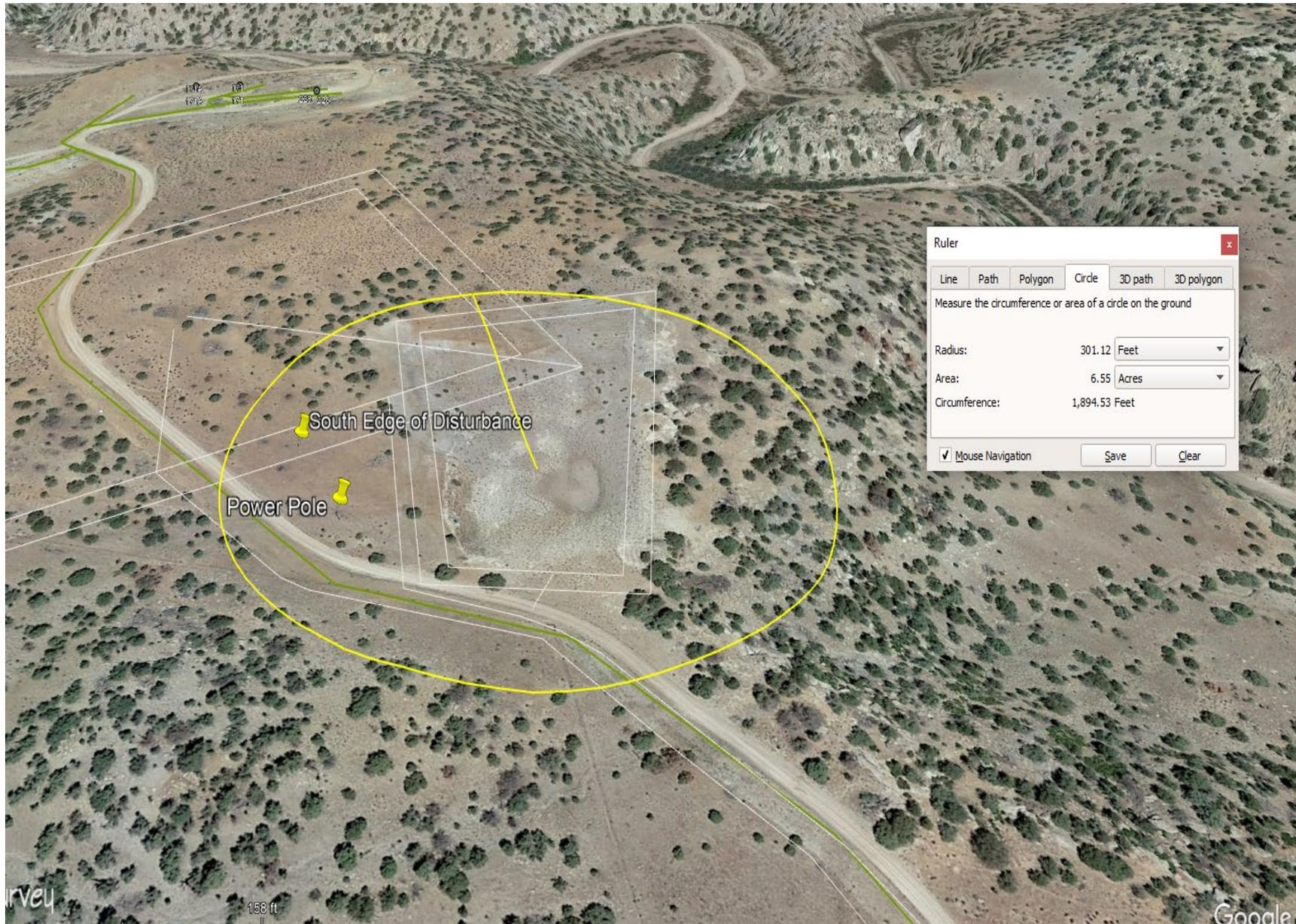
Number of Wells 20

Estimated Solids 10000 cu. Ft



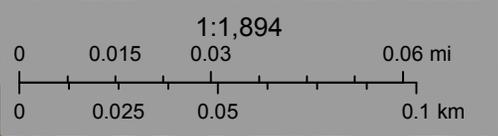
LOGOS Resources II LLC 2010 Afton Place Farmington NM 87401	Solids Burial Pit	Trench #1
	Section 7 Cuttings Pit	Mar-23

