

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

* Amended

Form C-144
Revised August 1, 2011

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.
For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

**Pit, Closed-Loop System, Below-Grade Tank, or
Proposed Alternative Method Permit or Closure Plan Application**

Type of action: ☒ Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method
☐ Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method
* ☒ Modification to an existing permit
☐ Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, 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 #2H
API Number: 30-015-39844 30-025-40451 ^{SRH} ₄₃₁₁₃ OCD Permit Number: P1-04235
U/L or Qtr/Qtr A Section 32 Township T22S Range R35E County: Lea
Center of Proposed Design: Latitude 32.354456 Longitude -103.382782 NAD: ☐ 1927 ☒ 1983
Surface Owner: ☐ Federal ☒ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
☒ **Pit:** Subsection F or G of 19.15.17.11 NMAC
Temporary: ☒ Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A
☒ Lined ☐ Unlined Liner type: Thickness 20 mil ☐ LLDPE ☒ HDPE ☐ PVC ☐ Other _____
☒ String-Reinforced
Liner Seams: ☒ Welded ☐ Factory ☐ Other _____ Volume: See Plate 1 bbl Dimensions: L _____ x W _____ x D _____

3.
☐ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC
Type of Operation: ☐ P&A ☐ Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)
☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other _____
☐ Lined ☐ Unlined Liner type: Thickness _____ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
Liner Seams: ☒ Welded ☒ Factory ☐ Other _____

4.
☐ **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 _____

5.
☐ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

P.M.

6.	Fencing: Subsection D of 19.15.17.11 NMAC (<i>Applies to permanent pits, temporary pits, and below-grade tanks</i>) ☐ Chain link, six feet in height, two strands of barbed wire at top (<i>Required if located within 1000 feet of a permanent residence, school, hospital, institution or church</i>) ☒ Four foot height, four strands of barbed wire evenly spaced between one and four feet ☐ Alternate. Please specify _____																				
7.	Netting: Subsection E of 19.15.17.11 NMAC (<i>Applies to permanent pits and permanent open top tanks</i>) ☐ Screen ☐ Netting ☒ Other <u>Not Applicable</u> ☐ Monthly inspections (If netting or screening is not physically feasible)																				
8.	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																				
9.	Administrative Approvals 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: ☐ Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval. ☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.																				
10.	Siting Criteria (regarding permitting): 19.15.17.10 NMAC Instructions: <i>The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.</i> <table border="0" style="width: 100%;"> <tr> <td style="width: 85%;"> Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells SEE FIGURE 2 </td> <td style="width: 15%; text-align: right; vertical-align: top;"> ☐ Yes ☒ No </td> </tr> <tr> <td> 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 SEE FIGURE 3 </td> <td style="text-align: right; vertical-align: top;"> ☐ Yes ☒ No </td> </tr> <tr> <td> Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (<i>Applies to temporary, emergency, or cavitation pits and below-grade tanks</i>) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image. SEE FIGURE 4 </td> <td style="text-align: right; vertical-align: top;"> ☐ Yes ☒ No ☐ NA </td> </tr> <tr> <td> Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (<i>Applies to permanent pits</i>) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image. </td> <td style="text-align: right; vertical-align: top;"> ☐ Yes ☐ No ☒ NA </td> </tr> <tr> <td> 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. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site. SEE FIGURES 1 & 2 </td> <td style="text-align: right; vertical-align: top;"> ☐ Yes ☒ No </td> </tr> <tr> <td> 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. SEE FIGURE 5 - Written confirmation or verification from the municipality; Written approval obtained from the municipality </td> <td style="text-align: right; vertical-align: top;"> ☐ Yes ☒ No </td> </tr> <tr> <td> Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site - SEE FIGURE 6 </td> <td style="text-align: right; vertical-align: top;"> ☐ Yes ☒ No </td> </tr> <tr> <td> Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division. SEE FIGURE 7 </td> <td style="text-align: right; vertical-align: top;"> ☐ Yes ☒ No </td> </tr> <tr> <td> Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map. SEE FIGURE 8 </td> <td style="text-align: right; vertical-align: top;"> ☐ Yes ☒ No </td> </tr> <tr> <td> Within a 100-year floodplain. - FEMA map. SEE FIGURE 9 </td> <td style="text-align: right; vertical-align: top;"> ☐ Yes ☒ No </td> </tr> </table>	Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells SEE FIGURE 2	☐ Yes ☒ No	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 SEE FIGURE 3	☐ Yes ☒ No	Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. 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SEE FIGURES 1 & 2	☐ Yes ☒ 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. SEE FIGURE 5 - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☒ No	Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site - SEE FIGURE 6	☐ Yes ☒ No	Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division. SEE FIGURE 7	☐ Yes ☒ No	Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map. SEE FIGURE 8	☐ Yes ☒ No	Within a 100-year floodplain. - FEMA map. SEE FIGURE 9	☐ Yes ☒ No
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Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map. SEE FIGURE 8	☐ Yes ☒ No																				
Within a 100-year floodplain. - FEMA map. SEE FIGURE 9	☐ Yes ☒ No																				

