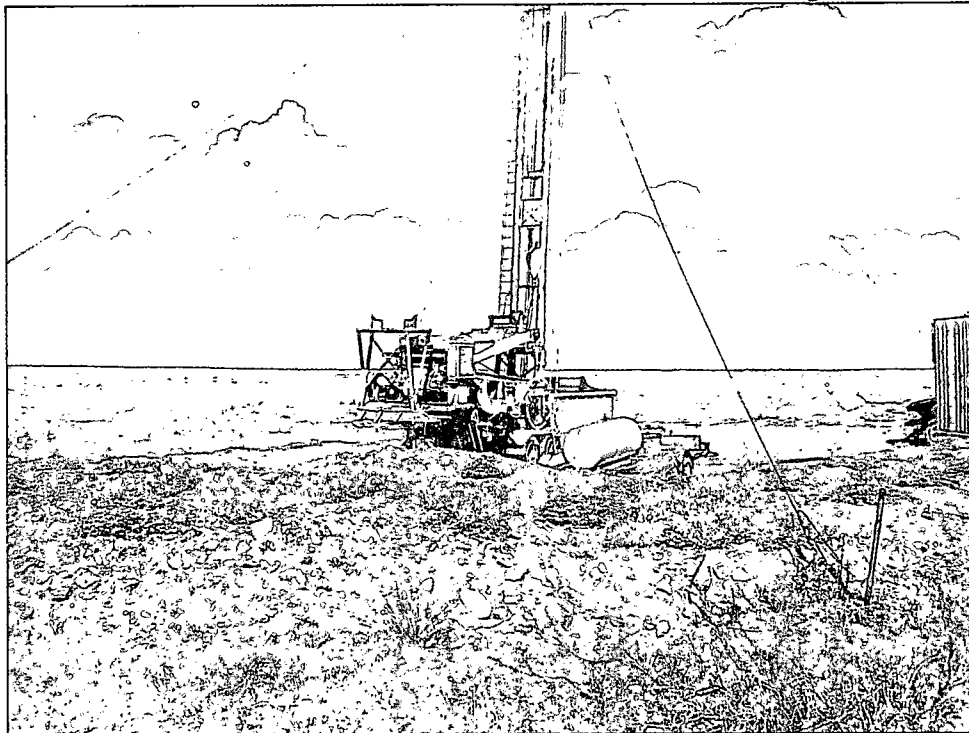


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September 2013

C-144 Permit Package for
Lennox 32 State No. 2H
Temporary Pit
Section 32 T22S R35E Lea County NM



Prepared for
Caza Operating, LLC
Midland, Texas

Prepared by
R.T. Hicks Consultants, Ltd.
Albuquerque, New Mexico

SEP 17 2013

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

September 9, 2013

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Mr. Geoffrey Leking
NMOCD District
1625 French Drive
Hobbs, New Mexico 88240
Via E-mail and Regular Mail

RE: Caza Operating, Lennox 32 State No. 2H C-144 Permit Modification

Dear Geoffrey:

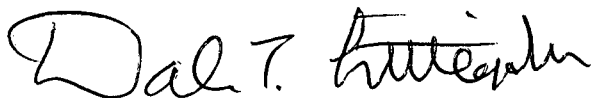
On behalf of Caza Operating, enclosed are:

1. A C-144 Form to modify the existing application (approved on January 7, 2013) to comply with the new Rule and
2. Updated (and recent OCD-approved) closure plans that are consistent with the new Rule.

The site-specific write-up, figures, plates, and appendix are unchanged from the earlier approved plan. We anticipate initiation of closure activities in the next few weeks.

Please contact me if you have any questions or need additional information.

Sincerely,
R.T. Hicks Consultants



Dale T. Littlejohn

Copy: Richard Wright, Caza Operating, LLC
Terry Warnell, NM State Land Office

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

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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: Caza Operating LLC OGRID #: 249099
Address: 200 North Loraine, Suite 1550, Midland, Texas 79701
Facility or well name: Lennox "32" State Well No. 2H
API Number: 30-025-40451 OCD Permit Number: P1-04235
U/L or Qtr/Qtr A Section 32 Township 22S Range 35E County: Lea
Center of Proposed Design: Latitude 32.354456° N Longitude -103.382782° 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 20 mil ☒ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
☒ String-Reinforced
Liner Seams: ☒ Welded ☐ Factory ☐ Other _____ Volume: 33,598 bbl Dimensions: L 142 x W 211 x D 6-11 ft (drilling) 10 ft (fluids cell)

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)
☒ 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.
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 **See Figure 2**

☐ 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**) **See Figure 5**

☐ Yes ☒ No

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

Within the area overlying a subsurface mine. (**Does not apply to below grade tanks**) **See Figure 7**

☐ Yes ☒ No

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

Within an unstable area. (**Does not apply to below grade tanks**) **See Figure 8**

☐ Yes ☒ No

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

Within a 100-year floodplain. (**Does not apply to below grade tanks**) **See Figure 9**

☐ Yes ☒ No

- FEMA map

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).

☐ Yes ☐ No

- Topographic map; Visual inspection (certification) of the proposed site

Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;

☐ Yes ☐ No

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

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.)

☐ Yes ☐ No

- Topographic map; Visual inspection (certification) of the proposed site

Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application.

☐ Yes ☐ No

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

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 300 feet of any other fresh water well or spring, in existence at the time of the initial application.

☐ Yes ☐ No

NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

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). **See Figure 3**

- 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. **See Figure 4**

☐ 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

See Figures 1 & 2

Within 300 feet of a wetland. **See Figure 6**

- 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 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 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 checked="" 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 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	

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): Richard Wright

Title: Production Superintendent

Signature: Richard L. Wright

Date: September 9, 2013

e-mail address: rwright@cazapetro.com

Telephone: (432) 682-7472 (x1006)

18.

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

OCD Representative Signature: Jeffrey Sekins

Approval Date: 9/16/13

Title: Environmental Specialist

OCD Permit Number: P1-04235

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: _____

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C-144 and Site Specific Information for Temporary Pit

R.T. Hicks Consultants, Ltd.

901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

Distance to Groundwater

Figure 1, Figure 2, and the discussion presented below demonstrates that groundwater (fresh water as defined by NMOCD Rules) at the location is greater than 100 feet beneath the temporary pit.

Figure 1 is an area geologic and topographic map that demonstrates:

1. The location of the temporary pit as an orange square.
2. Water wells from the OSE database are shown as a blue triangle inside colored circles that indicate well depth with a corresponding permit number. Please note, OSE wells are often miss-located in the WATERS database as older wells are plotted in the center of the quarter, quarter, of the Section Township and Range.
3. Water wells from the USGS database are shown with a large red triangle.
4. Water wells, which are not documented in the public databases or published documents but were identified by field inspection, are indicated by red dots.

Figure 2 is a Groundwater Gradient Map from Ground-Water Report 6 (GWR6) *Geology and Ground-Water Conditions in Southern Lea County, New Mexico* by Alexander Nicholson and Alfred Clebsch (1961) that demonstrates:

1. The location of the temporary pit as an orange square.
2. The groundwater gradient of the Tertiary Ogallala aquifer as solids lines located along the east side of map.
3. The groundwater gradient of the deeper Triassic aquifer as dashed lines located in the central and west portions of map.
4. Water wells from the report identified with open (Ogallala) or closed (Triassic) circles and labeled with groundwater depth and well total depth.
5. Water wells from the USGS and OSE databases or field observations that are nearest to the site and are considered important to the determination of the groundwater depth. Well numbers (blue) on this map refer to the data table below and groundwater elevations (blue) are provided for the Ogallala aquifer.

Geology and Hydrogeology

The proposed temporary pit is located on an outcrop of the Tertiary Ogallala Formation (To on Figure 1). It consists primarily of sand with some clay, silt and gravel, generally capped by caliche. The Ogallala Formation in the surrounding area is partially covered by Quaternary age eolian piedmont deposits (Qe/Qp), lacustrine and playa deposits (Qpl), and older alluvial deposits (Qoa). Topographically, the site is on a thin (1000-foot wide) northwest to southeast trending ridge that separates low valleys to the northeast and southwest. The ridge and valleys characteristic of the San Simon area are generally reflective of the underlying Triassic red-beds and deeper rocks. Approximately 20 feet of topographic relief is present from the site location on the ridge to the valleys on either side.

Based on information from the cable-tool drilling rig used to install the initial well at the Lennox State 32 No. 2H location, the Ogallala Formation is 81 feet thick and overlies a hard red-bed layer of the upper Triassic (Chinle Formation). Groundwater is consistent in the Ogallala Formation approximately 7 miles to the east of the site and within the Triassic Formation at a

Siting Criteria (19.15.17.10 NMAC)

Caza Operating: Lennox State 32 Well No. 2H

much greater depth. Relative shallow groundwater is also present in the valleys adjacent to the site where the sands and gravels rest on red-beds that are below the Ogallala/Alluvium groundwater depth. These aquifers are useful for domestic and livestock supplies locally, but are isolated from one another by the subsurface structure of the red-beds along the topographic ridges.

Water Table Elevation

Thirteen water wells were identified in the area surrounding the Lennox State 32 No. 2H site to determine the water table elevation below the temporary pit. They include two wells from the New Mexico Office of the State Engineer (OSE) database, six wells from the USGS database, five wells from the Ground-Water Report 6 (GWR6), and two well that were identified only by field inspection. A summary of the available water well data, with respect to groundwater elevation, is provided on the table below.

Well Numbers	Well Location					Well Source Information					Groundwater Elevation Data							Gauging Date
	Township (south)	Range (east)	Section	Quarter Section (64, 16, 4)		NM-OSE Database	USGS Database	GW Report No. 6	USGS Topo Sheet	Aerial Photograph	Field Verification	Surface Elevation (published)	Surface Elevation (Topo Sheet)	Well Total Depth (published)	Depth to Water (published)	Groundwater Elev. (published)	Groundwater Elev. (using topo elev.)	
GWR6-1	21	35	27	1	2	3		✓	✓	-	-	3,615	3,569		21.8	3,593	3,547	12/8/58
GWR6-2	21	35	30	1	1	4		✓	✓	-	-	3,630	3,608	58	35.6	3,594	3,572	11/25/53
USGS-646	22	34	8	2	3	2		✓		✓	-	3,578	3,573	35	30.8	3,547	3,542	2/16/96
USGS-642	22	34	11	2	4	2	✓	✓		✓	-	3,517	3,520	45	30	3,487	3,490	10/5/66
GWR6-3	22	34	12	3	1	1	✓		✓	✓	-	3,530	3,525	62	48	3,482	3,477	12/31/51
USGS-607	22	34	23	1	3	2		✓		✓	-	3,452	3,451	60	22.1	3,430	3,429	2/21/96
USGS-651	22	35	6	1	4	4		✓		✓	-	3,598	3,596	62	46.6	3,551	3,549	2/21/96
Cotton Mill	22	35	20	2	2	2				✓	-							
Dees Mill	22	35	34	2	2	1				✓	-		3,500		75.1		3,425	8/2/12
*GWR6-4	23	34	1	4	4	4			✓	✓	-	3,360	3,360	144	137	3,223	3,223	12/31/51
*GWR6-5	23	35	27	4	4	4			✓		-	3,480			117	3,363		5/6/05
*USGS-546	23	35	11	1	4	2		✓		✓	-	3,435	3,432	205	96.9	3,338	3,335	3/7/96
USGS-519	23	35	15	2	3	4		✓		✓	-	3,475		60	42.5	3,433		3/7/96

✓ Indicates well was verified, (blank) indicates well not verified, and -- indicates no attempt to verify

* Indicates wells completed in the (deeper) Triassic aquifer, based on groundwater elevation

Visual inspections of questionable wells were performed to verify the information provided by the public records and published reports. Initially, an attempt was made to identify each well using USGS topographic maps. The surface elevations of wells identified on the maps were compared to the published surface elevation, if available. Wells that could not be verified using maps were searched for using current and historic satellite photographs in an effort to identify windmills, tanks, or roads associated with the well. Locations that could not be verified by maps or photographs were verified in the field. Attempts were also made to gauge wells during the field investigation when access was permitted. The results of the field inspections are summarized as follows:

- The Cotton Windmill could not be accessed do to private property restrictions, so no information is available.

Siting Criteria (19.15.17.10 NMAC)
Caza Operating: Lennox State 32 Well No. 2H

- The Dees Windmill was visited and a water level of 75.1 feet below the ground surface was measured via access to the tubing. This water depth should be viewed as a “minimum” value that is dependent on the integrity of the pump seals. A tubing water level will always be at or above the actual static water level; therefore the groundwater elevation is labeled as <3,425 feet on Figure 2.

The nearest surrounding Ogallala water wells with groundwater measurements are USGS wells #607 and #519 both measured in 1996, and the Dees Windmill, measured in August of 2012. Based on these three wells the average groundwater elevation across the area is less than 3,429 feet above sea level. The surface elevation at the proposed location of the temporary pit is 3,536 feet (greater than 107 feet above the static water level). During the installation of the initial hole with the cable-tool drilling rig the Triassic red-beds (with no groundwater) were encountered at a depth of 81 feet (3,455 feet above sea level). In light of this information, it can be assumed that the proposed temporary pit is in a structurally high area with respect to the Triassic; therefore the Ogallala groundwater is not present. The uppermost groundwater at the site is the Triassic aquifer at approximately 400 feet below the surface.

Distance to Surface Water

Figure 3 and the site visit demonstrates that the location is not 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).

- Data from the USDA’s National Hydraulic Dataset indicates a “lake or a pond” (shown in green on Figure 3) approximately 1,200 feet south of the proposed temporary pit.
- The nearest topographic low area is 600 feet to the northeast, but it does not contain a USGS identified drainage feature (see photograph below).
- No other watercourses, as defined by NMOCD Rules, or water bodies exist with 300-feet of the location.

