

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

11465

- 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: Logos 3
API Number: 30-043-21135 OCD Permit Number: _____
U/L or Qtr/Qtr P Section 05 Township 22N Range 06W County: Sandoval
Center of Proposed Design: Latitude 36.162557°N Longitude 107.48672°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 NOV 21 '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 22 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.

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.

- 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

<p>Within 100 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p><u>Temporary Pit Non-low chloride drilling fluid</u></p>	
<p>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</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>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</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>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</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 300 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p><u>Permanent Pit or Multi-Well Fluid Management Pit</u></p>	
<p>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</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>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</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>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</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</p>	<input type="checkbox"/> Yes <input type="checkbox"/> 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 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 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.
- 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 |
| 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 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 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 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 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 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.
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 | <input type="checkbox"/> Yes <input 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 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 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 type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input type="checkbox"/> No

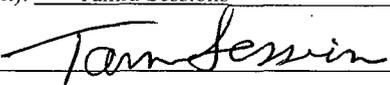
16. **On-Site Closure Plan Checklist:** (19.15.17.13 NMAC) *Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.*

- 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:**

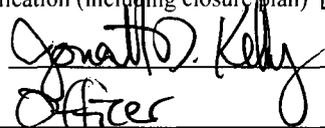
I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Tamra Sessions Title: Operations Technician

Signature:  Date: 11/20/13

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: 11/25/2013

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.



**Logos Operating
Below Grade Tank Application**

Siting criteria, hydrological report, proof of ground water >100', C-102, Cut-n-Fill diagram and maps were provided in the Temporary Pit Application submitted on 11/27/12 and approved on 12/10/12 per OCD permit #10667.

Please see attached Below Grade Tank Design Plans, Below Grade Tank Operation and Maintenance Plan, and Below Grade Tank Closure Plan.



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 Code	Subbasin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
<u>SJ 01506</u>			SA	1	1	3	22	23N	06W	278535	4010015*	5450	280		
<u>SJ 01156</u>			RA	2	2	1	18	23N	06W	274330	4012555*	7777	1500	200	1300
													Average Depth to Water:		200 feet
													Minimum Depth:		200 feet
													Maximum Depth:		200 feet

Record Count: 2

Basin/County Search:

Basin: San Juan

UTMNAD83 Radius Search (in meters):