11.

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: _____

12.

Closed-loop Systems 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.

- ☐ Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9
- ☐ Siting Criteria Compliance Demonstrations (only for on-site closure) - 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: _____

☐ Previously Approved Operating and Maintenance Plan API Number: _____ (Applies only to closed-loop system that use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)

13.

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

14.

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 ☐ Closed-loop System

☐ 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 (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

15.

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 F 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 I of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

16.

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D NMAC)**Instructions: Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.**

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that *will not* be used for future service and operations?☐ Yes (If yes, please provide the information below) ☐ No*Required for impacted areas which will not be used for future service and operations:*☐ 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 I of 19.15.17.13 NMAC☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

17.

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 may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.**

Ground water is less than 50 feet below the bottom of the buried waste.

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

☐ Yes ☒ No☐ NA

Ground water is between 50 and 100 feet below the bottom of the buried waste

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

☐ Yes ☒ No☐ 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

☒ Yes ☐ No☐ NA

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

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

☐ Yes ☒ No

Within 500 horizontal feet of a 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.

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

☐ Yes ☒ 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 500 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

☐ 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

18.

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 F of 19.15.17.13 NMAC☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements 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 Subsection F of 19.15.17.13 NMAC☒ Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F 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 I of 19.15.17.13 NMAC☒ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

19.
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/Fred Wright Title: Production Superintendent Site Supervisor

Signature: Richard L. Wright Date: 8-31-12

e-mail address: rwright@cazapetro.com and r@rthicksconsult.com Telephone: 432-682-7424 x1006 (Hicks: 505/266-5004)

20.
OCD Approval: ☒ Permit Application (including closure plan) ☐ Closure Plan (only) ☐ OCD Conditions (see attachment)

OCD Representative Signature: Jeffery Leikins Approval Date: 01/07/13
Environmental Specialist

Title: _____ OCD Permit Number: P1-04235

21.
Closure Report (required within 60 days of closure completion): Subsection K of 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: _____

22.
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.

23.
Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:
Instructions: Please identify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.

Disposal Facility Name: _____ Disposal Facility Permit Number: _____
Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and operations?
☐ Yes (If yes, please demonstrate compliance to the items below) ☐ No

Required for impacted areas which will not be used for future service and operations:
☐ Site Reclamation (Photo Documentation)
☐ Soil Backfilling and Cover Installation
☐ Re-vegetation Application Rates and Seeding Technique

24.
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)
☐ 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

25.
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: _____

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, 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 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.