LOGOS Section 7 Burial Trench 300' Radius





Section 7 Burial Trench



U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands_team@fws.gov

March 6, 2023

Wetlands

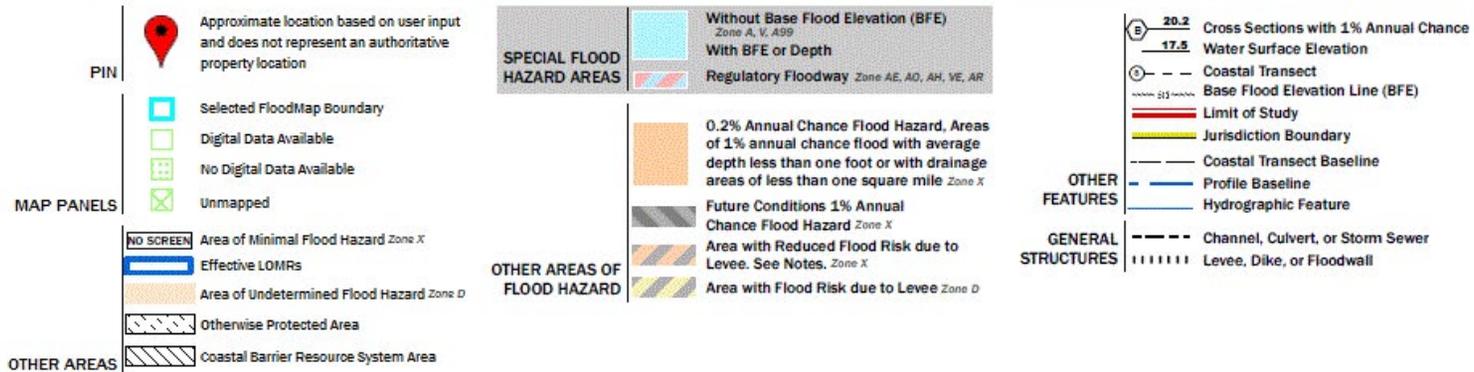
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Burial Trench 7 Overlay



Section 7 Burial Trench Flood Plan Map (FEMA)



Siting Criteria Compliance Demonstration 19.15.17.10 NMAC

The proposed Section 7 Burial trench will be to dispose the drill cutting for four to eight wells from the Rosa Pad 24, Rosa Pad 26, Rosa Pad 34

Rosa Unit #700H	Rosa Unit #710H
Rosa Unit #701H	Rosa Unit #712H
Rosa Unit #702H	Rosa Unit #714H
Rosa Unit #704H	Rosa Unit #716H
Rosa Unit #705H	Rosa Unit #720H
Rosa Unit #706H	Rosa Unit #722H
	Rosa Unit #724H
	Rosa Unit #726H

The proposed Section 7 burial trench site is not located in an unstable area. The location is not over a mine and as indicated on the Mines, Mills and Quarries Map, the Section 7 burial was an existing rock quarry. The location of the Section 7 burial trench is not located within 100 feet of a continuously flowing watercourse, is not 200 feet of any other significant watercourse or lakebed, sinkhole, playa lake and is not within 300 feet of a spring or private, domestic fresh water well used for domestic or stock watering purposes. The location is not located within 300 feet of a wet land. The location is not within a 100-year floodplain area as indicated on the FEMA map.



Design and Construction Plan

The Drying pad and Burial Trench will be located on the northeast side of the rock quarry. Plat 1 describe the design of the drying pad and burial trenches proposed for this project. LOGOS Operating, LLC will provide 72-hour notification prior to lining to allow staff the opportunity to inspect the liner foundation.

Currently, the design consists of a single drying pad location to the west of the burial trench. The burial trench will contain the discharges of closed-loop system drilling solids from Rosa Drill Program. The discharges of closed-loop system drilling solids will be on drying pad until all discharges are collected and pass paint filter test. Once the material is ready to be buried, the burial trench will be dug and lined as per NMAC 19.15.17.11.K. LOGOS Operating, LLC will provide 72-hour notification prior to lining to allow staff the opportunity to inspect the liner foundation.