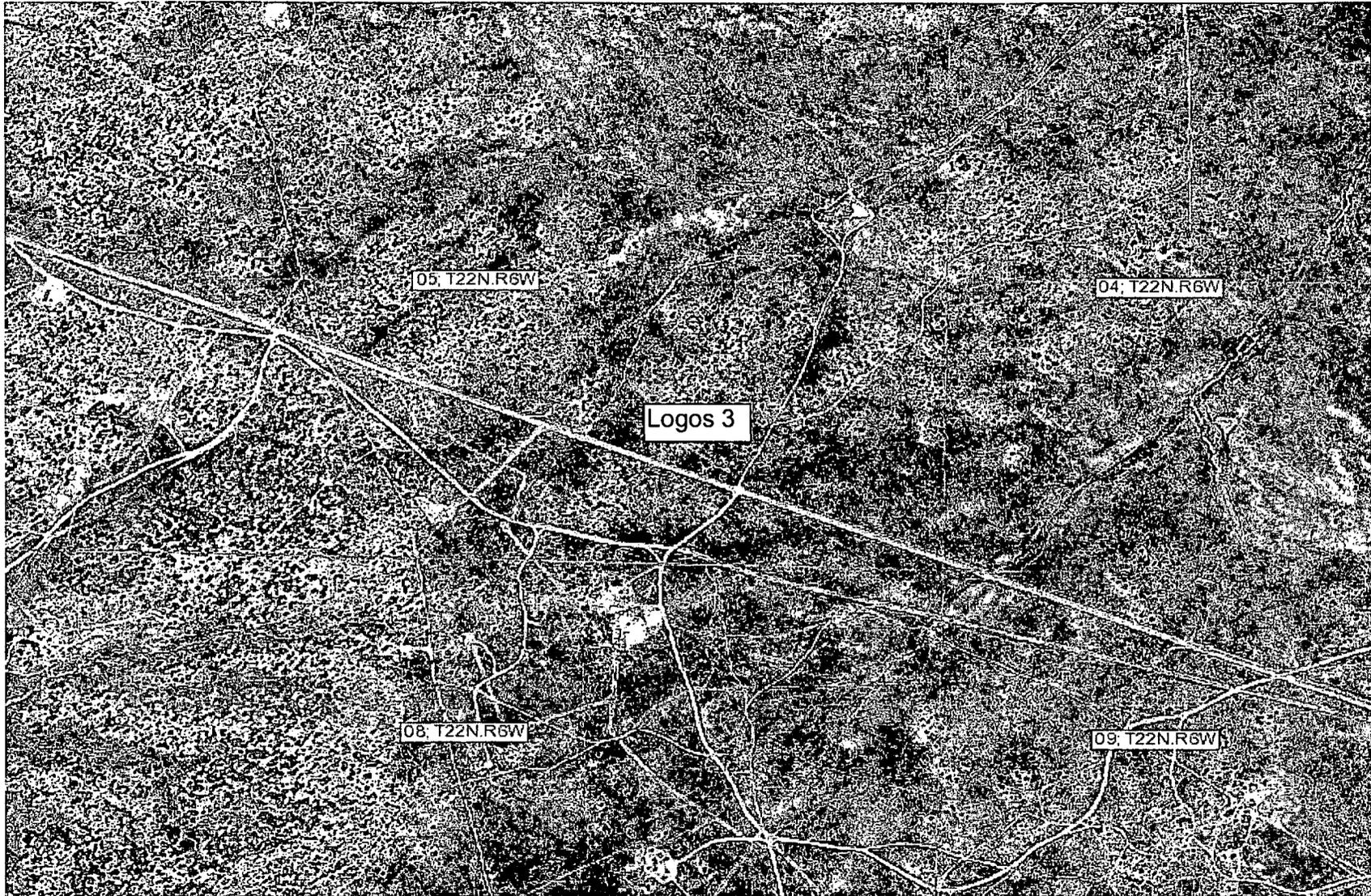
Easting (X): 276318

Northing (Y): 4005036

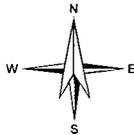
Radius: 10000

*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.



0 500 1000ft



Petroleum Recovery
Research Center

Logos #3

Figure: ##

Logos Operating, LLC

Nov 08, 2012

Sandoval County
Unincorporated Areas
350055

T. 23 N.

T. 22 N.

RESERVATION

SANCHARLES

BOUNDARY

KEEISO RD

KEEISO RD

CORNFIELD RD

KEEISO RD

PUEBLO PINTADO

NAVAJO INDIAN
RESERVATION

BEDNOR RD

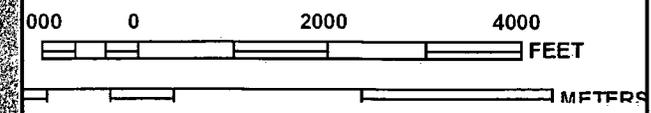
ZONE X

ZONE X

RESERVATION BOUNDARY



MAP SCALE 1" = 2000'



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0075D

FIRM
FLOOD INSURANCE RATE MAP
SANDOVAL COUNTY,
NEW MEXICO
AND INCORPORATED AREAS

PANEL 75 OF 2225
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SANDOVAL COUNTY, UNINCORPORATED AREAS	350055	0075	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
35043C0075D
MAP REVISED
MARCH 18, 2008

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

Logos Operating, LLC
Logos #3
Below Grade Tank Registration
Siting Criteria

1. According to the iWaters Database from the State Engineers Office, the closest known water well is 5450 meters from the Logos #3 location in Section 22, T23N, R6W and was drilled to a depth of 280'. See attached printout.
2. 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.
3. There are no permanent residences, schools, hospitals, institutions, or churches within 300' of the well.
4. There are no domestic water wells or springs within 200' of the well. See iWaters Database printout.
5. The well is not located within any municipal boundaries.
6. The well is not within 100' of any wetlands. See attached topographic map and aerial photos.
7. There are no subsurface mines in Section 5, T22N, R6W. See attached map from the NM EMNRD Mining and Mineral Division.
8. The Logos #3 is not located in an "unstable" area. The location is not over a mine and is not on the side of a hill.
9. The well is not located in a 100-year floodplain as visible on the topographic map and the FEMA Flood Insurance Rate Map.