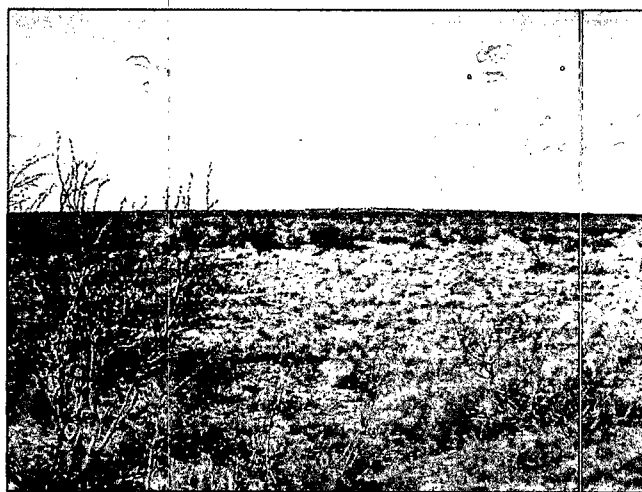


Photo to Northeast (downslope) from Site

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

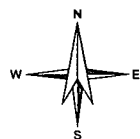
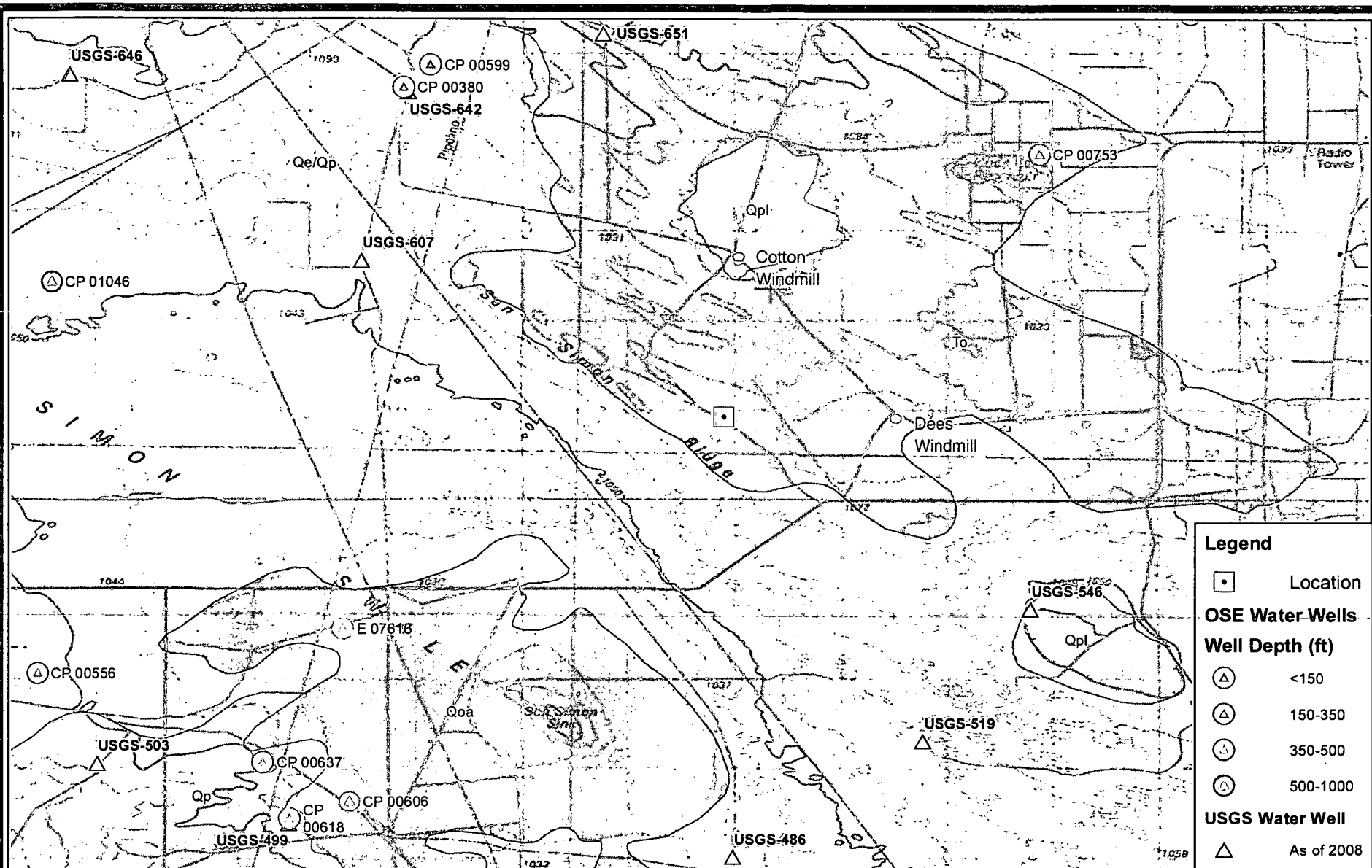
Distance to 100-Year Floodplain

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 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