Construction/Design Plan of Drying Pad and Burial Trenches

Stockpiling of topsoil:

LOGOS will stockpile the topsoil to the north of the proposed drying and burial trench for use as the final cover or fill at the time of closure.

Signs:

LOGOS will post an upright sign not less than 12 inches by 24 inches with lettering not less than two inches in height in a conspicuous place on the fence surrounding the drying pad and burial trench. The operator shall post the sign in a manner and location such that a person can easily read the legend. The sign shall provide the following information: the operator's name, the location of the site by quarter-quarter or unit letter, section, township, and range; and emergency telephone numbers.

Fencing:

LOGOS shall fence or enclose in a manner that deters unauthorized access to the drying pad and burial trench site, shall maintain the fences in good repair and exclude livestock with a four-foot fence that has at least four strands of barbed wire evenly spaced in the interval between one foot and four feet above ground level provided all the criteria in 19.15.17.11 (D) (1) (2) (3) are met.

Earthwork:

In accordance with rule 19.15.17.11 NMAC, the drying pad and burial trench will adhere to appropriate prescriptive mandates. LOGOS will construct the pad and trench with properly constructed foundation and interior slopes of a firm, un and smooth unyielding base and free of rocks, debris, sharp edges, or irregularities to prevent any rupture or tear to the liner. This will require dragging the area adjacent to the proposed trench to proposed trench to form the drying pad. In areas where the trench is mainly rock, smooth foundations for the liners may require importing material that relatively free of rocks from suitable location to form the liner foundations and/or geotextile material between the earthen foundation and the liner.

The drying pad to the west of the burial trench will slope slightly east to west. A liner will be placed on top of the of the drying pad with the liner overlaying into the burial trench. LOGOS will utilize a shell shaker blender to ensure all liquids are removed prior to placing on the drying pad. The remaining fluids will be allowed to evaporate on the drying pad or disposed.

Liner Installation:

Burial trench: The geomembrane liner shall consist of 30-mil string reinforced LLDPE which exceeds the specification of the division district office. LOGOS shall notify the division's Santa Fe office at least 72 hours prior to the liner's installation.

Drying Pad: The liner shall consist of 30-mil LLDPE or could be as robust as 60-mil HDPE in accordance with rule 19.15.17.13 NMAC (K) (1-6). Sumps will be added to facilitate the collection of liquids derived from drill cuttings. A berm will be placed to prevent run-on of surface water or fluids. No anchor trench adjacent to the burial trench. Instead, the liner will extend 10 to 20 feet over the liner that forms facing the wall of the burial trench. May spread 1 to 3 feet of earth material over the liner.

Design and Construct:

Solids from the closed loop system will be unloaded from east to west on the drying pad. LOGOS will ensure the area will be graded relatively flat but sloping slightly toward the west. The trench shall have properly constructed foundation and side walls consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges, or irregularities to prevent the liner's rupture or tear.

Geotextile is required under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity.

LOGOS will ensure the following method in accordance with 19.15.17.11 NMAC:

- Minimize liner seams and orient them up and down, not across, a slope.
- Use factory welded seams where possible.
- Prior to field seaming, shall overlap liners four to six inches and orient liner seams parallel to the line of maximum slope, i.e., oriented along, not across the slope.
- Minimize the number of field seams in corner and irregularly shaped areas.
- Utilize qualified personnel to perform field welding and testing.
- Install sufficient liner material to reduce stress-strain on the liner.
- Ensure that the outer edges of all liners are secured for the deposit of the excavated waste material into the trench.
- Anchor the edges of all liners in the bottom of a compacted earth-filled trench. The anchor trench shall be a least 18 inches deep, unless anchoring to encountered bedrock provides equivalent anchoring.
- Ensure that the liner is protected from any fluid force or mechanical damage at any point of discharge into or suction from the lined drying pad and burial trench.

Operating and Maintenance Plan

In accordance with rule 19.15.17.12 the following information describes the operation and maintenance of the burial trench and drying pad.