Hydro geological report for Logos #3

Regional Hydro geological context:

The Logos #3 is located on federal land in Sandoval County, New Mexico. The well location is on the valley floor between two very minor drainages that run north and eventually drain into Largo Wash. The area around the location is mainly gently rolling sage brush covered hillsides of primarily dry, sandy soil with occasional boulders. Numerous small arroyos drain to the north.

A records search of the NM Office of the State Engineer – iWATERS database indicates that the closest known water well is 5450 meters away in Section 22, T23N, R6W. The depth to ground water is not listed but the well was drilled to 280'. The next well is 7777 meters away in Section 18, T23N, R6W. The depth to ground water is 200' and the well was drilled to 1500'.

Geologic maps of the area indicate that the surface formation at the proposed well site is the San Jose formation. The San Jose Formation of Eocene age occurs in New Mexico and Colorado and its outcrop forms the land surface over much of the eastern half of the central basin. It overlies the Nacimiento Formation in the area generally south of the Colorado – New Mexico State line and overlies the Animas Formation in the area generally north of the State line.

The San Jose Formation was deposited in various fluvial-type environments. In general, the unit consists of an interbedded sequence of sandstone, siltstone and variegated shale. Thickness of the San Jose Formation generally increases from west to east (200 feet in the west and south to almost 2,700 feet in the center of the structural basin).

Ground water is associated with alluvial and fluvial sandstone aquifers. Thus, the occurrence of ground water is mainly controlled by the distribution of sandstone in the formation. The distribution of such sandstone is the result of original depositional extent plus any post-depositional modification, namely erosion and structural deformation. Transmissivity data for San Jose Formation are minimal. Values of 40 and 120 feet squared or measured discharge from 46 water wells completed in San Jose Formation ranges from 0.15 to 61 gallons per minute and the median is 5 gallons per minute. Most of the wells provide water for livestock and domestic use.

The San Jose Formation is a very suitable unit for recharge from precipitation because soils that form on the unity are sandy and highly permeable and therefore readily absorb precipitation. However, low annual precipitation, relatively high transpiration and evaporation rates, and deep dissection of the San Jose Formation by the San Juan River and its tributaries all tend to reduce the effective recharge of the unit.

Stone et al, 1983, Hydrogeology and Water Resources of the San Juan Basin, New Mexico Socorro, New Mexico Bureau of Mines and Mineral Resources Hydrologic Report 6, 70p

Site specific information:

<i>Surface hydrology:</i>	The site is located at the upper end of the Largo Wash drainage and is drained by a number of small intermittent drainages
<i>1st water-bearing formation:</i>	San Jose, tertiary
<i>Formation thickness:</i>	200 - 700 feet
<i>Underlying formation:</i>	Nacimiento, Tertiary
<i>Depth to ground water:</i>	Unknown. Due to the elevation difference of greater than 115' between the Logos #3 and the north branch of the Venado Canyon, we believe the depth to ground water is greater than 100' below the bottom of the pit.

DISTRICT I
1686 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
611 B. First St., Artoledo, N.M. 88210
Phone: (575) 740-1859 Fax: (575) 740-0720

DISTRICT III
1000 Rio Bravo Rd., Artes, N.M. 87410
Phone: (505) 334-6170 Fax: (505) 334-6170

DISTRICT IV
1820 R. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 470-8460 Fax: (505) 470-8468