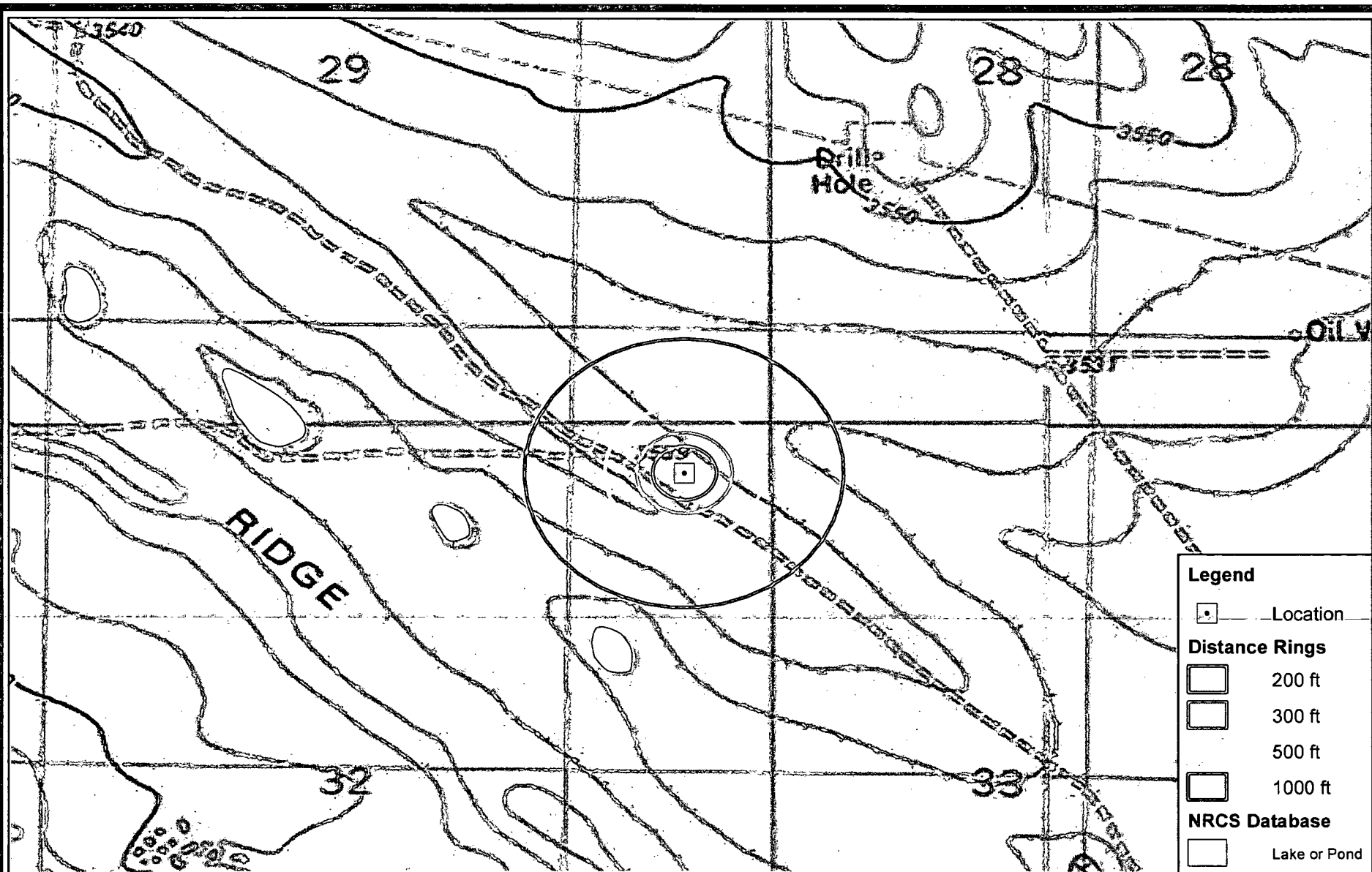
OSE, USGS, and Observed Water Wells

Caza Operating: Lennox State 32 2H

Figure 1

August 2012





Legend

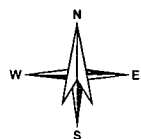
Location

Distance Rings

200 ft
300 ft
500 ft
1000 ft

NRCS Database

Lake or Pond



0 500 1,000
Feet

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Albuquerque, NM 87104
Ph: 505.266.5004

