

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 June 6, 2013

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  
☐ Permit of a pit or proposed alternative method  
☐ 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: 4001 North Butler Ave. Building 7101, Farmington, NM 87401  
Facility or well name: Enchilada 1  
API Number: 30-39-23352 OCD Permit Number: \_\_\_\_\_  
U/L or Qtr/Qtr B Section 16 Township 23N Range 06W County: Rio Arriba  
Center of Proposed Design: Latitude 36.229524°N Longitude 107.472153°W NAD: ☐ 1927 ☒ 1983  
Surface Owner: ☐ Federal ☒ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.  
☐ **Pit:** Subsection F, G or J of 19.15.17.11 NMAC  
Temporary: ☐ Drilling ☐ Workover  
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A ☐ Multi-Well Fluid Management Low Chloride Drilling Fluid ☐ yes ☐ no  
☐ Lined ☐ Unlined Liner type: Thickness \_\_\_\_\_ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other \_\_\_\_\_  
☐ String-Reinforced  
Liner Seams: ☐ Welded ☐ Factory ☐ Other \_\_\_\_\_ Volume: \_\_\_\_\_ bbl Dimensions: L \_\_\_\_\_ x W \_\_\_\_\_ x D \_\_\_\_\_

RCVD SEP 23 '13  
OIL CONS. DIV.  
DIST. 3

3.  
☒ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC  
Volume: 120 bbl Type of fluid: Produced Water  
Tank Construction material: Metal  
☐ 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)  
☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet  
☒ Alternate. Please specify: 4' hog wire with one strand of barbed wire on top

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.

**Variances 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.**

- ☐ NM Office of the State Engineer - iWATERS database search; ☐ USGS; ☐ Data obtained from nearby wells

☐ Yes ☒ No  
☐ 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

☐ Yes ☐ No  
☐ 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

☐ Yes ☐ 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

☐ Yes ☐ 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

☐ Yes ☐ No

Within a 100-year floodplain. **(Does not apply to below grade tanks)**

- FEMA map

☐ Yes ☐ No

**Below Grade Tanks**

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

☐ Yes ☒ 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

☐ Yes ☒ No

**Temporary Pit using Low Chloride Drilling Fluid** (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

☐ Yes ☐ 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

☐ Yes ☐ 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

☐ Yes ☐ 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: \_\_\_\_\_ or Permit Number: \_\_\_\_\_

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 H<sub>2</sub>S, 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 regards 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.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells   | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> NA |
| Ground water is between 25-50 feet below the bottom of the buried waste<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells   | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> NA |
| Ground water is more than 100 feet below the bottom of the buried waste.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells  | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><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).<br>- Topographic map; Visual inspection (certification) of the proposed site                        | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.<br>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image  | <input type="checkbox"/> Yes <input 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.<br>- NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| Written confirmation or verification from the municipality; Written approval obtained from the municipality   | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| Within 300 feet of a wetland.<br>US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site   | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| 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.

- Written confirmation or verification from the municipality; Written approval obtained from the municipality

☐ Yes ☐ No

Within the area overlying a subsurface mine.

- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division

☐ Yes ☐ No

Within an unstable area.

- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map

☐ Yes ☐ No

Within a 100-year floodplain.

- FEMA map

☐ Yes ☐ 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

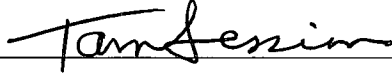
17.

**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): Tamra Sessions

Title: Operations Technician

Signature: 

Date: 9-19-13

e-mail address: tsessions@logosresourcesllc.com

Telephone: 505-330-9333

18.

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

OCD Representative Signature: 

Approval Date: 9/24/2013

Title: Compliance Officer

OCD Permit Number: \_\_\_\_\_

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

**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: \_\_\_\_\_

**Logos Operating, LLC  
San Juan Basin  
Variance Explanation**

**C-144 Item #5 Fencing**

*Per 19.15.17.11 D (3) The operator shall fence any other pit or below-grade tank to 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.*

Logos Operating has requested a variance on the fencing material and plans to use 4' hog wire with one strand of barbed wire on top.



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

(A CLW##### in the  
POD suffix indicates the  
POD has been replaced  
& no longer serves a  
water right file.)