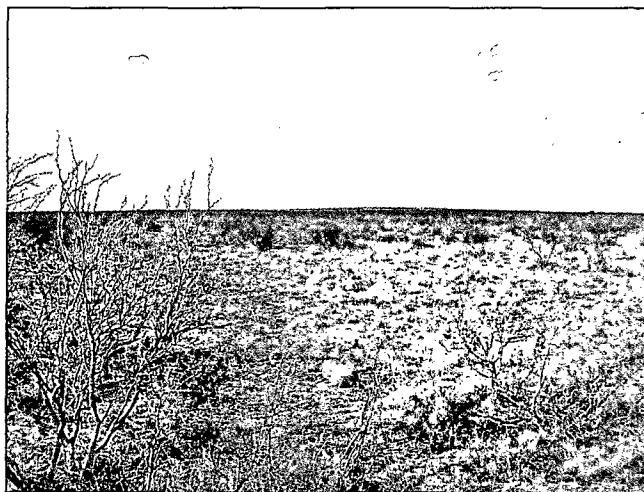


Photo to Northeast (downslope) from Site

Distance to Permanent Residence or Structures

Figure 4 and the site visit demonstrates that the location is not within 300 feet from a permanent residence, school, hospital, institution, church, or other structure in existence at the time of initial application.

Distance to Non-Public Water Supply

Figures 1 and Figure 2 demonstrates that the location is not within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.

- Figure 1 and 2 show the locations of all area water; the nearest water well is located approximately 1.5 miles to the east (Dees Windmill). The nearest domestic water well is located approximately 5 miles to the north-northwest (San Simon Ranch House)
- No springs were identified within the mapping area

Distance to Municipal Boundaries and Fresh Water Fields

Figure 5 demonstrates that the location is not within incorporated municipal boundaries or defined municipal fresh water well fields covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.

- The closest municipality is Eunice, NM approximately 14 miles to the east-northeast
- The closest public well field is located approximately 40 miles to the northwest

Distance to Wetlands

Figure 6 demonstrates the location is not within 500 feet of wetlands.

- The nearest designated wetlands is a “Freshwater Pond” located approximately 1 mile to the northwest
- Several areas to the southwest are shown as surface water on Figure 3, but are not designated as wetlands by the US Fish and Wildlife Service

Distance to Subsurface Mines

Figure 7 and our general reconnaissance of the area demonstrate that the nearest subsurface mines are caliche pits.

- The nearest caliche pit is located approximately 3.5 miles to the east

Distance to High or Critical Karst Areas

Figure 8 shows the location of the temporary pits with respect BLM Karst areas

- The proposed temporary pit is located within a “low” potential karst area

Siting Criteria (19.15.17.10 NMAC)
Caza Operating: Lennox State 32 Well No. 2H

- The nearest “high” or “critical” potential karst area is located approximately 30 miles west of the site

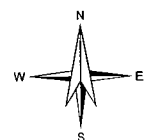
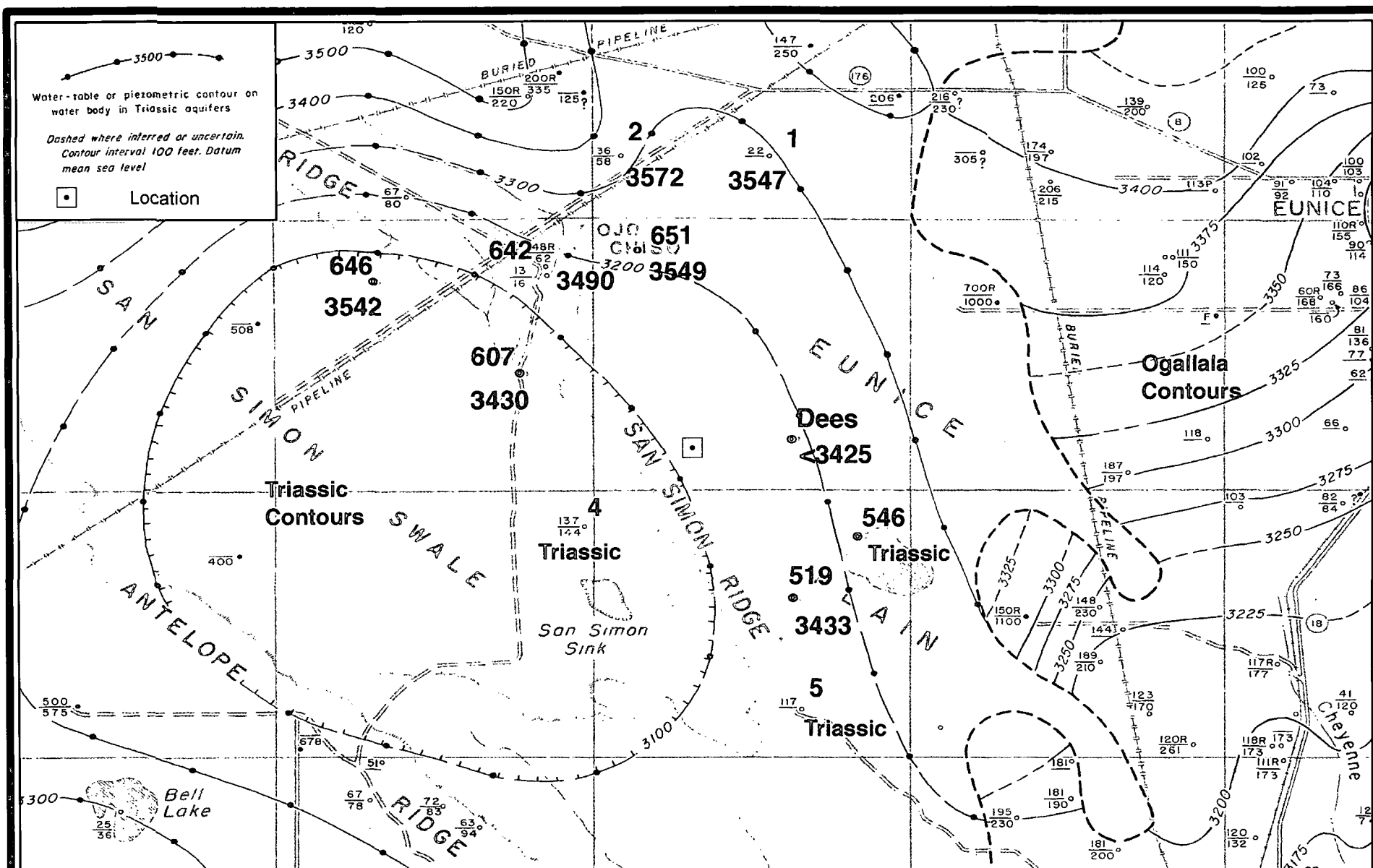
Distance to 100-Year Floodplain

Figure 9 demonstrates that the location is within an area that has not yet been mapped by the Federal Emergency Management Agency with respect to the Flood Insurance Rate 100-Year Floodplain.

Site Specific Information Figures

R.T. Hicks Consultants, Ltd.

901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104



0 1.5 3
Miles

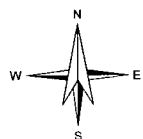
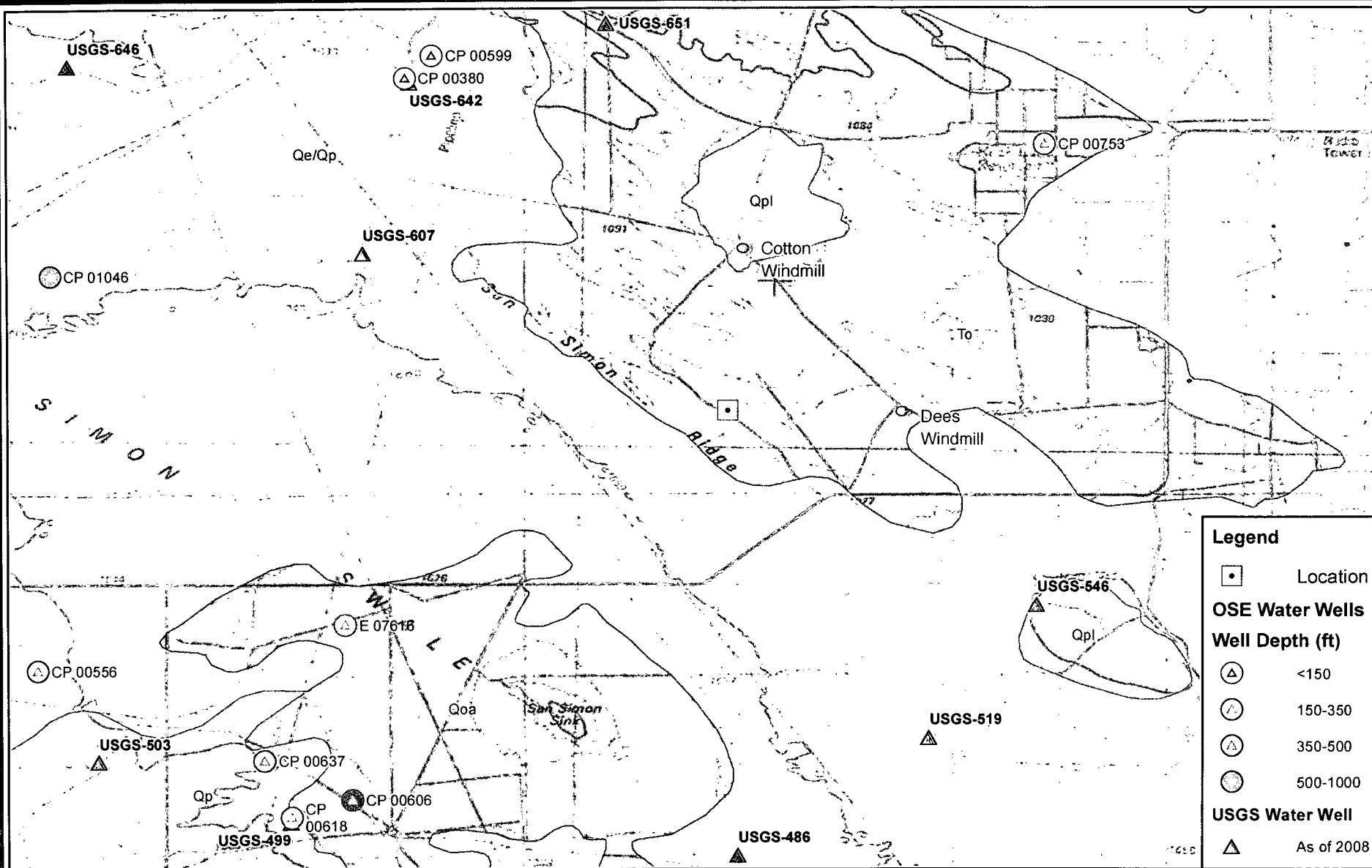
R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Groundwater Elevation Map

Figure 2

Caza Operating: Lennox State 32 2H

August 2012



0 0.75 1.5
Miles

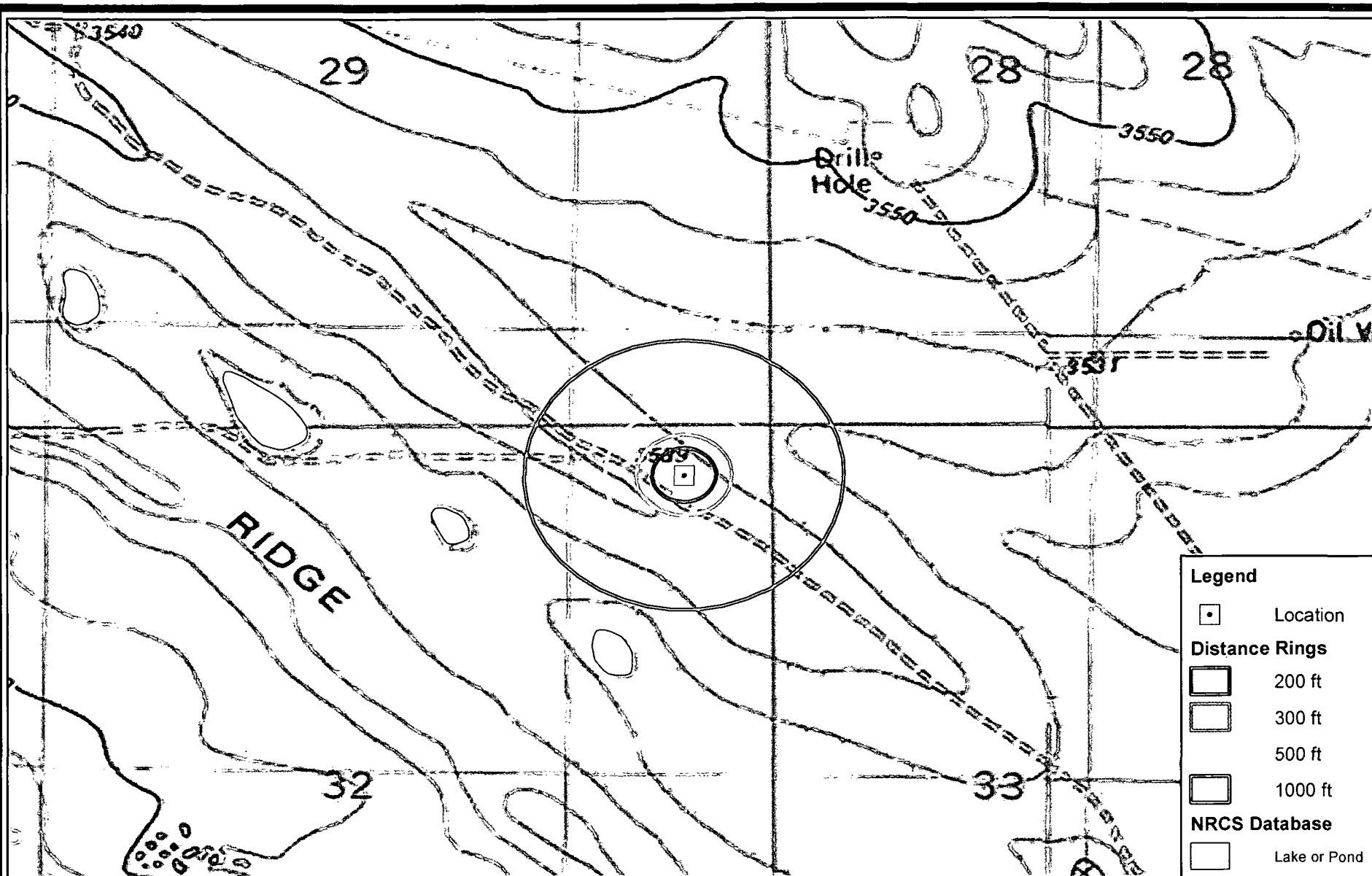
R.T. Hicks Consultants, Ltd
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Albuquerque, NM 87104
Ph: 505.266.5004