Surface Water Map

Caza Operating: Lennox State 32 2H

Figure 3

August 2012



Legend

□ Location

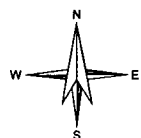
Distance Rings

□ 200 ft

□ 300 ft

□ 500 ft

□ 1000 ft



0 500 1,000
Feet

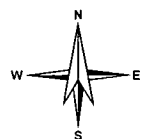
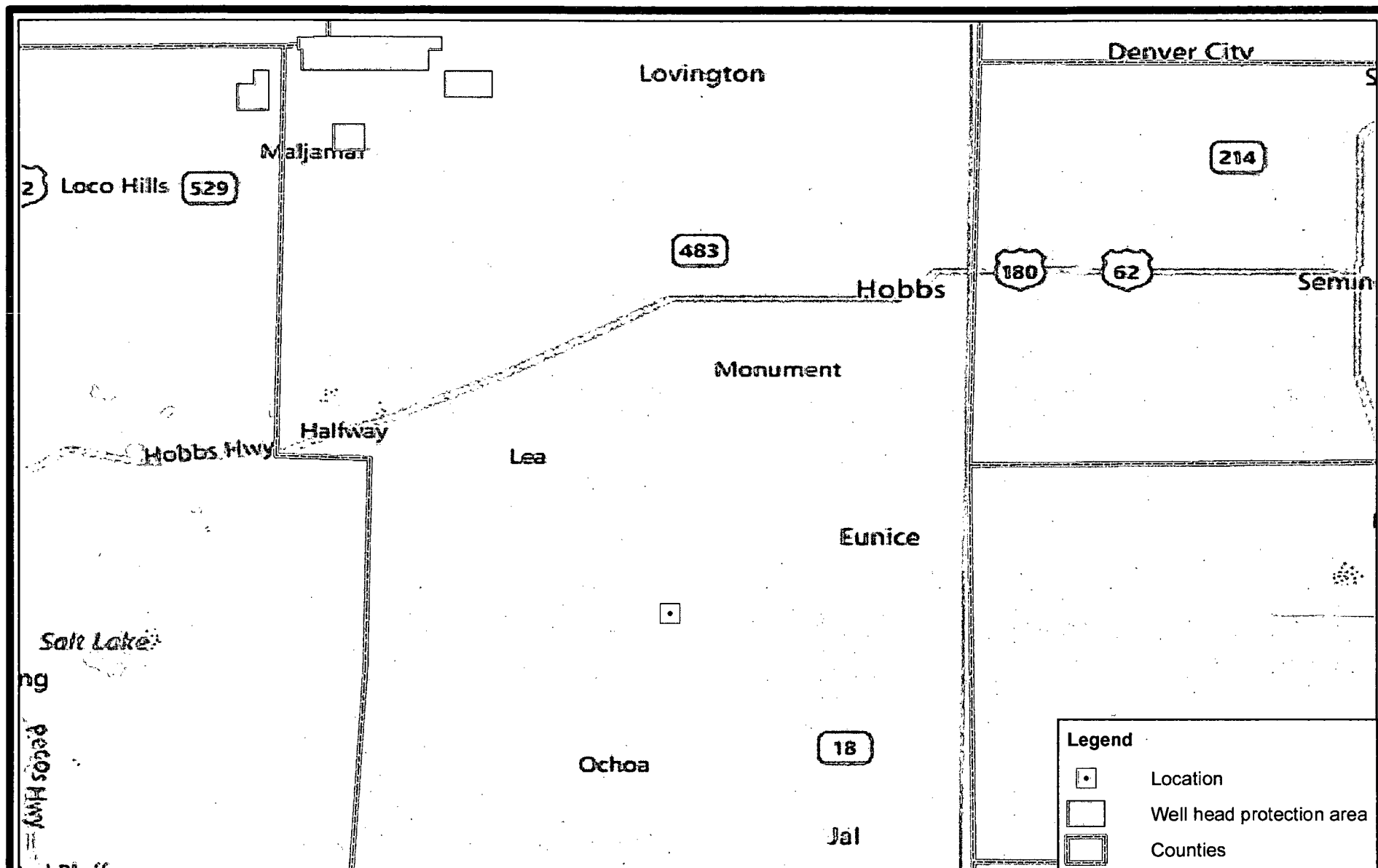
R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Residential Structures and Facilities