(R=POD has  
been replaced,  
O=orphaned,  
C=the file is  
closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
SJ 01506			SA	1	1	3	22	23N	06W	278535	4010015*	2283	280		
SJ 01156			RA	2	2	1	18	23N	06W	274330	4012555*	3579	1500	200	1300

Average Depth to Water: **200 feet**

Minimum Depth: **200 feet**

Maximum Depth: **200 feet**

Record Count: 2

### UTMNAD83 Radius Search (in meters):

Easting (X): 277892

Northing (Y): 4012206

Radius: 5000

\*UTM location was derived from PLSS - see Help

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.



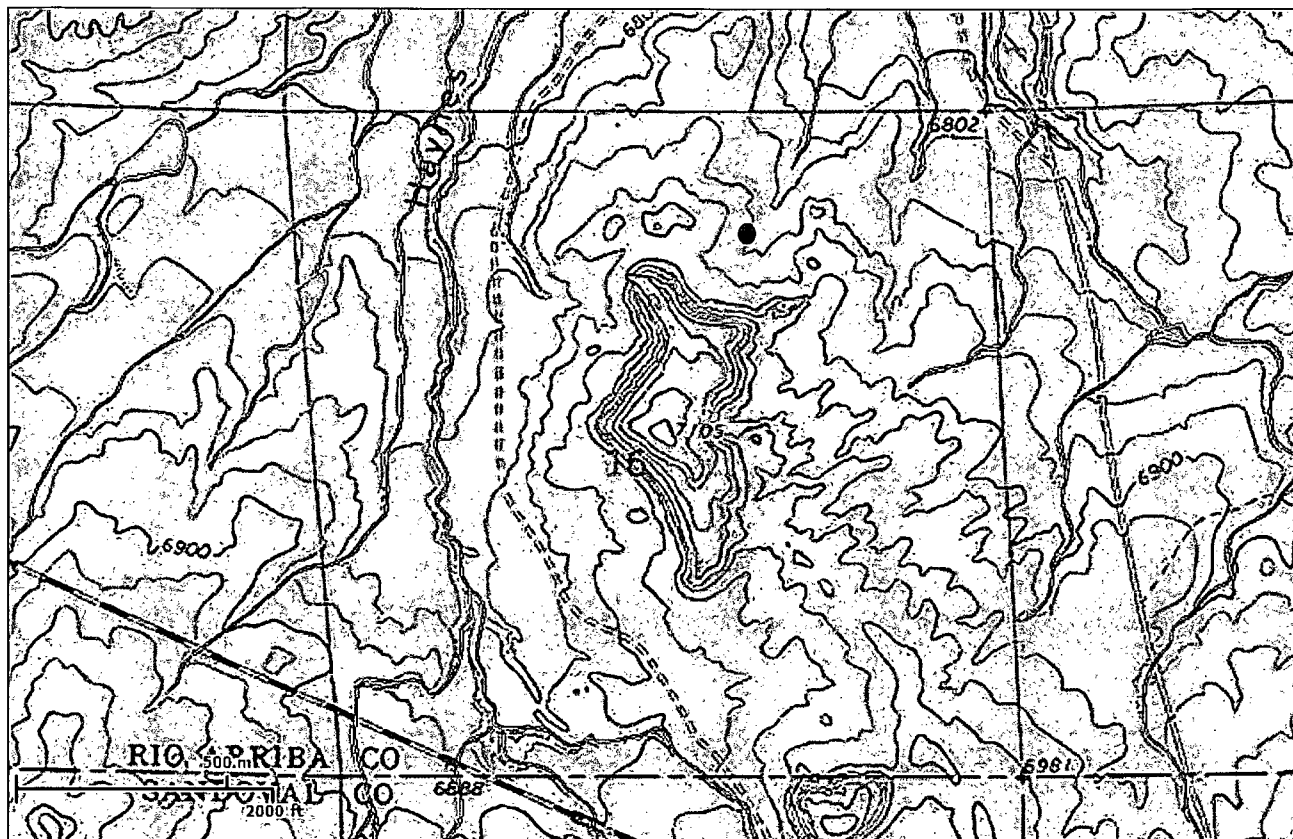


U.S. Fish and Wildlife Service

# National Wetlands Inventory

Enchilada 1

Sep 18, 2013



## Wetlands

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

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.