OSE, USGS, and Observed Water Wells

Caza Operating: Lennox State 32 2H

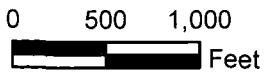
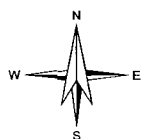
Figure 1

August 2012



Legend

- Location
- Distance Rings
 - 200 ft
 - 300 ft
 - 500 ft
 - 1000 ft
- NRCS Database
 - Lake or Pond



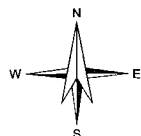
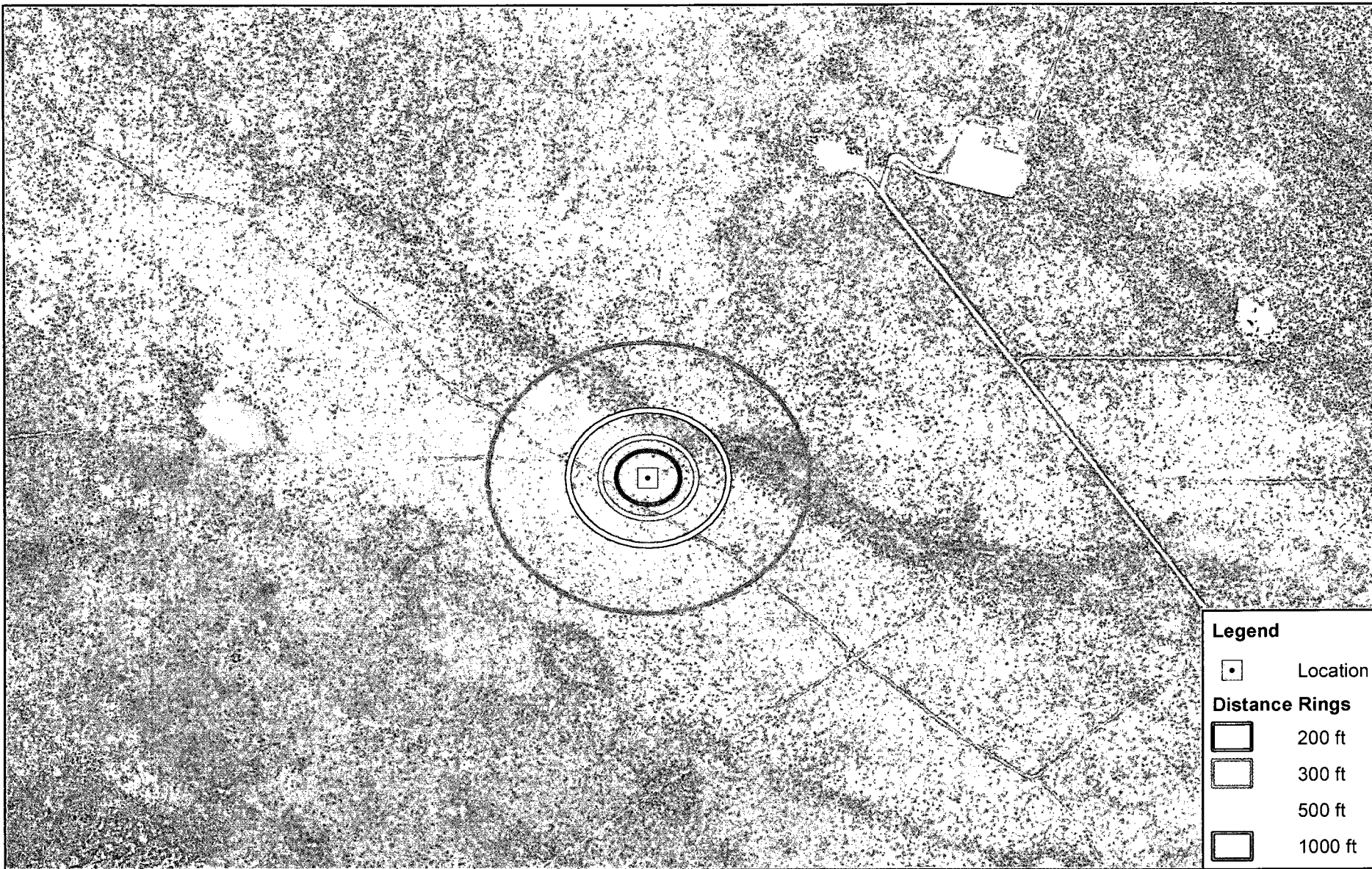
R.T. Hicks Consultants, Ltd
 901 Rio Grande Blvd NW Suite F-142
 Albuquerque, NM 87104
 Ph: 505.266.5004

Surface Water Map

Caza Operating: Lennox State 32 2H

Figure 3

August 2012



0 500 1,000
 Feet

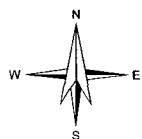
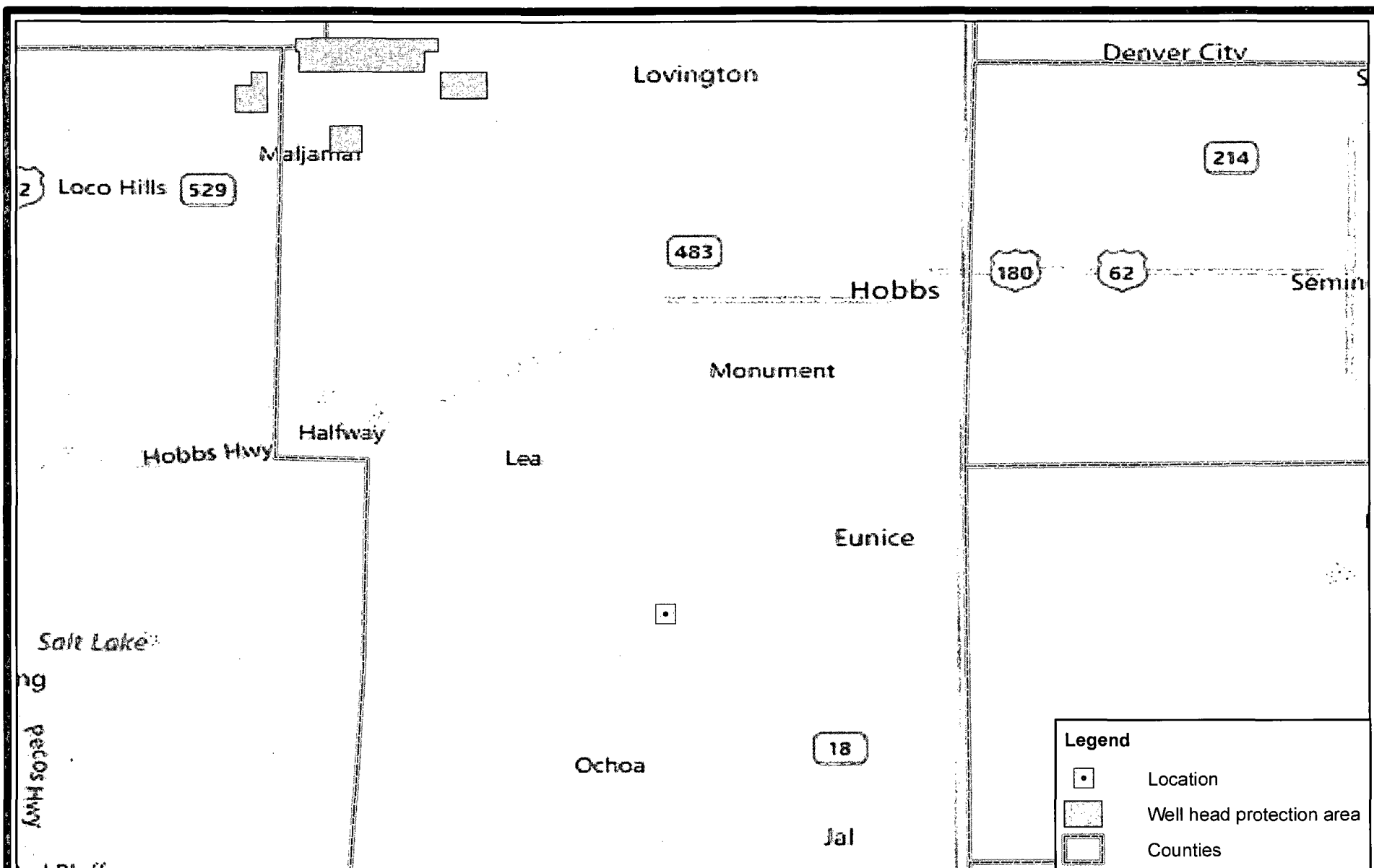
R.T. Hicks Consultants, Ltd
 901 Rio Grande Blvd NW Suite F-142
 Albuquerque, NM 87104
 Ph: 505.266.5004

Residential Structures and Facilities

Figure 4

Caza Operating: Lennox State 32 2H

August 2012



0 5 10
Miles

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901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Municipal Boundaries and Well Fields