Figure 4

Caza Operating: Lennox State 32 2H

August 2012



0 5 10
Miles

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Albuquerque, NM 87104
Ph: 505.266.5004

Municipal Boundaries and Well Fields

Caza Operating: Lennox State 32 2H

Figure 5

August 2012

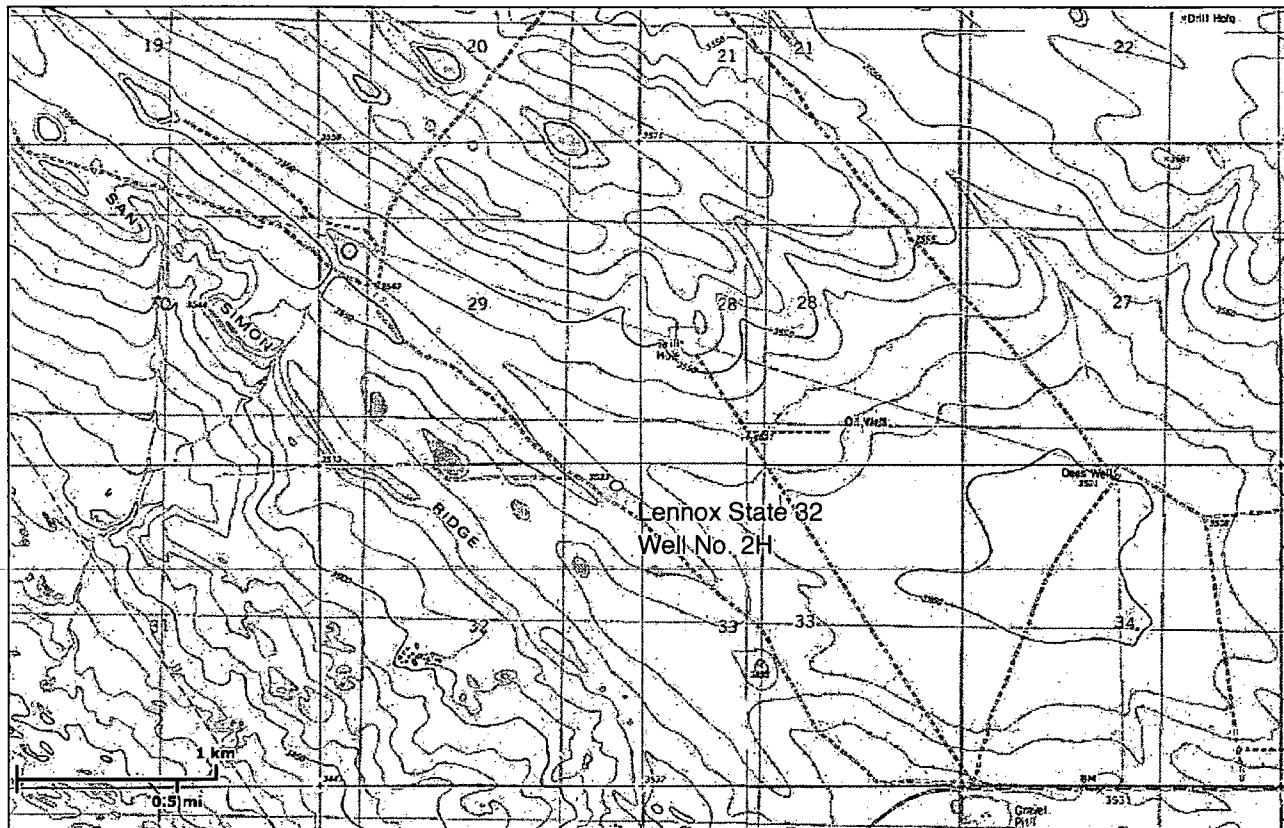