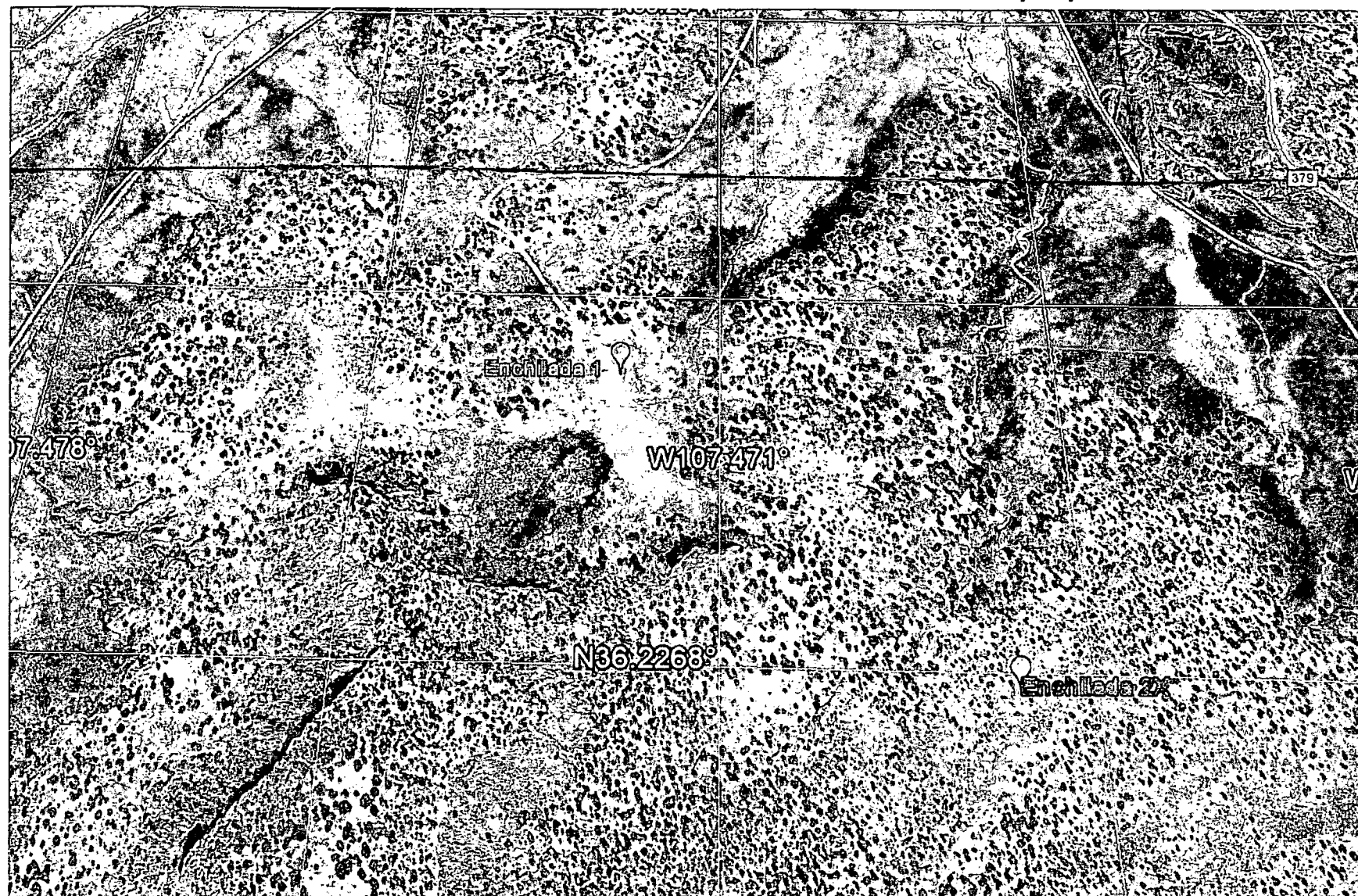
## User Remarks:

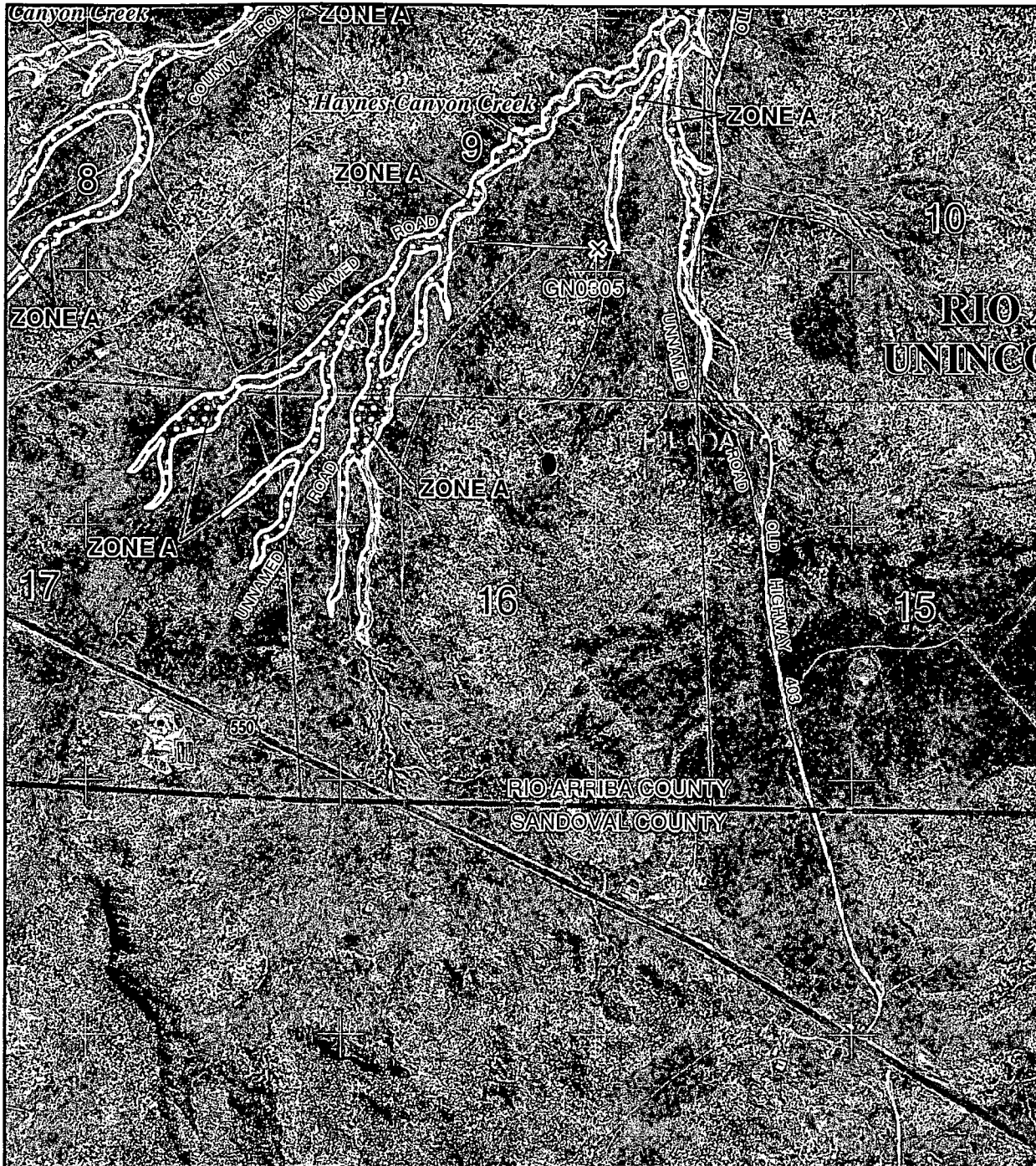
Unit Letter B, Section 16, T23N, R06W - No wetlands within 100' of drill site..

Enchilada 1 - AERIAL MAP

T23N R06W Sec 16

09/18/2013





MAP SCALE 1" = 2000'



PANEL 2350D

## FIRM

FLOOD INSURANCE RATE MAP

RIO ARRIBA COUNTY,  
NEW MEXICO

AND INCORPORATED AREAS

PANEL 2350 OF 3175

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

### CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
RIO ARRIBA COUNTY	350049	2350	D
JICARILLA APACHE NATION	350059	2350	D