Caza Operating: Lennox State 32 2H

Figure 5

August 2012

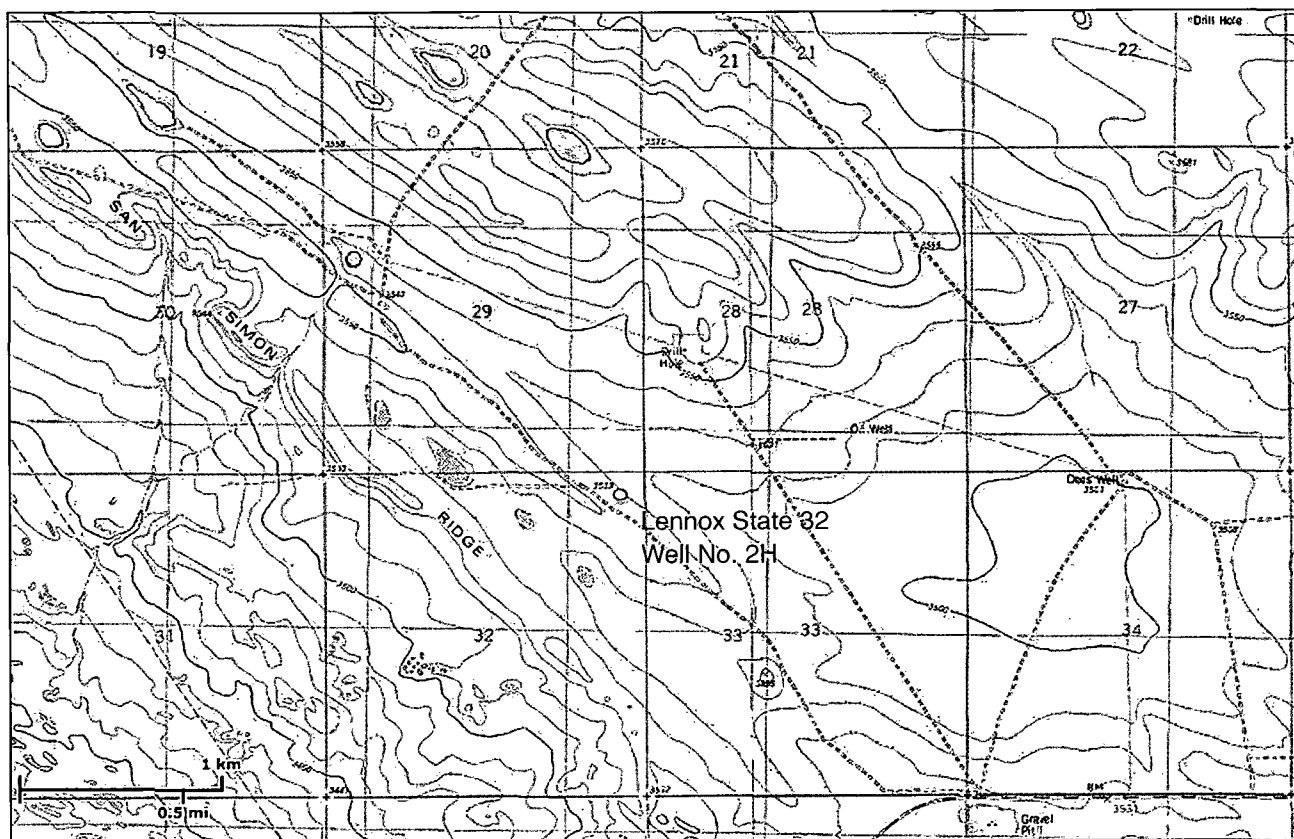


U.S. Fish and Wildlife Service

National Wetlands Inventory

Figure 6

Aug 16, 2012



Wetlands

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

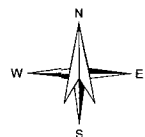
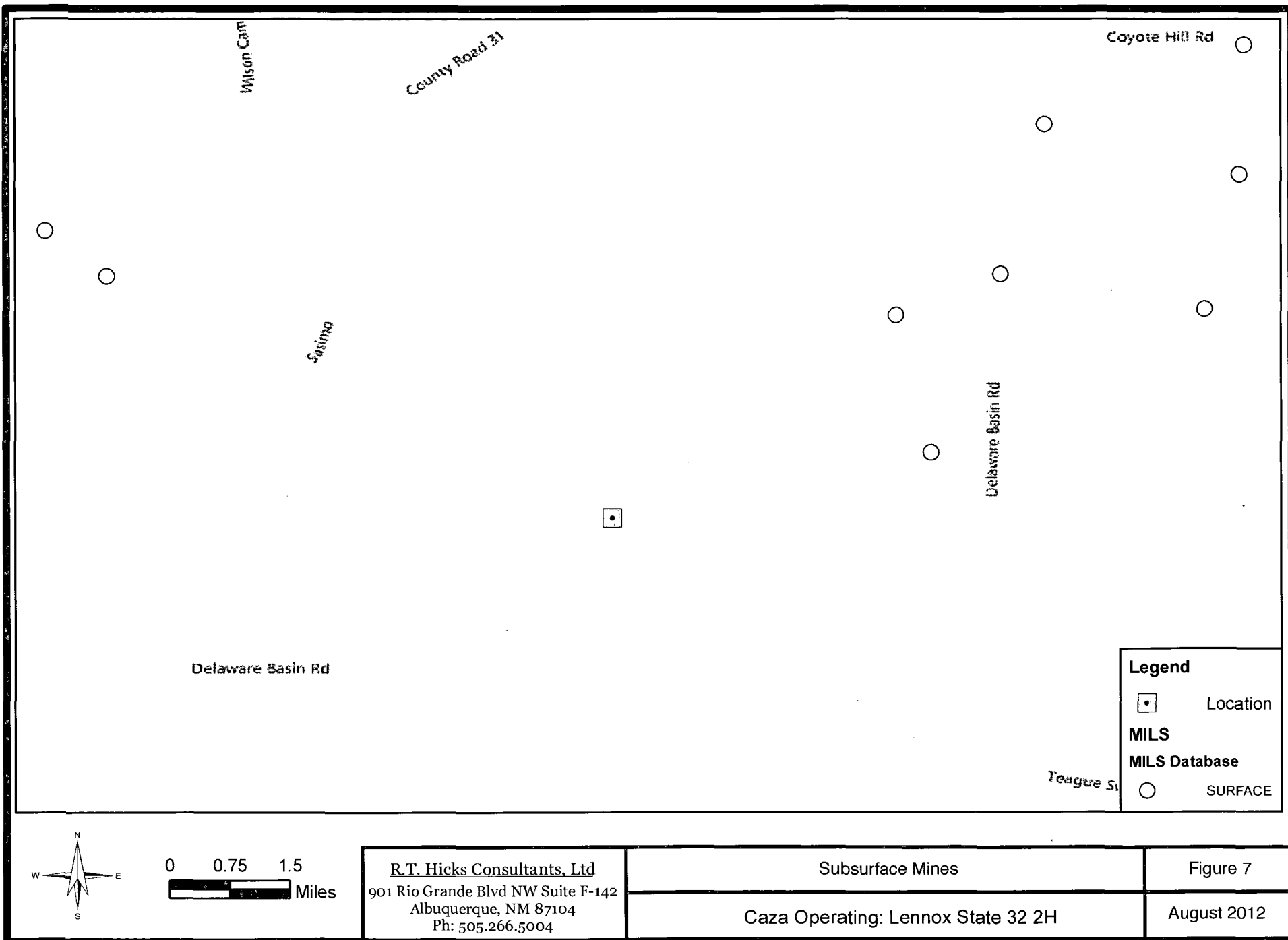
Riparian

- ☐ Herbaceous
- ☐ Forested/Shrub

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:

Caza Operating Lennox State 32 #2H



0 0.75 1.5
Miles

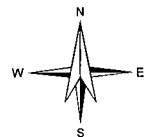
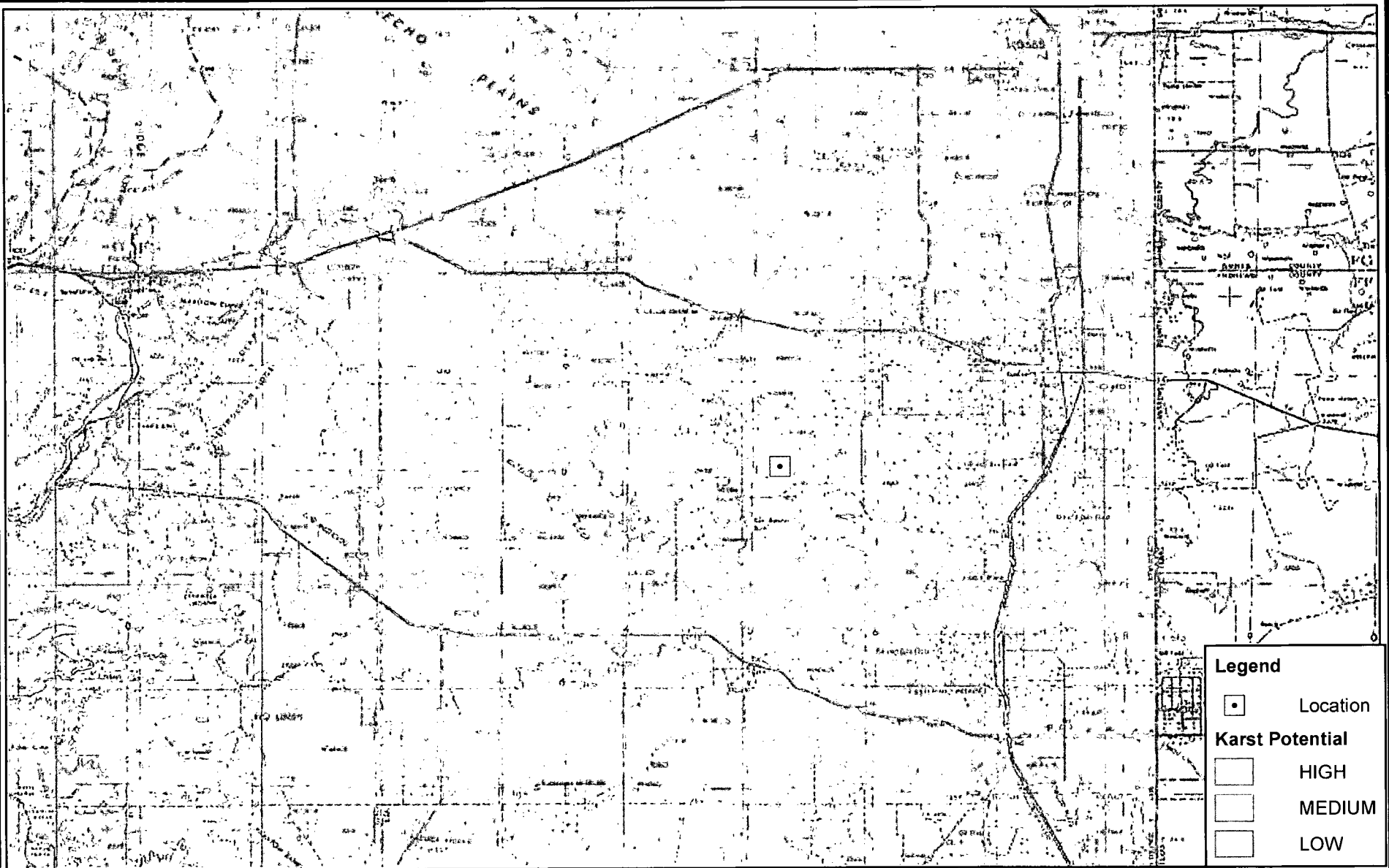
R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Subsurface Mines

Figure 7

Caza Operating: Lennox State 32 2H

August 2012



0 4 8
Miles

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Albuquerque, NM 87104
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Karst Potential Areas

Caza Operating: Lennox State 32 2H

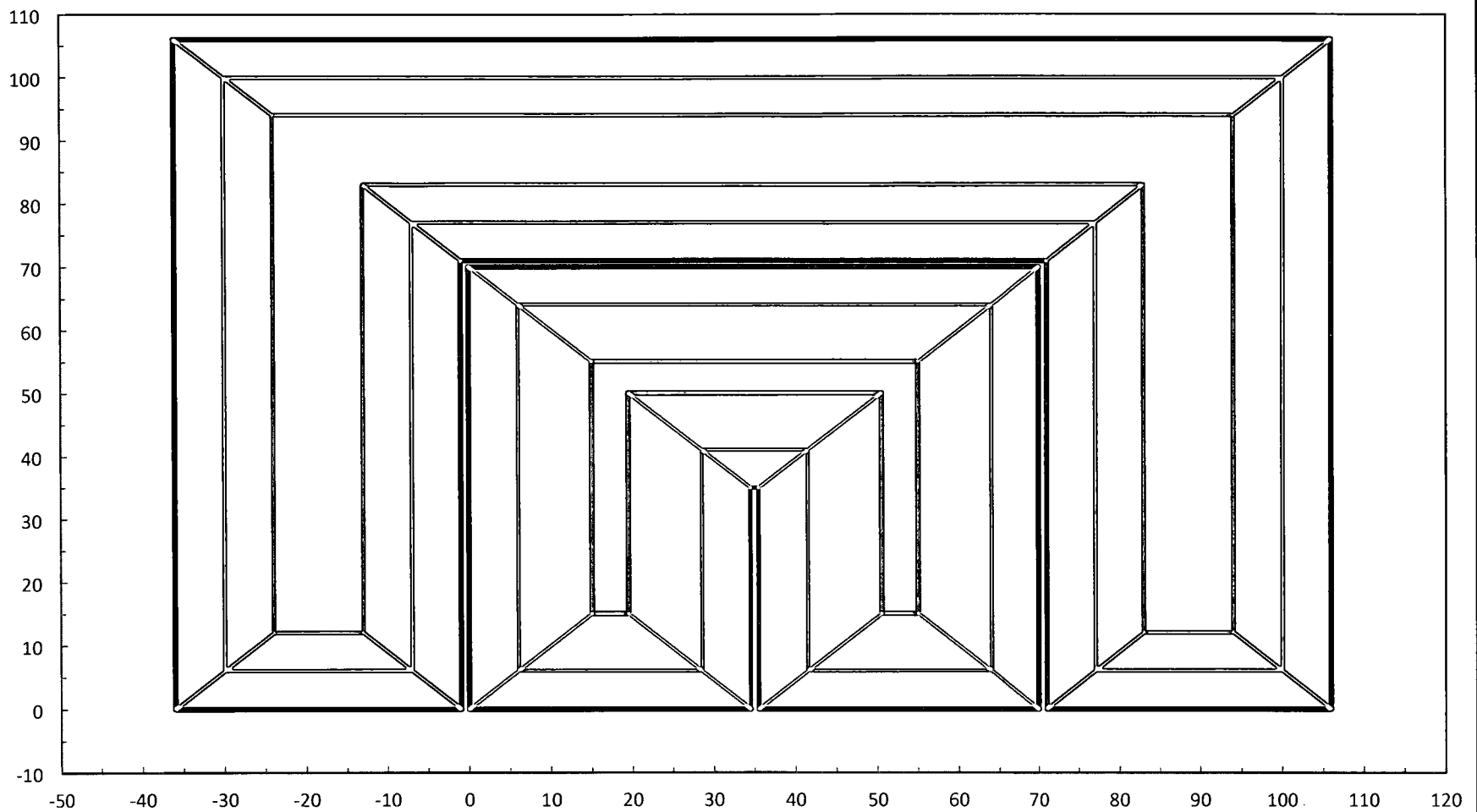
Figure 8

August 2012

Site Specific Information Plates

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Suite F-142
Albuquerque, N. M. 87104

Double Horseshoe Reserve Cells

Plate 1a

Caza Operating - Lennox 32 State 2H

Aug-12



Width refers to East-West dimensions. Length
refers to North-South dimensions.

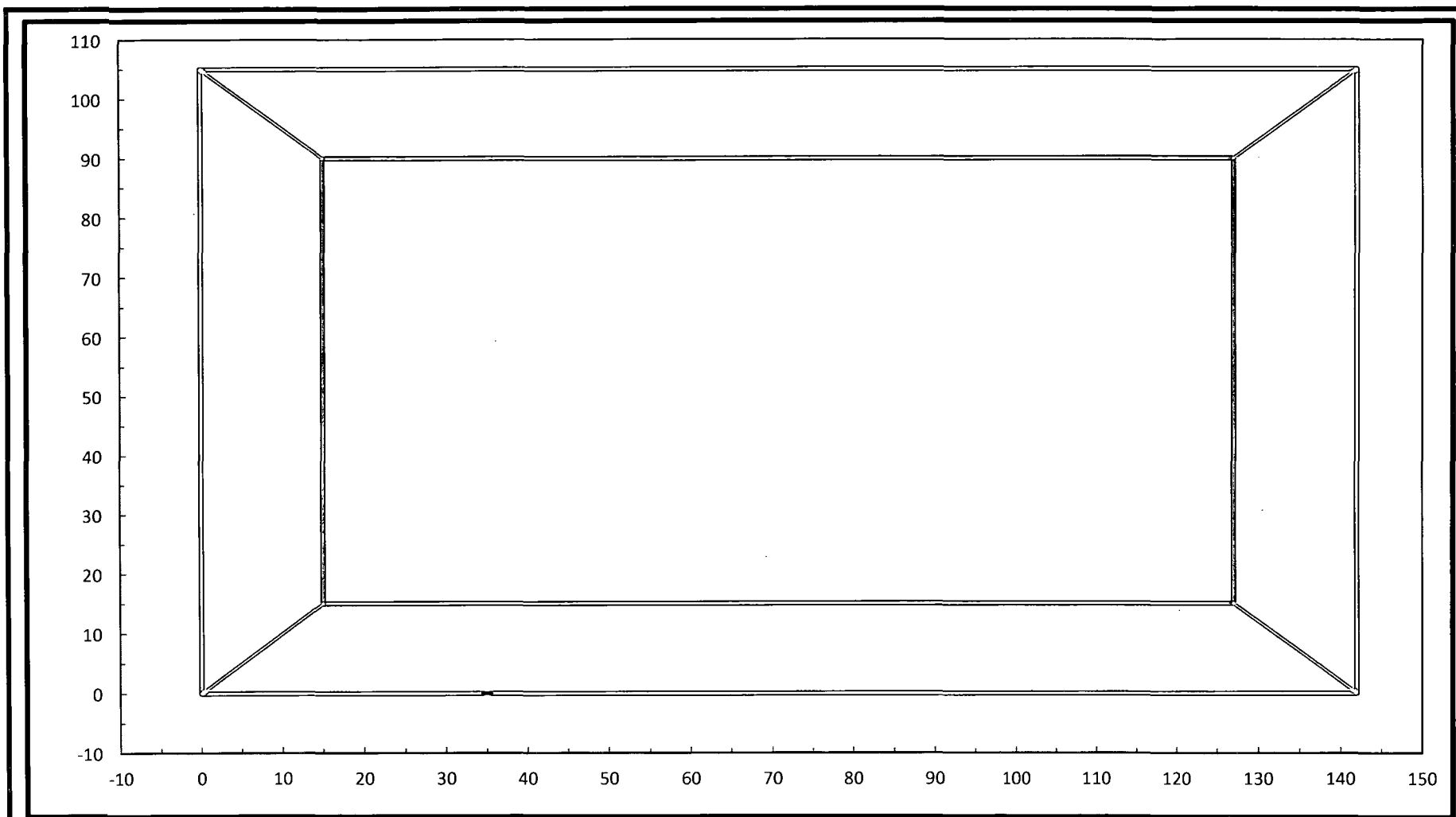
Overall Pit Dimensions	Total Width of both Cells	142.0	[feet]
	Total Length of both Cells	106.0	
	Rise over Run for all slopes	1.5	[-]