General Plan:

- LOGOS shall operate and maintain the burial trench and drying pad to contain minimal liquids and solids and maintain the integrity of the liner, prevent contamination of fresh water, and protect public health and the environment.
- LOGOS shall recycle, reuse, reclaim or dispose of all drilling fluids of such liquids at a division approved facility.
- LOGOS shall not discharge into or store any hazardous waste in the burial trench or drying pad.
- If liner's integrity is compromised above the liquids surface, then LOGOS shall repair the damage within 48 hours of discovery or seek a variance from notify Santa Fe Division district office.
- If a leak develops or if any penetration of the liner occurs below the liquids surface, then LOGOS shall remove all liquid above the damage or leak within 48 hours of discovery, notify Santa Fe Division office pursuant to 19.15.29 NMAC and repair the damage or replace the liner.
- LOGOS will ensure discharge of solids does not damage the liner by erosion or any impact while unloading the solids.
- LOGOS will protect from run-off by constructing and maintaining diversion ditches and berms around burial trench as necessary.
- LOGOS will ensure only fluids or mineral solids generated during the drilling, completion or workover process be discharged into the burial trench.
- LOGOS will maintain the drying pad and burial trench free of miscellaneous solid waste or debris.
- LOGOS will remove any visible or measurable layer of oil from the surface of the drying pad although the presence of oil is highly unlikely.
- During and after drilling operations until closed, LOGOS will inspect the drying pad and burial trench weekly to ensure compliance. Inspections will be logged and available to the Santa Fe division district office.
- LOGOS will be utilizing a shell shaker blender for the solids prior to adding on the drying pad. Minimal drilling fluids will be in trench and will ensure solids are free of liquid prior to transferring into burial trench. As suggested above, the protocol for unloading solids to the drying pad and transfer to the burial trench:
 - Trucks off load the solids from the closed loop system onto 1 to 3 feet of dry earth material that overlays the liner of the drying pad area.
 - These solids remain on the dry earth until the material passes the paint filter test
 - Using a loader or other appropriate equipment, the closed loop solids will be transferred into the burial trench as will moist earth from beneath the footprint of the solids pile.
 - Dry earth will be replaced on the drying pad area as required after the transfer to the burial trench
- Any fluids will be removed from the surface of the burial trench within 60 days from the date that the last drilling or workover rig associated with the drying pad/burial trench permit is released. The operator will note the date of this release upon Form C-105 or C-103 upon well or workover completion.

Burial Trench and Drying Pad Closure Plan

In accordance with Rule 19.15.17.13 NMAC the following plan describes the general in-place closure requirements of burial trenches/drying pad on LOGOS Operating, LLC location in the San Juan Basin of New Mexico. This is LOGOS's standard procedure for all burial trenches/drying pads to be utilized for the drilling, completion and/or workovers of oil and gas wells operated by LOGOS. For those burial trenches/drying pads which do not conform to this standard closure plan, a separate closure plan will be developed and utilized.

The wastes in the burial trench are destined for burial at the location proposed, which is in the same unit where the drilling wastes are generated.

The operator will not begin closure operations without approval of the closure plan submitted with the permit application.

All closure activities will include proper documentation and will be submitted to NMOCD within 60 days of the pit closure. Closure report will be filed on C-144 and will include the following:

- Details on Capping and Covering, where applicable (See report)
- Plot plan (Pit Diagram) (included as an attachment)
- Inspection Log (included as an attachment)
- Notification Documentation (included as an attachment)
- Sampling Results (included as an attachment)
- Copy of Deed Notice will be filed with the County Clerk
 - **(Not required on Federal, State or Federal Tribal Land as stated by FAQ dated October 30, 2008).**

General Plan:

1. Prior to closure LOGOS shall remove all free liquids reasonably achievable from the prior drying pad and dispose of such liquids at a division approved facility.
2. The preferred method of closure for all temporary pits will be on-site closure by in-place burial/drying pad, provided all the criteria in 19.15.17.13.D are met.
3. The surface owner shall be notified by (certified mail, return receipt or via email) requested that LOGOS's plans closure of operations.
4. Within 6 months of the rig-off status occurring LOGOS will ensure that the temporary pit and/or burial trench/drying pad is closed.
5. Notice of Closure will give to the division district office verbally and/ or in writing at least 72 hours, but not more than one week, prior to closure operations. The notification of Closure will include the following: Operator's Name, Well Name and API number and Location (USTR).
6. Pit contents shall be achieved by mixing with non-waste containing, earthen material. The solidification process will be accomplished use a combination of natural drying and mechanical mixing. Pit contents will be mixed with non-waste, earthen material to a consistency that is deemed safe and stable. The mixing ratio shall not exceed 3 parts non-waste to 1 part pit contents.
7. A five and eight-point composite sample will be taken of the pit using sampling tools and all samples tested per parameters listed in Table II of 19.15.17.13 NMAC. In the event that the criteria are not met (See Table I), all contents will be handled per 19.15.17.13 Subsection C (i.e dig and haul to a division-approved facility.) Approval to haul will be requested of the division district office prior to initiation.



Table II Closure Criteria for Burial Trenches and Drying Pad Waste Left in Place in Temporary Pits			
			5-Point and 8 Point
Section 7 Burial Trench	Constituent	Method *	Limit**
➤ 100 feet	Chloride	EPA Method 300.0	20,000 mg/kg
	TPH	EPA SW-846 Method 418.1	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021 B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg

8. Upon achieving all applicable waste stabilization, fold the outer edges of the trench liner to overlap the waste material in the trench prior to the installation of the geomembrane cover, install a geomembrane cover over the waste material in the lined trench.
9. Upon completion of solidification and testing, the pit area will be backfilled with soil cover for burial in-place or burial trench/drying pad consists of four feet non-waste containing, uncontaminated earthen material. The soil cover shall include either the background thickness of topsoil or one-foot suitable material to establish vegetation at the site, whichever is greater.
10. Re-contouring of area will match fit, shape, line, form, and texture of the surrounding. Re-shaping will include drainage control, prevent ponding, and minimize erosion. Natural drainages will be unimpeded and stormwater Best Management Practices (BMPs) will be used to aid in soil stabilization and protection surface water quality.
11. Notification will be sent to the Division District office when the reclaimed area is seeded.
12. LOGOS shall seed the disturbed areas the first growing season after the pit and/or burial trench/drying pad is closed. Seeding will be accomplished vis drilling on the contour whenever practical or by other division-approved methods. BLM or Forest Service stipulated seed mixes will be used on federal lands. Vegetative cover will equal 70% of the native perennial vegetative cover (un-impacted) consisting of at least three native plant species, including at least on grass, but not including noxious weeds, and maintain the cover through two successive growing seasons. Repeat seeding or planting will be continue until successful vegetative growth occurs.
13. LOGOS shall place a steel marker at the center of the onsite burial/drying pad. The steel marker shall be not less than four inches in diameter and shall be cemented in a three-foot deep hole at a minimum. The marker will be flush with the ground to allow access and safety concerns. The marker will include a threaded collar to be used for future abandonment. The top of the marker will contain a welded steel 12” square plate that indicates the onsite burial/drying pad. The plate will be easily removable, and a four-foot-tall riser will be threaded into the top of the collar marker and welded around the base with the LOGOS information. The information will include Operator Name, Well Name and number, Unit, Section, Township Range, and an indicator that the marker is an onsite burial location.

Burdine, Jaclyn, EMNRD

From: Burdine, Jaclyn, EMNRD
Sent: Thursday, March 9, 2023 4:23 PM
To: Vanessa Fields
Cc: Enviro, OCD, EMNRD
Subject: SECTION 7 BURIAL TRENCH #1 [fJMB2306858043]. Conditions of Approval
Attachments: SECTION 7 BURIAL TRENCH #1 [fJMB2306858043] C-144 Approval.pdf

Ms. Fields,

NMOCD has reviewed and approved the [C-144] Temporary Pit Plan permit, Application ID# 195246, and related documents submitted by [289408] LOGOS OPERATING, LLC on March 9, 2023 for SECTION 7 BURIAL TRENCH #1 [fJMB2306858043] in Unit Letter J, Section 7, Township 31N, Range 05W, Rio Arriba County, New Mexico. This application is approved with the following conditions of approval:

- [289408] LOGOS OPERATING, LLC shall use the facility identification [fJMB2306858043] in all communications with NMOCD regarding the SECTION 7 BURIAL TRENCH #1 [fJMB2306858043] Pit.
- [289408] LOGOS OPERATING, LLC must maintain, operate and close the SECTION 7 BURIAL TRENCH #1 [fJMB2306858043] as per all the requirements in NMAC 19.15.17. PITS, CLOSED-LOOP SYSTEMS, BELOW-GRADE TANKS AND SUMPS.
- The design and construction plan, included in the Application, is approved. [289408] LOGOS OPERATING, LLC shall design and construct SECTION 7 BURIAL TRENCH #1 [fJMB2306858043] as described in the approved plan.
- [289408] LOGOS OPERATING, LLC shall apply for a permit modification for any change to the design and construction plan.
- [289408] LOGOS OPERATING, LLC shall verify that the SECTION 7 BURIAL TRENCH #1 [fJMB2306858043] is not maintaining any liquids. If rain or run-off water gets into the SECTION 7 BURIAL TRENCH #1 [fJMB2306858043], [289408] LOGOS OPERATING, LLC will remove said water/liquids from the trench within a 72-hour timeframe.
- 19.15.17.13.E. Closure notice. [289408] LOGOS OPERATING, LLC shall notify the surface owner by certified mail, return receipt requested that the operator plans closure operations at least 72 hours, but not more than one week, prior to any closure operation. Notice shall include well name, API number and location. Evidence of mailing of the notice to the address of the surface owner in the county tax records is sufficient to demonstrate compliance with this requirement.
- The closure plan, included in the Application, is approved. [289408] LOGOS OPERATING, LLC shall close the Pit as described in the approved plan, as per all the requirements in NMAC 19.15.17:
 - **19.15.17.13. CLOSURE AND SITE RECLAMATION REQUIREMENTS**
 - Closure report and burial identification:
 Within 60 days of closure completion, [289408] LOGOS OPERATING, LLC shall submit a closure report on form C-144, with necessary attachments to document all closure activities including sampling results; information required by 19.15.17 NMAC; and details on back-filling, capping and covering, where applicable.

In the closure report, the operator shall certify that all information in the report and attachments is correct, and that the operator has complied with all applicable closure requirements and conditions specified in the approved closure plan.

If the operator used a temporary pit, the operator shall provide a plat of the pit location on form C-1 05 within 60 days of closing the temporary pit.

- [289408] LOGOS OPERATING, LLC shall place a steel marker at the center of an onsite burial. The steel marker shall be not less than four inches in diameter and shall be cemented in a three-foot deep hole at a minimum. The steel marker shall extend at least four feet above mean ground level and at least three feet below ground level. The operator's name, lease name and well number and location, including unit letter, section, township and range, and that the marker designates an onsite burial location shall be welded, stamped or otherwise permanently engraved into the metal of the steel marker.
- [289408] LOGOS OPERATING, LLC shall apply for a permit modification for any change to the closure plan.

Please let me know if you any additional questions or concerns.

Sincerely,

Jackie Burdine ● Environmental Specialist-Advanced – Administrative Permitting Program
EMNRD - Oil Conservation Division
1220 S. St. Francis Drive | Santa Fe, NM 87505
505.469.6769 Jaclyn.Burdine1@emnrd.nm.gov
<http://www.emnrd.nm.gov/ocd>

District I
 1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720
District II
 811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720
District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 195246

CONDITIONS

Operator: LOGOS OPERATING, LLC 2010 Afton Place Farmington, NM 87401	OGRID: 289408
	Action Number: 195246
	Action Type: [C-144] Temporary Pit Plan (C-144T)

CONDITIONS

Created By	Condition	Condition Date
jburdine	NMOCD has reviewed and approved the [C-144] Temporary Pit Plan permit, Application ID# 195246, and related documents submitted by [289408] LOGOS OPERATING, LLC on March 9, 2023 for SECTION 7 BURIAL TRENCH #1 [fJMB2306858043] in Unit Letter J, Section 7, Township 31N, Range 05W, Rio Arriba County, New Mexico. This application is approved with conditions.	3/9/2023