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



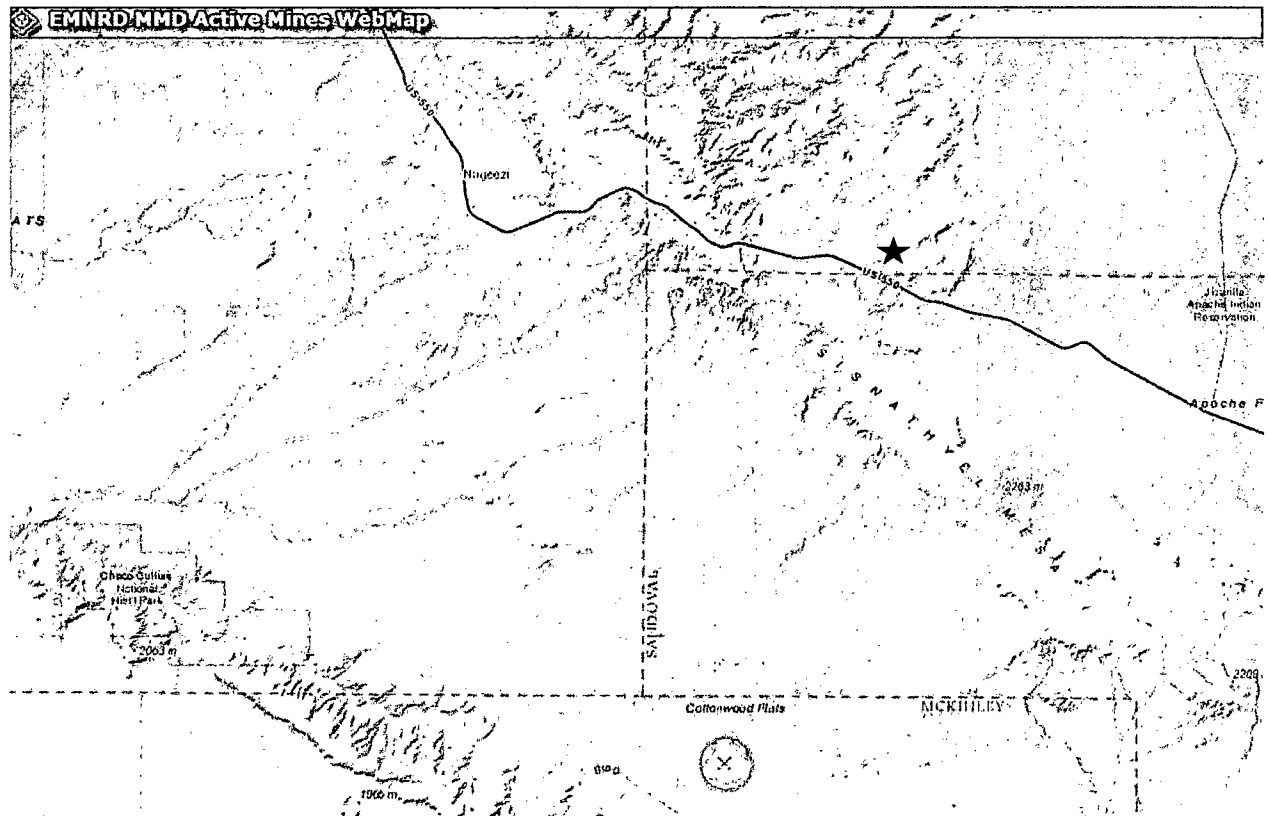
MAP NUMBER  
35039C2350D

EFFECTIVE DATE  
MARCH 15, 2012

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)

## Mines, Mills & Quarries



Enchilada 1 - Latitude 36.229524° N / Longitude 107.472153° W (NAD83)

Pueblo Alto Mine (Latitude 35.968269° N / Longitude 107.572452° W (NAD83) is closest to the Enchilada 1 @ 18 miles away.

**Logos Operating, LLC**  
**Enchilada 1**  
**Below Grade Tank Registration**  
**Siting Criteria**

1. According to the iWaters Database from the State Engineers Office, the closest known water well is 2283 meters (1.4miles) away in Section 22 of T23N R6W. The depth of the well is 280 feet and no depth to ground water is noted. The next well is 3579 meters (2.2miles) away in Section 18 of T23N R6W with a depth of 1500 feet. The depth to ground water is 200 feet.
2. The main valley of the Haynes Canyon is at rising elevation from ~6700' in the north, to ~6800+ as it goes to the south. The Enchilada 1 is to the east over a gently rising hill with a top elevation of ~6880', the location pad is at 6856'. The difference in elevation will put the bottom of the below grade tank between 51' & 100' from ground water.
3. As shown on the attached topographic map and aerial photos, there are no continuously flowing watercourses within 100' of the well, or any significant watercourses, lakebeds, sinkholes or playa lakes within 100' of the well.
4. There are no permanent residences, schools, hospitals, institutions, or churches within 300' of the well.
5. There are no domestic water wells or springs within 200' of the well. See iWaters Database printout.
6. The well is not located within any municipal boundaries.
7. The well is not within 100' of any wetlands. See attached topographic map and aerial photos.
8. There are no subsurface mines in Section 16, T23N, R06W. See attached map from the NM EMNRD Mining and Mineral Division.
9. The Enchilada 1 is not located in an "unstable" area. The location is not over a mine and is not on the side of a hill.
10. The FEMA Map indicates that the proposed location is well outside 100 year floodplain.