Inner Horseshoe Pit Dimensions	Width of Inner Horseshoe Cell	70.0	[feet]
	Length of Inner Horseshoe Cell	70.0	
	Depth of Inner Horseshoe Cell	10.0	
	Inner Horseshoe Cell Floor "width" (North to South)	11.0	[feet]
	Inner Horseshoe Pit Floor "width" (East to West)	11.0	
	Width of Inner Horseshoe Divider on the ground surface	1.0	[feet]
	Length of Inner Horseshoe Divider on the ground surface	35.0	
	Distance from SW corner of Inner Horseshoe Cell to Inner Divider Axis	35.0	

Divider Dimensions	Width of Divider between Inner and Outer Horseshoe Cells	1.0	[feet]
---------------------------	--	-----	--------

Outer Horseshoe Pit Dimensions	Length of Outer Horseshoe Cell (East Side)	106.0	[feet]
	Width of Outer Horseshoe Cell (East Side)	35.0	
	Depth of Outer Horseshoe Cell (East Side)	6.5	
	Length of Outer Horseshoe Pit (West Side)	106.0	[feet]
	Width of Outer Horseshoe Cell (West Side)	35.0	
	Depth of Outer Horseshoe Cell (West Side)	7.5	
	Length of Outer Horseshoe Cell (North Side)	35.0	[feet]
	Width of Outer Horseshoe Cell (North Side)	142.0	
	Depth of Outer Horseshoe Cell (North Side)	8.5	
	"Average Width" of Outer Horseshoe Cell Floor (East to West dimension)	11.0	[feet]
	"Average Width" of Outer Horseshoe Cell Floor (North to South dimension)	11.0	

R.T. Hicks Consultants 901 Rio Grande Blvd. NW Suite F-142 Albuquerque, N. M. 87104	Double Horseshoe Reserve Cells	Plate 1b
	Caza Operating - Lennox 32 State 2H	Aug-12



R.T. Hicks Consultants 901 Rio Grande Blvd. NW Suite F-142 Albuquerque, N. M. 87104	Fluids Cell of Temporary Pit	Plate 1c
	Caza Operating - Lennox 32 State 2H	Aug-12

Appendix A

Survey Information & Other Data

R.T. Hicks Consultants, Ltd.

901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

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 Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30025-40451	Pool Code S2766	Pool Name ROCK LAKE-BONE SPRING
Property Code 39019	Property Name LENNOX UNIT STATE 32	
OGRJD No. 249099	Operator Name CAZA OPERATING, LLC	
		Well Number 2H
		Elevation 3536'

Surface Location

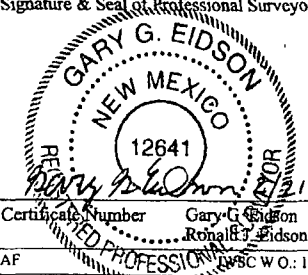
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	32	22-S	35-E		330	NORTH	660	EAST	LEA

Bottom Hole Location If Different From Surface

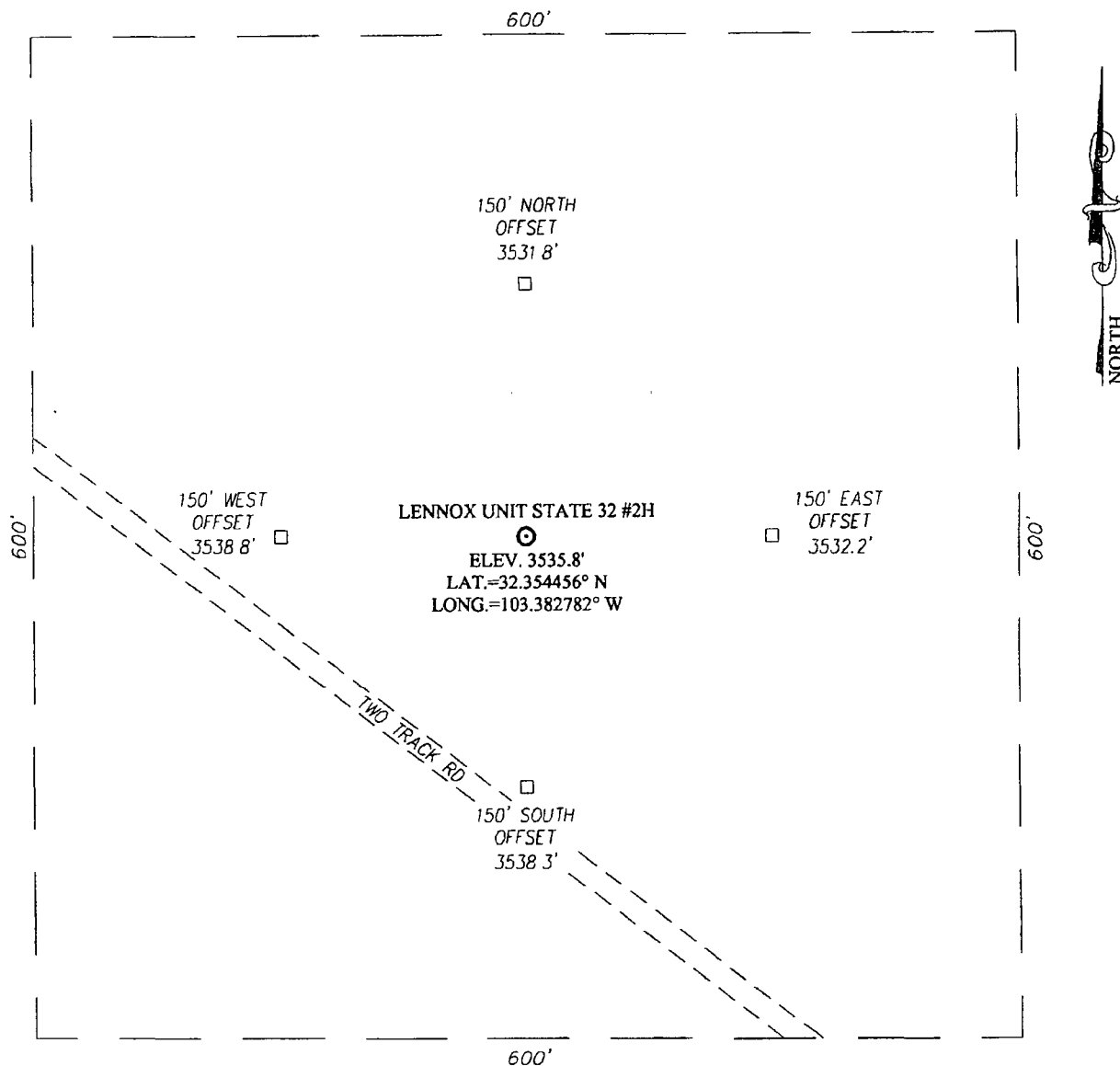
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	32	22-S	35-E		330	SOUTH	660	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

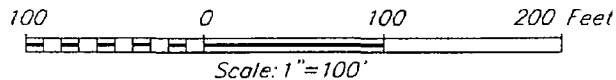
<p style="text-align: center;">435' FNL POE & 660' FEL</p> <p style="text-align: center;">GEODETIC COORDINATES NAD 27 NME</p> <p style="text-align: center;">SURFACE LOCATION Y=493969.9 N X=793532.5 E</p> <p style="text-align: center;">LAT.=32.354456° N LONG.=103.382782° W</p> <p style="text-align: center;">BOTTOM HOLE LOCATION Y=489339.5 N X=793587.1 E</p> <p style="text-align: center;">PRODUCING AREA PROJECT AREA</p> <p style="text-align: center;">CORNER COORDINATES TABLE</p> <table style="margin-left: auto; margin-right: auto;"> <tr><td>Ⓐ -</td><td>Y=494289.4 N, X=792873.8 E</td></tr> <tr><td>Ⓑ -</td><td>Y=494310.3 N, X=794187.9 E</td></tr> <tr><td>Ⓒ -</td><td>Y=489003.5 N, X=792930.5 E</td></tr> <tr><td>Ⓓ -</td><td>Y=489015.6 N, X=794250.3 E</td></tr> </table> <p style="text-align: right; margin-top: 20px;">GRID AZ = 179°19'27" HORIZ DIST = 4631.6'</p>	Ⓐ -	Y=494289.4 N, X=792873.8 E	Ⓑ -	Y=494310.3 N, X=794187.9 E	Ⓒ -	Y=489003.5 N, X=792930.5 E	Ⓓ -	Y=489015.6 N, X=794250.3 E	<p style="text-align: center;">OPERATOR CERTIFICATION</p> <p><i>I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</i></p> <p style="text-align: right;"><i>Joe T. Janica</i> Signature Date</p> <p>Printed Name Joe T. Janica 02/22/12</p> <p>E-mail Address joejanica@valornet.com</p> <p style="text-align: center;">SURVEYOR CERTIFICATION</p> <p><i>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.</i></p> <p style="text-align: center;">FEBRUARY 15, 2012</p> <p>Date of Survey Signature & Seal of Professional Surveyor:</p> <div style="text-align: center;">  </div> <p>Certificate Number Gary G. Eidson 12641 Ronald J. Eidson 3239</p> <p>AF WSC WO: 12.11.0205</p>
Ⓐ -	Y=494289.4 N, X=792873.8 E								
Ⓑ -	Y=494310.3 N, X=794187.9 E								
Ⓒ -	Y=489003.5 N, X=792930.5 E								
Ⓓ -	Y=489015.6 N, X=794250.3 E								

SECTION 32, TOWNSHIP 22 SOUTH, RANGE 35 EAST, N.M.P.M.
LEA COUNTY **NEW MEXICO**



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF CO. RD E11 (TEAGUE SWITCH) AND
 CO. RD E21 (DELAWARE BASIN RD) GO WEST ON CO. RD E21
 APPROX 2.9 MILES. TURN RIGHT AND GO NORTHWEST APPROX
 1.1 MILES. TURN LEFT AND GO SOUTHWEST APPROX 0.4 MILE.
 TURN RIGHT AND GO NORTHWEST APPROX 0.4 MILES. THIS
 LOCATION IS 150 FEET NORTH



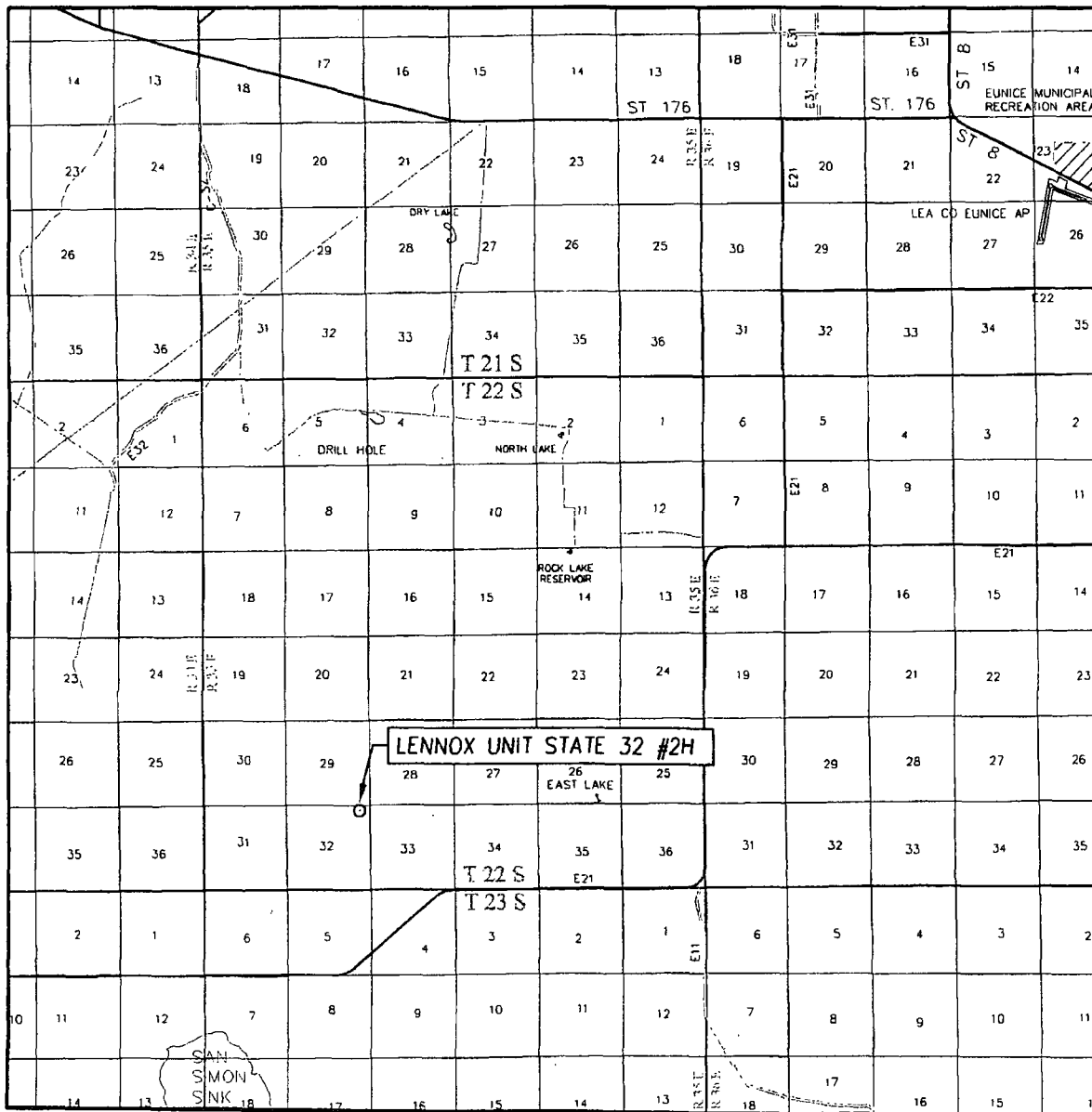
CAZA OPERATING, LLC

LENNOX UNIT STATE 32 #2H WELL
LOCATED 330 FEET FROM THE NORTH LINE
AND 660 FEET FROM THE EAST LINE OF SECTION 32,
TOWNSHIP 22 SOUTH, RANGE 35 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO

PROVIDING SURVEYING SERVICES
 SINCE 1946
JOHN WEST SURVEYING COMPANY
 412 N DAL PASO
 HOBBS, N.M. 88240
 (575) 393-3117 www.jwsc.biz

Survey Date: 02/15/12	CAD Date: 02/20/12	Drawn By: AF
W.O. No.: 12110205	Rev	Rel. W.O.
		Sheet 1 of 1

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 32 TWP. 22-S RGE 35-E

SURVEY N.M.P.M

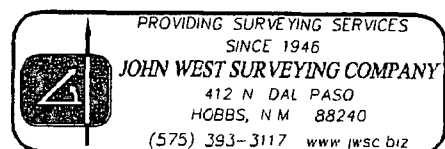
COUNTY LEA STATE NEW MEXICO

DESCRIPTION 330' FNL & 660' FEL

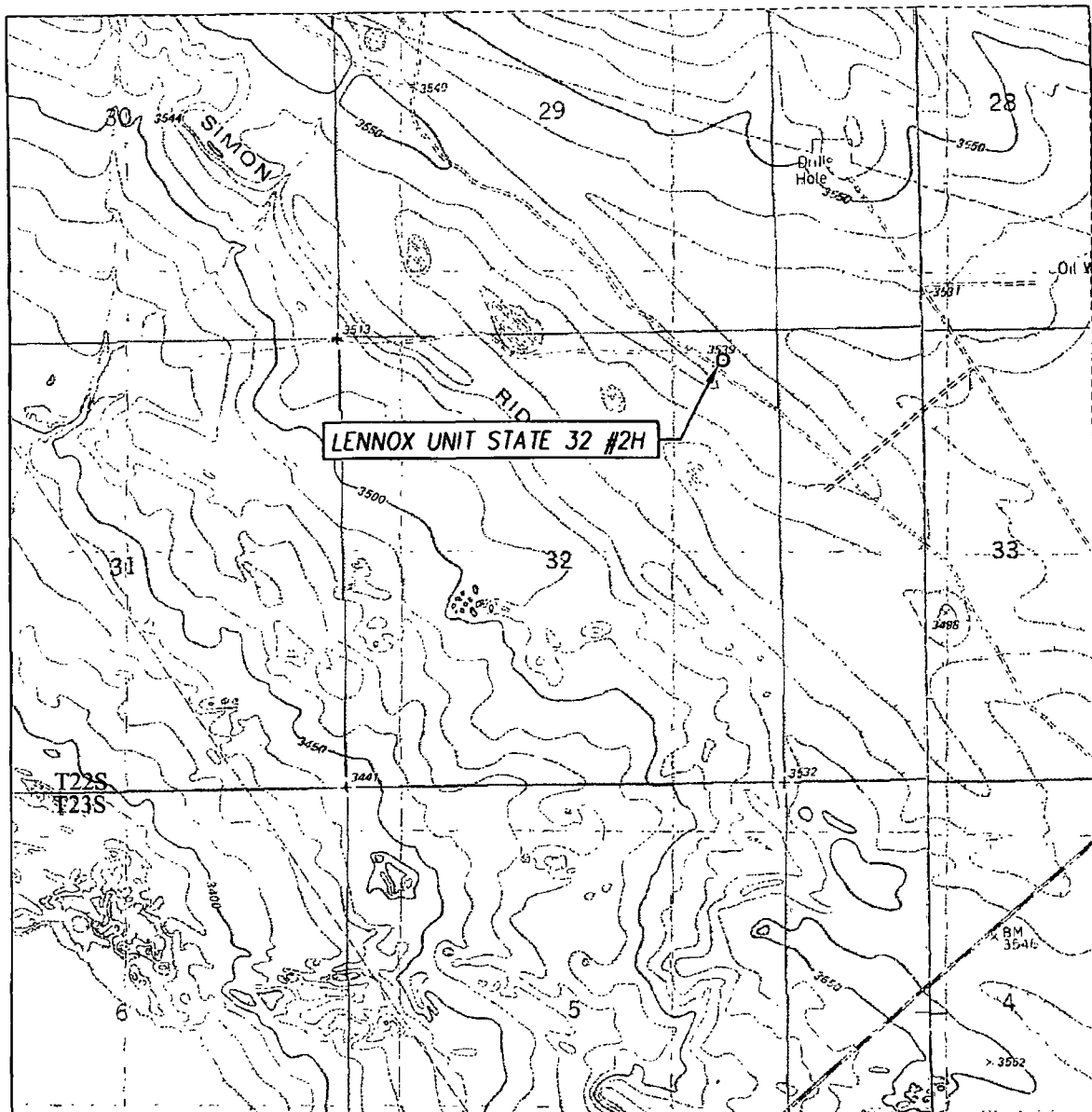
ELEVATION 3536'

OPERATOR CAZA OPERATING, LLC

LEASE LENNOX UNIT STATE 32



LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
SAN SIMON SINK, N.M. - 10'
EAST LAKE, N.M. - 10'

SEC. 32 TWP. 22-S RGE 35-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

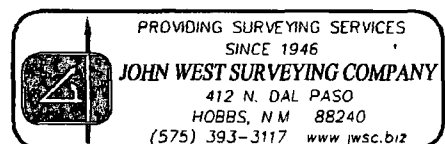
DESCRIPTION 330' FNL & 660' FEL

ELEVATION 3536'

OPERATOR CAZA OPERATING, LLC

LEASE LENNOX UNIT STATE 32

U S G S. TOPOGRAPHIC MAP
SAN SIMON SINK, N.M.



From: "Ricky Baccus" <rbaccus@sbcglobal.net>
Subject: Re: Caza Lennox 32 State #2H
Date: August 15, 2012 10:00:52 PM CDT
To: "Dale Littlejohn" <dale@rthicksconsult.com>

Mr. Littlejohn,

As of 08/14/12 we are 104'. Drilling redbed since 81'. We have not encountered any water. We believe this to be a dry hole.

Thanks,
Ricky Baccus
Baccus Drilling Company
(432) 556-3816

----- Original Message -----

From: Dale Littlejohn
To: rbaccus@sbcglobal.net
Sent: Wednesday, August 15, 2012 2:34 PM
Subject: Caza Lennox 32 State #2H

Mr. Baccus,

I understand you are drilling the starter hole with your cable tool rig at the Caza Operation, Lennox 32 State #2H location. Could you please verify your total depth as of today and indicated if you have encountered groundwater at this well location.

Thanks,

Dale Littlejohn
RT Hicks Consultants LTD
(432) 528-3878

TABLE 6. RECORDS OF WELLS IN SOUTHERN LEA COUNTY, N. MEX. (continued)

Location No.	Owner	Aquifer	Depth of well (feet)	Altitude of well (feet)	Water level		Date measured	Year completed	Surface diameter of wells	Method of lift	Use of water	Remarks
					Depth below land surface (feet)							
21.33.2.442a	do.	To	—	—	—	—	—	—	—	Lw	D,S	Located on east side of earthen tank. Chemical analysis in table 8.
18.112	do.	To	—	3,900	143.0	6-21-54	—	—	—	Lw	S	—
28.124	San Simon Ranch	Tr	224	3,690	179.5	6-30-54	—	—	7½	N	N	"Standard" well.
21.34.8.422	do.	To	120	3,705	105.8	6-30-54	—	—	—	Lw	S	—
13.324	Wilson Oil Co.	Tr	335	3,655	200	1943	1943	—	—	Li	D	—
23.223	do.	To	220	3,660	150	1954	—	—	—	Li	In,D	—
21.34.24.222	Mid-Continent Oil Co.	Tr(?)	125	3,655	—	—	—	—	—	Li	D	—
33.233	San Simon Ranch	To	80M	3,665	67.0	6- 6-55	—	—	7¼	N	N	"Christmas" well.
21.35.1.122	Amerada Oil Co.	Tr	312	3,550	175	6- 7-54	1954	7	—	Li	In	EY 9 gpm.
7.211	Wilson Oil Co.	Tr	430	3,700	340	1940(?)	1940	—	—	Li	D	One of two water wells at Wilson Camp.
14.111	San Simon Ranch	Tr	250	3,580	147.3	6- 7-55	—	—	6	Lw	S	"Scharbauer" well.
24.223	do.	Tr	—	3,620	205.7	4-14-54	—	—	—	Lw	S	—
27.321	—	To	—	3,615	21.8	12- 8-58	—	—	—	N	N	—
27.321a	—	To	—	3,620	—	—	—	—	—	Lw	S	Chemical analysis in table 8.
21.35.30.411	San Simon Ranch	To	58M	3,630	35.6	11-25-53	—	—	7½	Lw	S	—
21.36.9.222	W. L. Van Noy	Tr	447	3,605	<350	—	—	—	8	Li	P	EY 6 gpm. Public supply for Oil Center. Chemical analysis in table 8.
10.112	Humble Oil Co.	Tr	495	—	—	—	—	—	—	N	N	WBZ sand, 385-395 feet.
19.222	Pacific-Western Oil Co.	To(?)	230M	3,630	216.0	1- 7-54	—	—	8	N	N	—
23.233	Frontier Country Club	To	200	3,555	139.0	4-22-55	1955	8¾	—	—	—	Unfinished well. Recently bailed.
28.243	—	To	197M	3,585	174.5	1-15-54	—	—	6¾	N	N	—
21.36.29.144	Humble Oil Co.	To(?)	305	3,630	—	—	1935	—	—	N	N	WBZ sand, 225-305 feet.
33.223	—	To	215 ± M	3,590	205.5	11-12-53	—	—	6½	N	N	—
36.242	W. M. Snyder	To	—	3,505	113.3	1-15-54	—	—	6	Lw	S	MWP
21.37.6.244	—	To	—	3,495	70.3	3-23-54	—	—	8	Li	—	—
10.211	Continental Carbon Black Co.	Qal	76	3,440	26	1953	1945	8	—	Te	In,D	—
11.311	—	Qal	77M	3,426	39.1	12- 8-53	—	—	7½	N	N	—
12.341	Terry and McNeil	Qal	100	3,450	76.3	10- 2-53	—	—	7	Ti	In	—
13.111	Western Oil Field Corp.	Qal	185	3,425	60	10- 2-53	1953	—	—	—	—	Drilled for oil.
14.123	—	Qal	—	3,420	25.4	12- 8-53	—	—	6	Lw	S	—
18.442	T. Davis	To	125	3,510	99.7	1-10-54	—	—	7	Ti	D,S	—
21.111	—	To	—	3,460	73.1	1-10-54	—	—	7¾	N	N	—
21.37.22.211	—	To	49M	3,420	37.7	4-21-55	—	—	—	N	N	—
22.413	—	To	—	3,410	75.0	10- 1-53	—	—	7	N	N	—
23.211	Skelly Oil Co.	To(?)	81	3,420	42.5	10- 1-53	1948	—	—	N	N	Skelly Eunice Plant 2, well 1. Initial yield, 55 gpm.
23.213	do.	To(?)	83	3,410	45.8	10- 1-53	1948	—	—	N	N	Skelly Eunice Plant 2, well 2.
23.231	do.	To(?)	84	3,410	43.0	10- 1-53	1948	—	—	N	N	Skelly Eunice Plant, 2, well 3. Initial yield, 100 gpm.
23.233	do.	To(?)	81	3,405	44.1	10- 1-53	1948	—	—	N	N	Skelly Eunice Plant 2, well 4. Initial yield, 60 gpm.
23.300	Gulf Oil Corp.	To	100	3,390	59	5-31-50	1948	10¾	—	Te	In,D	Gulf Eunice Gasoline Plant, well 22.
21.37.23.331	—	To	—	3,385	72.9	10- 1-53	—	—	8½	N	N	—
23.331a	Gulf Oil Corp.	To	96	3,390	64	5-31-50	—	—	7	Te	In,D	Gulf Eunice Plant, well 23.
26.323	do.	To	101	3,365	64	12- 3-48	—	—	—	Te	In,D	Gulf Eunice Plant, Cone well 1.
26.400	do.	Qal	160	3,365	53	7-23-51	—	—	5¾	N	N	Gulf Eunice Plant, well 5.
27.232	do.	To	99	3,400	62	1948	1948	7	—	Te	In,D	Gulf Eunice Plant, well 14. Initial yield, 55 gpm.
27.241	do.	To	180	3,385	60	1948	—	—	7	N	N	Gulf Eunice Plant, well 4.
30.414	—	To	—	3,480	101.6	1-11-54	—	—	—	Lw	In	—
32.121	Skelly Oil Co.	To	92M	3,460	90.7	1-15-54	—	—	6½	N	N	—
33.110	City of Eunice	To	130	3,450	—	—	—	—	6	N	N	Old public-supply well. WBZ 90-130 feet. Chemical analysis in table 8.
21.37.33.111	Magnolia Oil Co.	To	110(?)	3,450	103.8	12-10-53	—	—	6	Ti	In,D	Water used for oil well flooding. Chemical analysis in table 8.