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

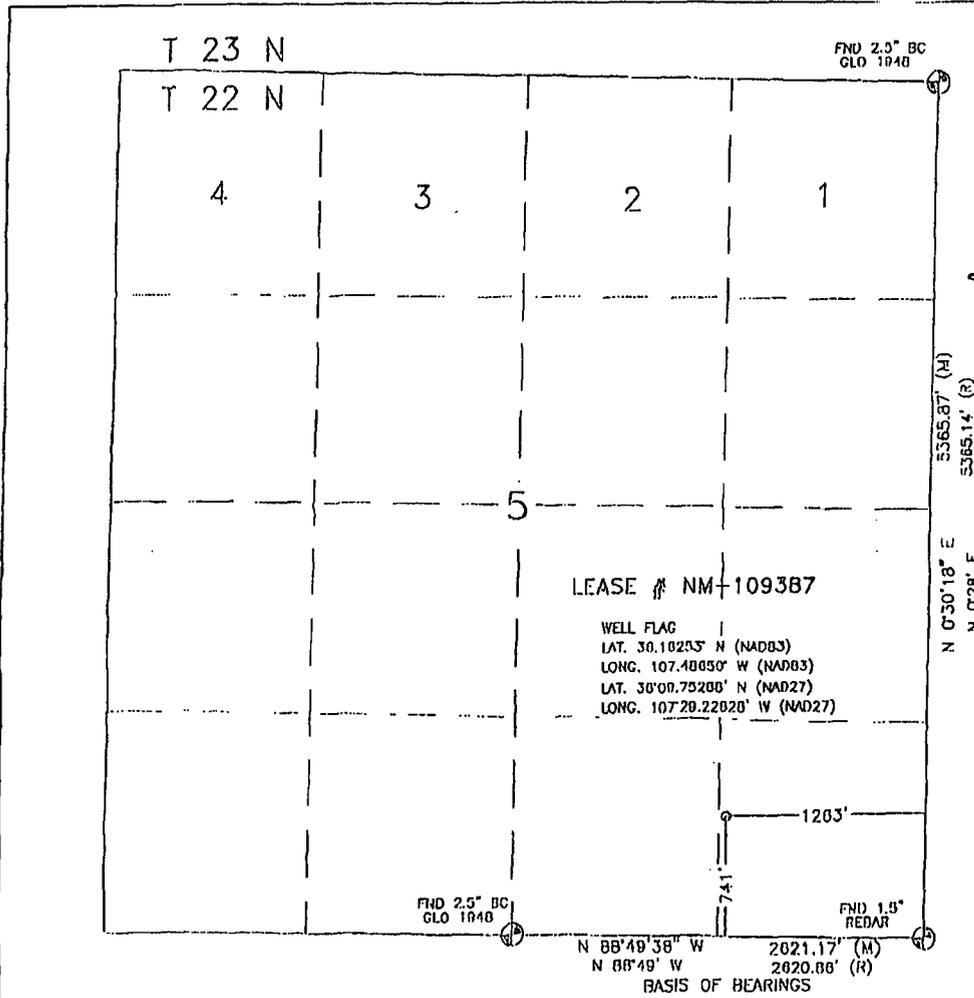
¹ API Number	² Pool Code	³ Pool Name WILDCAT DAKOTA
⁴ Property Code	⁵ Property Name LOGOS	⁶ Well Number 3
⁷ UGRID No.	⁸ Operator Name LOGOS OPERATING, LLC	⁹ Elevation 7181'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Foot from the	North/South line	Foot from the	East/West line	County
P	5	22N	6W		741'	SOUTH	1263'	EAST	SANDOVAL

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Foot from the	North/South line	Foot from the	East/West line	County
¹² Dedicated Acre					¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.		



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the Division.

[Signature] 10/17/2012
Signature Date

John C. Thompson
Printed Name

john.walsheng.net
E-mail Address

18 SURVEYOR CERTIFICATION

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 belief.