## ***Hydro geological report for Enchilada 1***

### **Regional Hydro geological context:**

The Enchilada 1 is located on state land in Rio Arriba County, New Mexico. The well location is in the NW/NE quarter of Section 16 of T23N R6W. The well location is on flat terrain between Haynes Canyon and Gallo Canyon. The area consists of a canyon with a gentle, nearly flat base and steeper slope on the outskirts. Regionally, the terrain consists of the Haynes Canyon complex and has steep canyon hills surrounding flat gentle valleys. The area contains a drainage basin for water and sediment in the water source in the base of the canyon.

A records search of the New Mexico Office of the State Engineer iWATERS database indicates that the closest known water well is 2283 meters (1.4miles) away in Section 22 of T23N R6W. The depth of the well is 280 feet and no depth to ground water is noted. The next well is 3579 meters (2.2miles) away in Section 18 of T23N R6W with a depth of 1500 feet. The depth to ground water is 200 feet.

Geologic maps of the area indicate that the surface formation at the proposed well site is part of the San Jose Formation, an Eocene formation composed of sandstone, shale, and minor conglomerate. The lithologic units exposed at Gallo Canyon are primarily the Regina Member with some exposure of the Cuba Mesa Member. The Regina Member is composed of shale and siltstone interbedded with fine- to coarse-grained sandstone. It is derived from floodplain and stream-channel deposits originating in the Nacimiento uplift. At the northeastern corner of the region, the Cuba Mesa Member is exposed. It is coarse-grained conglomerate sandstone and commonly intertongues with the Regina Member. The thickness of the Regina Member is up to 490 meters, while the Cuba Mesa Member is up to 245 meters.

## OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

P. O. BOX 2088

Form C-107  
Revised 10-1-78

ENERGY AND MINERALS DEPARTMENT

SANTA FE, NEW MEXICO 87501

All distances must be from the outer boundaries of the Section.

Operator: MERRION OIL & GAS CORPORATION			Lease: ENCHILADA		Well No. 1
Unit Letter B	Section 16	Township 23N	Range 6W	County Rio Arriba	
Actual Footage Location of Well: 860 feet from the North line and 1825 feet from the East line					
Ground Level Elev: 6856	Producing Formation Gallup		Pool Counselors Gallup	Dedicated Acreage: 160 Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation \_\_\_\_\_

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.

Sec.		860'	1825'
		E-1207+1	
16		RECEIVED	
		DEC - 7 1983	
		OIL CONSERV. DIV.	
		SANTA FE, N.M.	

Scale: 1"=1000'

## CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name  
Steve S. Dunn  
Position  
Operations Manager  
Company  
Merrion Oil & Gas Corporation  
Date  
12/6/83

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed  
11/30/83  
Registered Professional Engineer and Land Surveyor  
Fred B. Kerry Jr.  
Certificate No. 4 KERR. 11/30/83  
3950



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## **Logos Operating Below Grade Tank Design and Construction Plan**

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In accordance with NMAC 19.15.17, the following information describes the design and construction plan for below grade tanks (BGT) for Logos Operating, LLC (Logos). This is a standard design and construction plan for Logos.