TABLE 6. RECORDS OF WELLS IN SOUTHERN LEA COUNTY, N. MEX. (continued)

Location No.	Owner	Aquifer	Depth of well (feet)	Altitude of well (feet)	Water level		Date measured	Year completed	Surface diameter of wells	Method of lift	Use of water	Remarks
					Depth below land surface (feet)							
21.37.33.210	City of Eunice	Tr	350	3,430	—		1944	—	6	N	N	Old public-supply well. WBZ 320-350 feet. Chemical analysis in table 8. EY 10 gpm.
33.211	—	To	103M	3,430	99.6		11-12-53	—	10¾	N	N	—
33.233	City of Eunice	To	135	3,435	100		1944	—	8	Te	P	City well 1. Perforated 100-130 feet. Chemical analysis in table 8.
35.423	Gulf Oil Corp.	Qal	110	3,375	61		5-17-50	—	10¾	Te	In,D	Gulf Eunice Plant, well 21.
35.442	do.	Qal	87	3,360	59		11-14-51	—	7	Te	In,D	Gulf Eunice Plant, well 17. WBZ sand and gravel, 65-74 feet.
21.37.36.144	P. Wallach	Qal	66 ± M	3,370	47.8		10- 9-53	—	6	Lw	S	—
36.344	do.	Qal	—	3,360	49.8		10- 9-53	—	8¾	Lw	S	—
21.38.6.133	Ray McNeil	Qal	90+	3,550	79.4		12- 7-53	—	7	N	N	—
6.133a	do.	To	90?	—	—		—	—	—	Lw	—	Chemical analysis in table 8.
6.133b	do.	To	108	—	—		—	—	—	N	N	do.
8.144	Humble Oil Co.	—	133	3,565	Dry		—	—	—	—	—	Plugged and abandoned.
22.33.13.200	San Simon Ranch	Tr	508	3,510	—		—	—	—	Lw	S	WBZ 420-470 feet.
22.34.12.111	do.	Qal	62	3,530	48		—	1951	—	Lw	D,S	—
12.114	do.	Qal	16M	3,515	12.6		3-17-54	—	—	Lw	S	Is an infiltration tunnel about 70 feet long and 5 feet in diameter feeding 2 windmills, 1 centrifugal pump and 1 siphon.
22.36.1.333	Gulf Oil Co.	To	150	3,490	111.2		11-12-53	—	—	Li	L	Chemical analysis in table 8.
2.444	—	—	—	—	—		—	—	—	Lw	S	Chemical analysis in table 8.
8.443	United Carbon Co.	Tr	1,000 ±	3,580	700		—	—	8	Le	In,D	Three wells. EY 50 gpm each. Chemical analysis in table 8.
11.224	Texas-Pacific Coal and Oil Co.	To	120+	3,500	113.8		11-12-53	—	8	Lw	D	Chemical analysis in table 8.
13.222	Ohio Oil Co.	Tr(?)	—	3,455	Flowing		—	—	7	N	N	Capped and flowing.
25.434	R. L. Robinson	To	—	3,430	118.5		11-23-53	—	—	Li	S	—
22.36.35.314	do.	To	197	3,490	187.4		11-23-53	—	—	Lw	S	—
1.132	G. Sims	Qal	—	3,350	47.6		10-14-53	—	—	N	N	Open, uncased hole.
1.440	do.	Qal	—	—	—		—	—	—	Lw	S	Chemical analysis in table 8.
2.442	Humble Oil Co.	Qal	86M	3,360	53.3		10- 9-53	—	7	N	N	Initial yield, 68 gpm.
3.133	Sinclair Oil and Gas Co.	To	120	3,425	90		—	1946	—	Je	D	—
3.134	do.	—	52M	3,420	Dry		9-28-53	—	—	N	N	—
3.440	Cities Service Oil Co.	To	—	3,390	75.8		9-29-53	—	7½	N	N	—
4.211	City of Eunice	To	155	3,445	110		1953	1953	10	Te	P	Well 12. Initial yield, 100 gpm; yield in 1953, 60 gpm.
4.213	do.	To	155	3,440	114.8		3- 6-54	1952	10	Te	P	Well 11. EY 60 gpm.
4.214a	Eunice Cemetery Assoc.	To	115 ± M	3,435	108.2		9-29-53	—	6½	N	N	—
22.37.4.233	City of Eunice	To	155	3,435	110		1951	1951	8	Te	P	Well 9.
4.421	Sinclair Oil and Gas Co.	To	114 ± M	3,430	90.1		9-28-53	—	7¾	N	N	—
4.424	Skelly Oil Co.	To	164	—	<139		—	1950	8¾	Ti	In,D	Skelly Eunice Plant 1, well 13. Initial yield, 150 gpm; dropped to 20 gpm.
8.441	Shell Oil Co.	To	168	3,400	60		1953	1936	6¾	Lw	D	—
9.313a	Humble Oil Co.	To	166M	3,400	72.7		9-29-53	1944	9½	N	N	Humble-J. L. Greenwood well 2.
9.331	do.	To	160	—	—		—	1945	7¾	Te	D	Humble-J. L. Greenwood well 3.
9.333	do.	To	172	—	—		—	1946	4	Te	In	Humble-J. L. Greenwood well 5. Water used for oil well flooding.
22.37.9.441	Humble Oil Co.	To	104 ± M	3,410	85.5		9-29-53	1940	6¾	N	N	Humble-J. L. Greenwood well 1.
10.213	Gulf Oil Corp.	To	220	3,400	100		1950	—	—	Lw	D	Gulf-Brinson lease well.
10.320	Skelly Oil Co.	To	—	3,395	81.0		9-29-53	—	11½	N	N	—
11.324	—	Qal	100M	3,350	45.3		10-16-53	1952	5	N	N	—
11.444	Leo Sims	Qal	—	3,345	58.7		10-16-53	—	8¾	Lw	S	—
12.114	G. Sims	Qal	84M	3,340	53.9		10-14-53	—	7	N	N	—
12.443	do.	Qal	59M	3,335	53.9		10-14-53	—	15	N	N	—
12.443a	do.	Qal	59M	3,335	53.3		10-14-53	—	—	N	N	Uncased and open.
15.333	H. O. Sims	To	—	3,380	81.0		9- -53	—	4¾	Lw	D,S	—
16.432	Skelly Oil Co.	To	135	—	—		—	—	7	Ti	In,D	Skelly Eunice Plant 1, well 11. EY 40 gpm.
16.443	do.	To	136	3,385	80.9		9-28-53	1947	8¾	Ti	In,D	Skelly Eunice Plant 1, well 10.
22.37.21.221	—	To(?)	—	3,380	76.5		9- -53	—	6¾	N	N	—

TABLE 6. RECORDS OF WELLS IN SOUTHERN LEA COUNTY, N. MEX. (continued)

Location No.	Owner	Aquifer	Depth of well (feet)	Altitude of well (feet)	Water level		Year completed	Surface diameter of wells	Method of lift	Use of water	Remarks
					Depth below land surface (feet)	Date measured					
22.37.21.421	—	To(?)	—	3,360	62.0	9- -53	—	4½	N	N	—
22.331	Skelly Oil Co.	To(?)	115 ±	3,350	69.0	9-29-53	1949	—	Ti	In,D	Skelly Eunice Plant 1, well 12. EY 40 gpm.
23.233	Leo Sims	Qal	77M	3,345	55.0	10-14-53	—	14	N	N	Open and uncased.
23.441	O. J. Boyd	Qal	70 ±	3,335	55.3	10-12-53	—	—	Lw	S	Dug.
23.441a	do.	Qal	70 ±	3,335	55.2	10-12-53	—	7½	N	N	—
24.133a	G. Sims	Qal	127M	3,322	59.3	4-21-55	—	10	Li	N	—
24.133b	do.	Qal	80	—	—	—	—	—	Lw	N	Chemical analysis in table 8.
25.313	Marshal Drinkard	Qal	69M	3,300	50.1	10-14-53	1945	13½	N	N	—
27.334b	Skelly Oil Co.	Qal	127M	3,335	54.4	9- -53	—	8½	N	N	Skelly Eunice Plant 1, well 9.
27.410	do.	To?	182	—	—	—	—	7	Te	In,D	EY 25 gpm. Perforations 150-170 feet.
22.37.28.323	Clower Drilling Co.	Qal	—	3,353	66.1	9- -53	—	9¼	N	N	—
34.221	Humble Oil Co.	Qal and Tr	229	3,520	—	—	1938	—	—	In	WBZ 58-61 feet, 138-146 feet, 133-192 feet. EY 22 gpm.
36.141a	Tom Linebury	Qal	40	3,300	32.2	10-12-54	—	—	Lw	S	—
36.141b	do.	Qal	46	3,300	31.1	6- 3-55	—	6	N	N	—
22.38.18.234	The Texas Co.	Tr	386M	3,360	180	10- -53	1953	—	Li	In	WBZ gray sand, 325-350 feet. EY 20 gpm.
19.222	do.	Tr	—	3,365	146.0	10-14-53	—	7	N	N	—
23.32.4.222	C. H. and W. O. James	Tr	550	3,630	—	—	1931	8	Lw	S	EY 10 gpm.
21.222	Frank and Charles James	Tr	550	3,700	500	—	—	8	Li	S	—
23.33.12.322	San Simon Ranch	Tr	400	3,685	—	—	1953	—	Lw	S	WBZ 370-400 feet.
23.33.28.334	Brinninstool	Tr	575	3,675	500	—	—	—	Lw	D,S	EY 2.5 gpm.
23.34.1.444	San Simon Ranch	Qal	144 ± M	3,360	137.3	11-25-53	—	6	N	N	—
31.340	Continental Oil Co.	Tr	678	3,620	—	—	1953	8	Li	In	EY 47 gpm. Chemical analysis in table 8.

23.35.27.444	—	To	—	3,480	117.2	3- -53	—	7	N	N	—
23.36.15.414	J. E. Markins	To(?)	230	3,390	148.4	12- 4-53	—	6	Lw	D,S	—
16.343	do.	Tr	1,100	3,465	150	1952	—	—	Lw	S	—
22.434	Texas Pacific Coal and Oil Co.	To	210 ± M	3,395	188.6	12- 1-53	—	8½	N	N	—
23.111	do.	To	—	3,370	143.6	12- 4-53	—	8	Li	In	—
31.233	J. Combass	To	—	—	—	—	—	—	Lw	S	Chemical analysis in table 8.
23.36.35.211	J. Combass	To	170	3,330	123.0	3- -53	—	6½	N	N	—
36.341	EPNG	To	250	3,330	124	—	—	10¾	Ti	In,D	Jal Plant 4, well 8.
36.342	EPNG	To	261	3,330	120	—	1952	—	Ti	In,D	Jal Plant 4, well 7.
23.37.2.133	—	To	—	3,304	62.8	10-16-53	—	—	N	N	—
2.422	—	Qal	—	3,295	64.1	6- 3-55	—	6	Lw	S	—
3.421	H. O. Sims	To	80	3,295	64.1	10-16-53	—	—	Lw	D,S	—
4.114	—	To	84—M	3,341	81.8	12- 3-53	—	5½	N	N	—
4.211	Skelly Oil Co.	Tr(?)	226	3,340	—	—	1947	10¾	Le	D	H. O. Sims Camp well 1. EY 10 gpm.
6.144	—	To	—	3,375	102.9	12- 3-53	—	6½	Lw	S	—
20.333	Bert Steeler	Qal(?)	177	3,300	117	—	1939	—	Lw	D,S	—
25.132	M. L. Goins	To(?)	—	3,215	28.3	10-15-53	—	7	Lw	S	—
27.441	—	Qal	—	3,270	78.3	3- 4-53	—	5½	Lw	S	—
23.37.31.442	EPNG	To(?)	173	3,300	118	1952	1952	12½	Te	In,D	Jal Plant 4, well 4.
32.122	—	To(?)	—	3,300	99.0	7-23-54	—	6	Lw	S	—
32.331	EPNG	To(?)	173	3,310	—	—	—	20	Te	In,D	Jal Plant 4, well 1. WBZ 115-171 feet. EY 40 gpm.
33.122	—	To(?)	120M	3,310	91.2	3- 4-53	—	9	N	N	—
23.38.5.233	Humble Oil Co.	Tr	400M	3,385	189.8	10-15-53	1943	7½	N	N	W. F. Scarbrough well 1. EY 14 gpm.
8.214	Tom Linebury	Tr	—	3,372	198.3	10-15-53	—	6½	Lw	D,S	—
24.32.3.322	Frank James	Tr	550	3,650	—	—	—	10	Lw	D,S	—
10.344	do.	Qal	60	3,588	31.1	6- 3-55	1910	6	Lw	S	Located in sink.
33.422	Richard Ritz	Tr	367M	3,510	313.4	2-18-58	—	12	Lw	S	EY 0.25 gpm.
24.33.10.113	Carl Johnson	Qal	36 ± M	3,595	24.6	11-27-53	—	6½	Lw	S	—
24.33.23.311	—	Tr	232M	3,565	208.6	11-27-53	—	9½	N	N	—
24.444	—	Qal	—	3,530	16.9	11-27-53	—	5½	Lw	S	—
33.231	Carl Johnson	Qal	—	3,460	93.2	3-17-54	—	6	Lw	D,S	—
24.34.4.111	—	To	—	3,570	51.3	6- 3-55	—	—	Lw	S	—
5.444	—	To	78(?)	3,590	66.6	4-21-55	—	—	Lw	N	—
10.112	Madera Ranch	To	83M	3,525	71.8	4-27-53	—	6	N	N	—
10.422	do.	To	94M	3,315	63.2	4-27-53	—	7½	N	N	—

Generic Plans for Temporary Pits

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Temporary Pit Design/Construction Plan

Plates 1a and 1b show the design of the temporary pit proposed for this project. Field conditions and the drilling rig layout will determine the final configuration of the pit cells, which will consist of the following:

1. A cell for drilling fluid circulation and cuttings storage consisting of:
 - a. An outer horseshoe for fresh water and cut-brine fluid and cuttings
 - b. An inner horseshoe for brine and fluid and cuttings
2. A cell for the storage of fresh water (drilling/stimulation) and stimulation flow-back water prior to re-use or disposal (Plate 1c)

In addition to the commitments listed below, the operator will install a system that can drain water entrained in the drilling waste of the drilling pit. As described in the closure plan, this system of fabric-wrapped perforated pipe and drainage mats lie on the bottom of the drilling cell of the pit – the brine cell and the outer cell. The system will drain to the lowest corner of each cell, generally near the suction area. The exact location will be determined upon completion of the cells. Standpipes rise from the depression and can house a solar-powered pump. The drainage system for the brine cell removes water to an above-ground tank, the fluids cell of the pit, or directly to a truck for re-use or disposal. The drainage system may also be used to introduce fresher water below the residual cuttings/mud, causing the introduced fluid to move upwards through the cuttings/mud and enhance the solids rinsing process. Introduced water can be removed from the pit for re-use via a vacuum truck or recovered from the drainage system at the bottom.