OCTOBER 1, 2012
Date of Survey

[Signature]
Signature and Title of Registered Surveyor:



DAVID RUSSELL
Certificate Number 10201



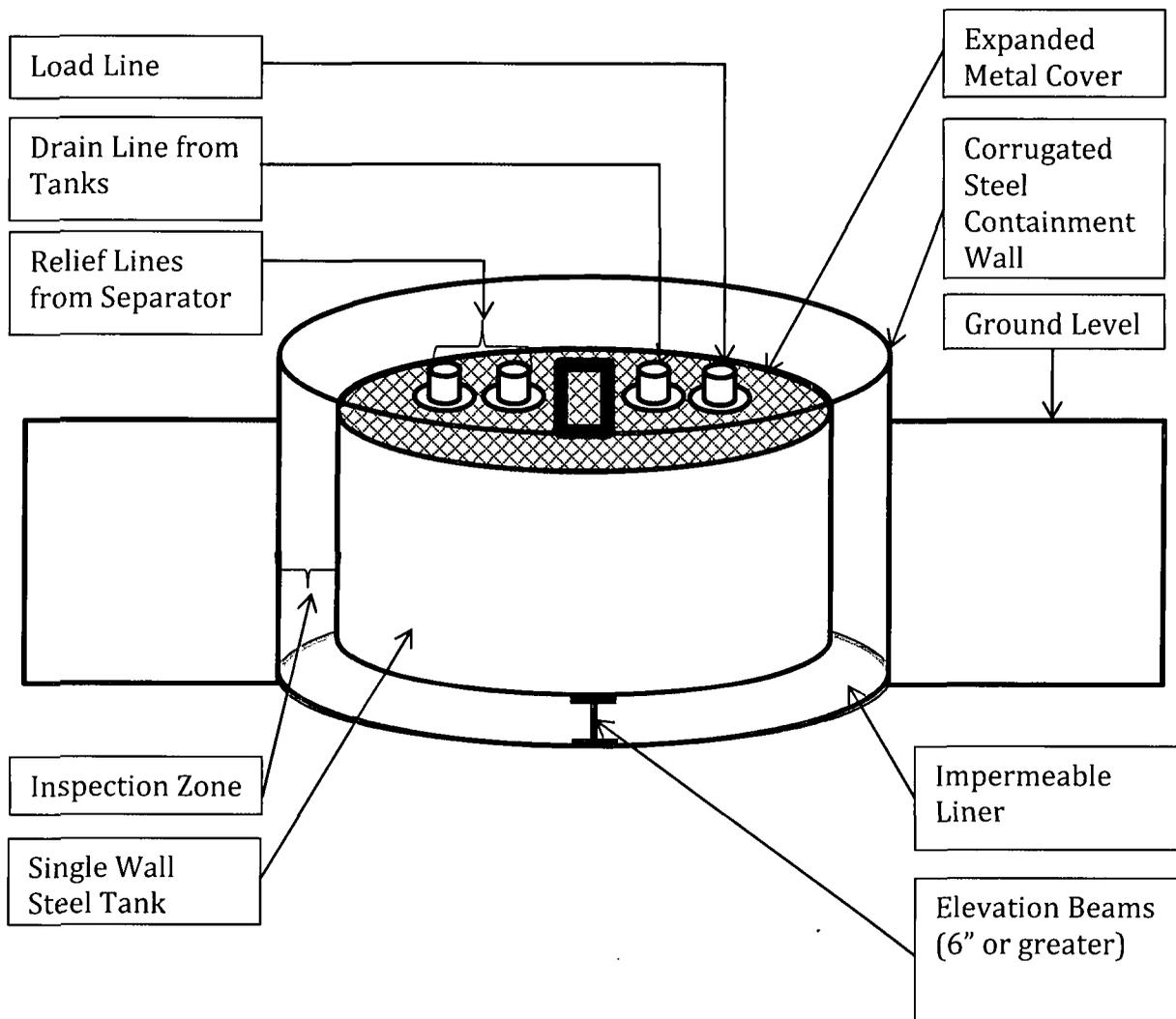
Logos Operating Below Grade Tank Design and Construction Plan

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.

**Logos Operating
Below Grade Tank Design**





Logos Operating Below Grade Tank Operation and Maintenance Plan

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.



Logos Operating Below Grade Tank Closure Plan

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.
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.



**Logos Operating
Below Grade Tank Closure Plan**

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

RCVD NOV 25 '13
OIL CONS. DIV.
DIST. 3

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

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