### **General Plan in Accordance with 19.15.17.11**

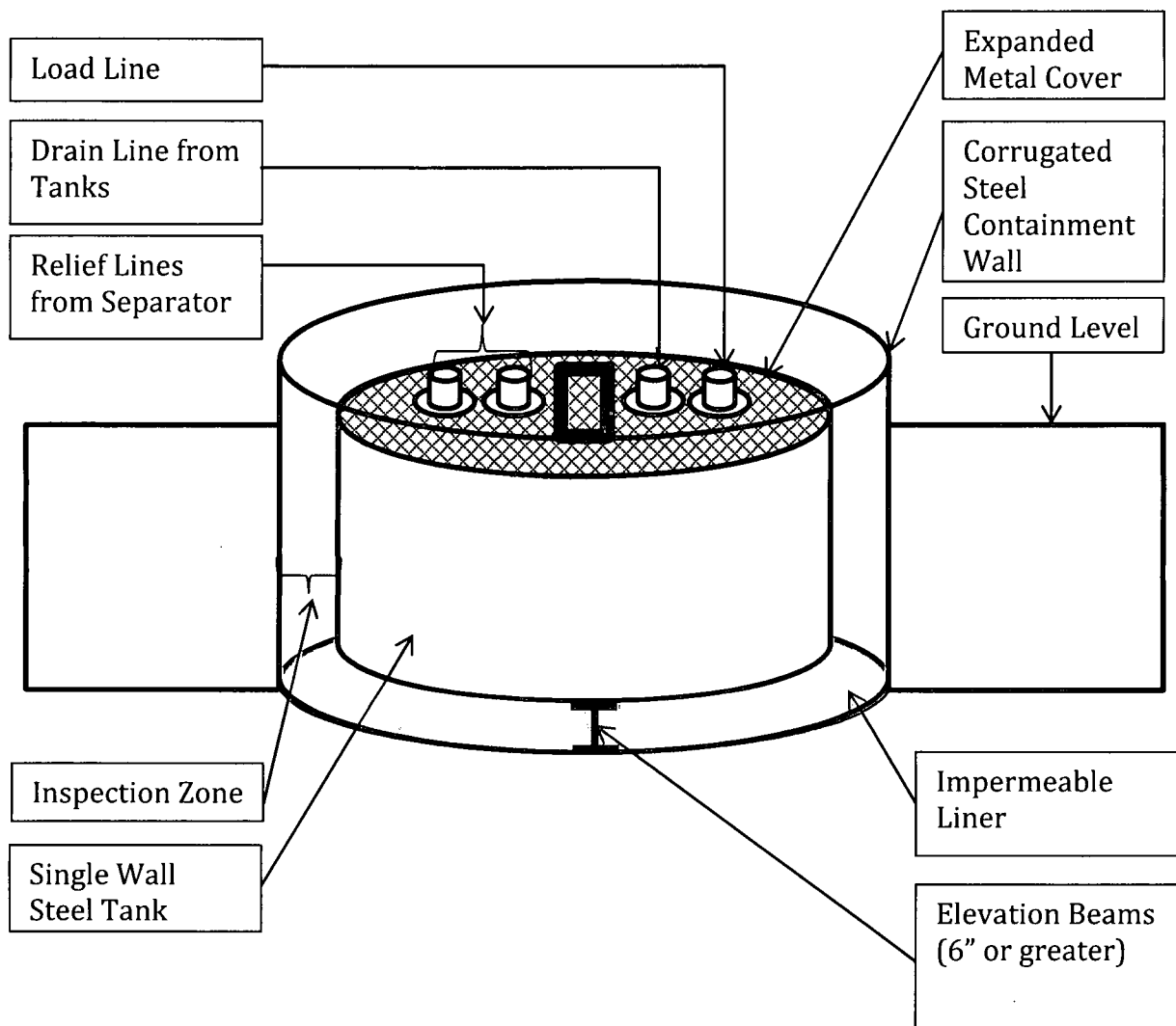
1. Logos will design and construct a BGT to contain liquids and solids that is designed to prevent contamination of fresh water and protect public health and the environment.
2. The location of the BGT will be at a battery or well location which contains proper upright signs (in compliance with 19.15.16.8 NMCA).
3. The BGT will be contained within the operating berm and will be protected with fencing to deter unauthorized access. The BGT will have an expanded metal cover.
4. The BGT will be constructed out of steel which is resistant to the particular contents and resistant to damage from sunlight. The pit will be painted to minimize rust and corrosion.
5. The foundation will be level, free of rocks, debris, sharp edges or irregularities to prevent punctures, cracks, indentations of the liner or tank bottom.
6. The BGT will be designed and constructed to prevent surface water run-on from entering the tank. The corrugated steel wall surrounding the pit will be above grade and will prevent water from running into the BGT.
7. The BGT will have a single wall that is capable of being inspected. The BGT will have a corrugated steel wall barrier that prevents the ground from collapsing around the BGT and allows for the BGT to be thoroughly inspected by providing a direct sight line to the BGT bottom and to the BGT impermeable liner.
8. The BGT will be set on beams, six inches or greater, on the liner in way that will protect the bottom of the BGT from sharp objects.
9. The BGT will only be used under manual conditions to drain tank bottoms or to relieve pressure off of separators. Fluid will not be continuously pumped into this tank, therefore, this design is based on 19.15.17.11.I.4.c. The BGT's are located at batteries that have primary water tanks so that the BGT is not used as a primary water pit, it is only used as a drain pit.
10. An impermeable liner will be installed below the BGT so that any leak in the BGT will flow to a visible point on top of the impermeable liner.