The temporary storage of fluids, fluid reuse or fluid disposal will be conducted in a manner approved by division rules that prevents the contamination of fresh water and protects public health and the environment. This drainage and rinsing system allows the operator to:

- Recover clear water for possible re-use
- Reduce the concentration of constituents of concern in the drilling waste by removing some water entrained in the drilling waste.

Precipitation and the possible addition of relatively fresh water (see closure plan) will rinse the solid drilling waste, causing additional reduction in the constituents of concern as the water is recovered for re-use or disposal.

For any temporary storage of fluids derived from the drilling pit and placed in an above-ground tank, the following will apply:

1. Construction, operation and maintenance of the temporary storage tank(s) will adhere to all applicable NMOCD Rules including but not limited to:
 - a. Safety stipulations
 - b. Protection from hydrogen sulfide mandates
 - c. Signage and identification requirements
 - d. Secondary containment requirements for temporary tanks
 - e. Applicable netting requirements

C-144 Supplemental Documentation for Temporary Pit

2. Any cleaning of the temporary tank(s) will adhere to NMOCD Rules relating to tank cleaning.
3. Transportation of water or drilling fluids derived from the drilling pit will adhere to all applicable NMOCD Rules relating to transportation.
4. Storage of water or drilling fluids in temporary above-ground tanks will also adhere to all applicable Federal mandates.

During final closure of the pit, the tanks and secondary containment system will be removed from the location and the area beneath the tank inspected for any leakage. If any leakage is suspected, the operator will sample the soil beneath the tanks and report any release pursuant to NMOCD Rules.

Finally, we intend to place any temporary tank used in conjunction with the pit drainage system on a 20-mil liner with a berm around it that would allow any inadvertently released fluids to drain or be pumped back into the pit.

Construction/Design Plan of Temporary Pit

Stockpile Topsoil

Prior to constructing the pit the qualified contractor will strip and stockpile the topsoil for use as the final cover or fill at the time of closure.

Signage

The operator will post an upright sign in a conspicuous place in compliance with 19.15.16.8 NMAC as the pit and the well are operated by the same operator. Section 19.15.16.8 states in part:

19.15.16.8 SIGN ON WELLS:

B. For drilling wells, the operator shall post the sign on the derrick or not more than 20 feet from the well.

C. The sign shall be of durable construction and the lettering shall be legible and large enough to be read under normal conditions at a distance of 50 feet.

F. Each sign shall show the:

- (1) well number;
- (2) property name;
- (3) operator's name;
- (4) location by footage, quarter-quarter section, township and range (or unit letter can be substituted for the quarter-quarter section);
- and
- (5) API number.

The sign will also provide emergency telephone numbers.

Fencing:

During drilling or workover operations, the operator will not fence the edge of the pit adjacent to the drilling or workover rig.

As the pit is not located within 1000 feet of a permanent residence, school, hospital, institution or church, the operator will fence the pit to exclude livestock with four-wire strands evenly spaced in the interval between one foot and four feet above ground level.

Earthwork

The temporary pit will have a properly constructed foundation and interior slopes consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear.

The slopes of the pit will be no steeper than two horizontal feet to one vertical foot (2H:1V) unless in the transmittal letter the operator requested an alternative to the slope requirement with a demonstration that the pit can be operated in a safe manner to prevent contamination of fresh water and protect public health and the environment.

A berm or ditch will surround the temporary pit to prevent run-on of surface water.

If the transmittal letter identifies concerns relating to the presence of karst and associated instability, during construction of the pit the contractor will compact the earth material that forms the foundation for the pit liner. An expected proctor density of greater than 90% will be achieved by

1. adding water to the earth material as appropriate,
2. compacting the earth by walking a crawler-type tractor down the sides and bottom of the pit
3. repeating this process with a second 6-inch lift of earth material if necessary

Liner Installation

The geomembrane liner will consist of 20-mil string reinforced LLDPE or equivalent liner material identified in the transmittal letter or on Form C-144 (that the appropriate division district office approves through approval of this permit application). The geomembrane liner will be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material will be resistant to ultraviolet light. Liner compatibility will comply with EPA SW-846 method 9090A.

The operator will direct the liner installation contractor to:

1. minimize liner seams and orient them up and down, not across a slope
2. use factory welded seams where possible
3. overlap liners four to six inches and orient seams parallel to the line of maximum slope, i.e., oriented along, not across, the slope, prior to any field seaming
4. minimize the number of welded field seams in comers and irregularly shaped areas
5. utilize only qualified personnel to weld field seams
6. avoid excessive stress-strain on the liner
7. place geotextile under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity
8. anchor the edges of all liners in the bottom of a compacted earth-filled trench that is at least 18 inches deep
9. place additional material (liner, felt, etc.) to ensure that the liner is protected from any fluid force or mechanical damage at any point of discharge into or suction from the lined temporary pit.

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A berm or ditch will surround the temporary pit to prevent run-on of surface water. During drilling operations, the operator may elect to remove run-on protection on the pit edge adjacent to the drilling or workover rig provided that the pit is being used to collect liquids escaping from the drilling or workover rig and this additional fluid will not cause a breach of the temporary pit.

The temporary pit will not be used to vent or flare gas and the volume of the temporary drilling pit, including freeboard, will not exceed 10 acre-feet.

Temporary Pit Operating and Maintenance Plan

The operator will maintain and operate the pit in accordance with the following plan to contain liquids and solids and maintain the integrity of the liner to prevent contamination of fresh water and protect public health and the environment.

If feasible, the operator will recycle, reuse or reclaim all drilling fluids in the temporary pit in a manner approved by division rules that prevents the contamination of fresh water and protects public health and the environment. Re-use of drilling fluids and workover fluids (stimulation flow-back) for drilling and stimulation of subsequent wells is anticipated. If re-use is not possible, fluids will be sent to disposal at a division-approved facility.

The operator will not discharge into or store any hazardous waste in the pit.

If the pit develops a leak or if any penetration of the pit liner occurs above the liquid's surface, then the operator will repair the damage or initiate replacement of the liner within 48 hours of discovery or will seek a variance from the division district office within this time period.

If the pit develops a leak or if any penetration of the pit liner occurs below the liquid's surface, then the operator will remove all liquid above the damage or leak line within 48 hours of discovery. The operator will also notify the district division office (19.15.29 NMAC) within this same 48 hours of the discovery and repair the damage or replace the pit liner.

The operator will ensure that the drilling contractor installs and uses a header, diverter or other hardware that prevents damage to the liner by erosion, fluid jets or impact from installation and removal of hoses or pipes during injection or withdrawal of liquids.

During construction, the operator or qualified contractor will install diversion ditches and berms around the pit as necessary to prevent the collection of surface water run-on. As outlined in the Construction and Design Plan, during drilling operations, the edge of the temporary pit adjacent to the drilling or workover rig may not have run-on protection if the operator is using the temporary pit to collect liquids escaping from the drilling or workover rig and run-on will not result in a breach of the temporary pit.

The operator will maintain on site an oil absorbent boom to contain and remove oil from the pit's surface.

The operator will only discharge fluids or mineral solids (including cement) generated or used during the drilling, completion, or workover processes into the pit.

The operator will maintain the temporary pit free of miscellaneous solid waste or debris. Immediately after cessation of drilling or a workover operation, the operator will remove any visible or measurable layer of oil from the surface of the pit.

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The operator will maintain at least two feet of freeboard for the temporary pit, except under extenuating circumstances, which will be noted on the pit inspection log as described below.

The operator will inspect the temporary pit containing drilling fluids daily while the drilling rig or workover rig is on site. After the rigs have left the site, the operator will inspect the pit weekly as long as liquids are present in the pit. The operator will maintain a log of the inspections. The operator will make the log available to the division district office upon request.

The operator will remove all free drilling fluids from the surface of the temporary pit within 60 days from the date that the last drilling or workover rig associated with the pit permit is released. The operator will note the date of this release upon Form C-105 or C-103 upon well or workover completion. The operator may request an extension up to two months from the division district office as long as this additional time does not exceed the temporary pit life span (Subsection R of 19.15.17.7 NMAC).

Temporary Pit In-Place Closure Plan

The wastes in the temporary pit are destined for in place burial at the drilling location or, if stated in the permit transmittal letter, a nearby site on the same lease.

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

Siting Criteria Compliance Demonstration

Compliance with siting criteria is described in the site-specific information appended to the C-144.

Proof of Surface Owner Notice

The application package was transmitted to the surface landowner and OCD via email.

Construction/Design Plan of Temporary Pit

The design and construction protocols for the temporary pit are provided in the design and construction plan and in Plates 1-2. The drainage system described in the design and construction plan (above) is not shown on the Plates but can be important element of the closure plan.

General Protocols and Procedures

- All free liquids from the pit will be recycled or disposed in a manner consistent with OCD Rules.
- Residual drilling fluids will be removed from the pit within 60 days of release of the drilling rig.
- Water derived from the well stimulation program (flow-back or unused fresh water) that is significantly higher quality than the residual drilling fluids *may* discharge into the pit. The fresher water *may* discharge into the drainage system to flow through the solids or onto the solids in the pit.
- A low-flow pump *may* remove water from the drainage system to a tank or a fluids cell of the temporary pit; thereby further rinsing the residual solids in the pit.
- 20-60 days after placement of fresh flow-back water into the drilling cell, any water in the pit will be removed for re-use or disposal.
- The residual drilling mud and cuttings will be stabilized to a capacity sufficient to support the 4-foot thick soil cover.
- The residual pit solids will not be mixed at a ratio greater than 1 part pit solids to 3 parts dry earth material (e.g. subsoil).
- The pit will not be closed until the stabilized pit contents pass the paint filter liquids test.

Waste Material Sampling Plan

Prior to closure, a five-point (minimum) composite sample of the residual solids in the pit will be tested in a laboratory to demonstrate that the stabilized material will not exceed the contaminant concentrations listed in Table II of 19.15.17.13 NMAC mixed in a ratio of 3:1 with the earth material to be used for mixing and stabilization of the residual cuttings and mud.

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In-place burial is the selected on-site disposal alternative.

If a concentration of a contaminant within the material mixed at a ratio not exceeding 3:1 is higher than the concentration given in Table II, closure will proceed in accordance with Subsection C of 19.15.17.13 NMAC.

Protocols and Procedures for Earthwork

Stabilization of the residual cuttings and mud is accomplished by mixing dry earth material within the temporary pit footprint. After stabilization the operator or qualified contractor will:

1. Place a geomembrane cover over the waste material in a way to prevent infiltration of water and so that infiltrated water does not collect on the geomembrane cover after the upper soil cover has been placed.
2. Use a geomembrane cover made of 20-mil string reinforced LLDPE liner or an equivalent cover approved by the district office that is composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions and complies with EPA SW-846 Method 9090A.
3. Over the sloping, stabilized material and liner, place the **Soil Cover Design**:
 - a. at least 3-feet of compacted, uncontaminated, non-waste containing earthen fill with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0.
 - b. either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater, over the 3-foot earth material.
4. Contour the cover to blend with the surrounding topography and to prevent erosion of the cover and ponding over the cover.

Closure Notice

The operator will 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. The notice will include the well name, API number, and location.

After approval for in-place burial, the operator shall notify the district office verbally and in writing at least 72 hours but not more than one week before any closure operation. Notice will include the operator's and the location of the temporary pit. The location will include unit letter, section number, township and range. If the location is associated with a well, then the well's name, number and API number will be included.

Should onsite burial be on private land, the operator will file a deed notice including exact location of the burial with the county clerk of the county where the onsite burial is located.

Closure Report

Within 60 days of closure completion, the operator will submit a

- i. closure report on form C-144, with necessary attachments
- ii. a certification that all information in the report and attachments is correct, that the operator has complied with all applicable closure requirements and conditions

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- specified in the approved closure plan
- iii. a plat of the pit location on form C-105
- iv. if burial is in a nearby trench/pit, a separate C-105 showing the exact location

Unless the permit transmittal letter requests an alternative marker to comply with surface landowner specifications, the operator will place at the center of an onsite burial a steel marker that

- is not less than four inches in diameter
- is placed at the bottom of a three-foot deep hole (minimum) that is filled with cement to secure the marker
- is at least four feet above mean ground level
- permanently displays the operator name, lease name, well number, unit letter, section, township and range in welded or stamped legible letters/numbers

Timing of Closure

The operator will close the temporary pit within 6 months from the date the drilling or workover rig was released from the site. This date will be noted on form C-105 or C-103 filed with the division upon the well's or workover's completion.

Reclamation and Re-vegetation Plan

In addition to the area of the in-place burial, the operator will reclaim to a safe and stable condition that blends with the surrounding undisturbed area

1. the pit location not used for burial
2. other areas associated with the in-place burial including access roads

Areas not reclaimed as described herein due to their use in production or drilling operations will be stabilized and maintained to minimize dust and erosion.

As stated above, the soil cover for burial in-place

- A. consists of a minimum of three feet of non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0 placed over the liner and stabilized solids
- B. is capped by the background thickness of topsoil or 1-foot of suitable material to establish vegetation, whichever is greater
- C. blends into surrounding topography
- D. is graded to prevent ponding and to minimize erosion

For all areas disturbed by the closure process that will not be used for production operations or future drilling, the operator will

- I. Replace topsoils and subsoils to their original relative positions
- II. Grade so as to achieve erosion control, long-term stability and preservation of surface

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water flow patterns

- III. Reseed in the first favorable growing season following closure

Re-vegetation and reclamation plans imposed by the surface owner will be outlined in communications with the OCD.

The operator will notify the division when the surface grading work element of reclamation is complete.

The operator will notify the division when the site meets the surface owner's requirements or exhibits a uniform vegetative cover that reflects a life-form ratio of plus or minus fifty percent (50%) of pre-disturbance levels and a total percent plant cover of at least seventy percent (70%) of pre-disturbance levels, excluding noxious weeds.