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**Logos Operating  
Below Grade Tank Design**

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## **Logos Operating Below Grade Tank Operation and Maintenance Plan**

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In accordance with NMAC 19.15.17, the following information describes the operation and maintenance plan for below grade tanks (BGT) for Logos Operating, LLC (Logos). This is a standard procedure for Logos.

### **General Plan in Accordance with 19.15.17.12**

1. Logos will operate and maintain the BGT to contain liquids and solids while maintaining the integrity of the liner, BGT, and corrugated steel wall. The operation and maintenance are plan are designed to prevent contamination of fresh water and protect public health and safety.
2. Logos will not store or discharge hazardous waste into the BGT.
3. If the BGT develops a leak, Logos will remove all of the fluids from the BGT within 48 hours and notify the appropriate division office pursuant to 19.15.29 NMAC. Logos will immediately take the BGT out of service until it is properly repaired or replaced.
4. The BGT will be operated and designed to prevent the collection of surface water run-on.
5. The BGT will be bounded by a corrugated steel wall which will contain an unanticipated release. The BGT and corrugated steel wall are also located inside of the berm which will act as a secondary containment barrier in the event of an unanticipated release.
6. Logos will not allow the BGT to overflow or collect surface water run on.
7. Logos will remove any measurable layer of oil from the BGT.
8. The BGT will be inspected at least monthly and the integrity will be documented annually with records maintained for at least 5 years.
9. The BGT will be operated with adequate freeboard to prevent overtopping of the BGT.



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## Logos Operating Below Grade Tank Closure Plan

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In accordance with NMAC 19.15.17.13, the following information describes the closure plan for below grade tanks (BGT) for Logos Operating, LLC (Logos).

### **General Plan in Accordance with 19.15.17.13**

1. Logos will obtain approval of a closure plan prior to commencing closure operations.
2. Logos will close the BGT by first removing all contents and liners and disposing the contents at an approved facility as necessary.
3. The soils beneath the BGT will be tested as follows:
  - a. A five point composite sample including any obvious staining shall be taken under BGT and will be analyzed for constituents listed in Table I of 19.15.17.13 NMAC.
  - b. Based on the results of the soil test, Logos will obtain approval prior to completing any necessary additional delineation for closure. If the soil tests are at or below the standards of closure, Logos will proceed with closure.

Components	Tests Method	Limit (mg/Kg)
Benzene	EPA SW-846 8021B or 8015M	10
BTEX	EPA SW-846 8021B or 8260B	50
TPH	EPA SW-846 418.1	2500
GRO/DRO	EPA SW-846 8015M	1000
Chlorides	EPA 300.0	10,000

4. Logos will notify the surface owner by certified mail, return receipt requested, of plans to close the BGT with at least 72 hour notice, but no more than 1 week, prior to any closure operation. The notice will include the well name, API number, and location.
5. Logos will notify the appropriate district office verbally and in writing with at least 72 hours of notice but no more than 1 week. The notice will include well name and API number as well as the location containing unit letter, section, township, and range.
6. Logos will submit a closure report on form C-144 within 60 days of closure completion. The closure report will contain back filling details, capping and covering where applicable, all necessary attachments, certification that all information contained in the report is correct and that the operator has complied with all applicable closure requirements to the best of its knowledge.

7. Logos will remove liquids and sludge from the BGT within 60 days of cessation of operations and dispose of those at a division approved facility.
8. Within 6 months of cessation of operations, Logos will remove the BGT and all associated equipment associated with only the BGT. Equipment that is required for other purposes will remain in place.
9. Upon closing of the BGT, Logos will reclaim the unused BGT location to a safe and stable condition that blends with the surrounding undisturbed area as provided in Paragraph 2 of subsection H of 19.15.17.13 as well as recontouring the area in accordance with paragraph 5 in subsection H of 19.15.17.13 NMAC. The soil cover will be constructed to prevent ponding of water and erosion of the cover material.
10. Areas needed for production operations will be compacted, stabilized, and maintained to minimize dust and erosion as much as practicable.
11. The reclamation of the BGT area will contain a uniform vegetative cover that reflects a life-form ratio of plus or minus fifty (50%) of pre-disturbance levels and a total percent plant cover of at least seventy (70%) of pre-disturbance levels, excluding noxious weeds. The re-vegetation and reclamation obligations imposed by other applicable federal or tribal agencies that manage the lands will supersede these provisions and govern the obligations.
12. Logos will notify the division when reclamation and re-vegetation is complete.