U.S. Fish and Wildlife Service

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

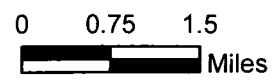
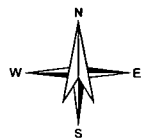
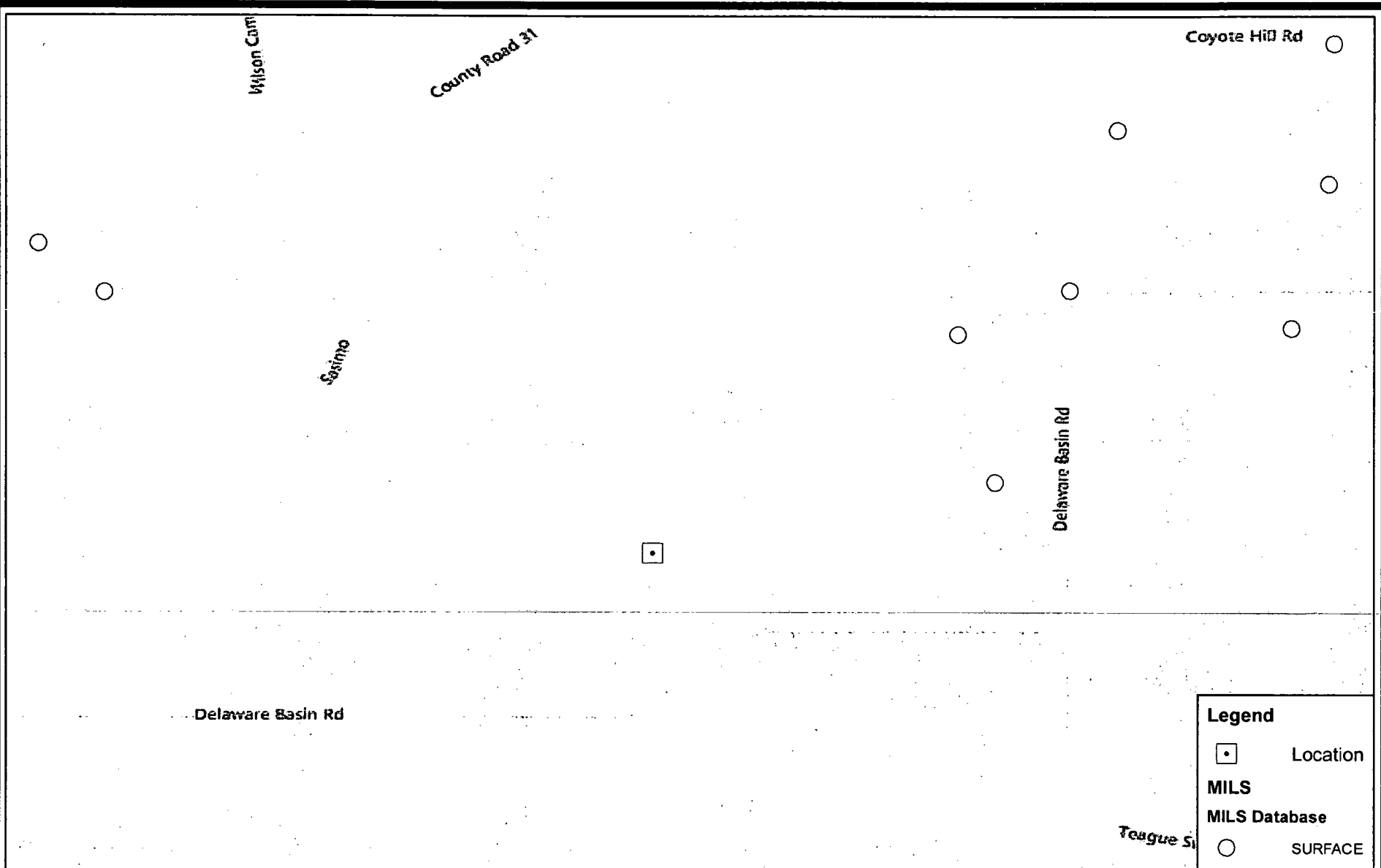
Riparian

- 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:

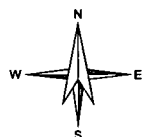
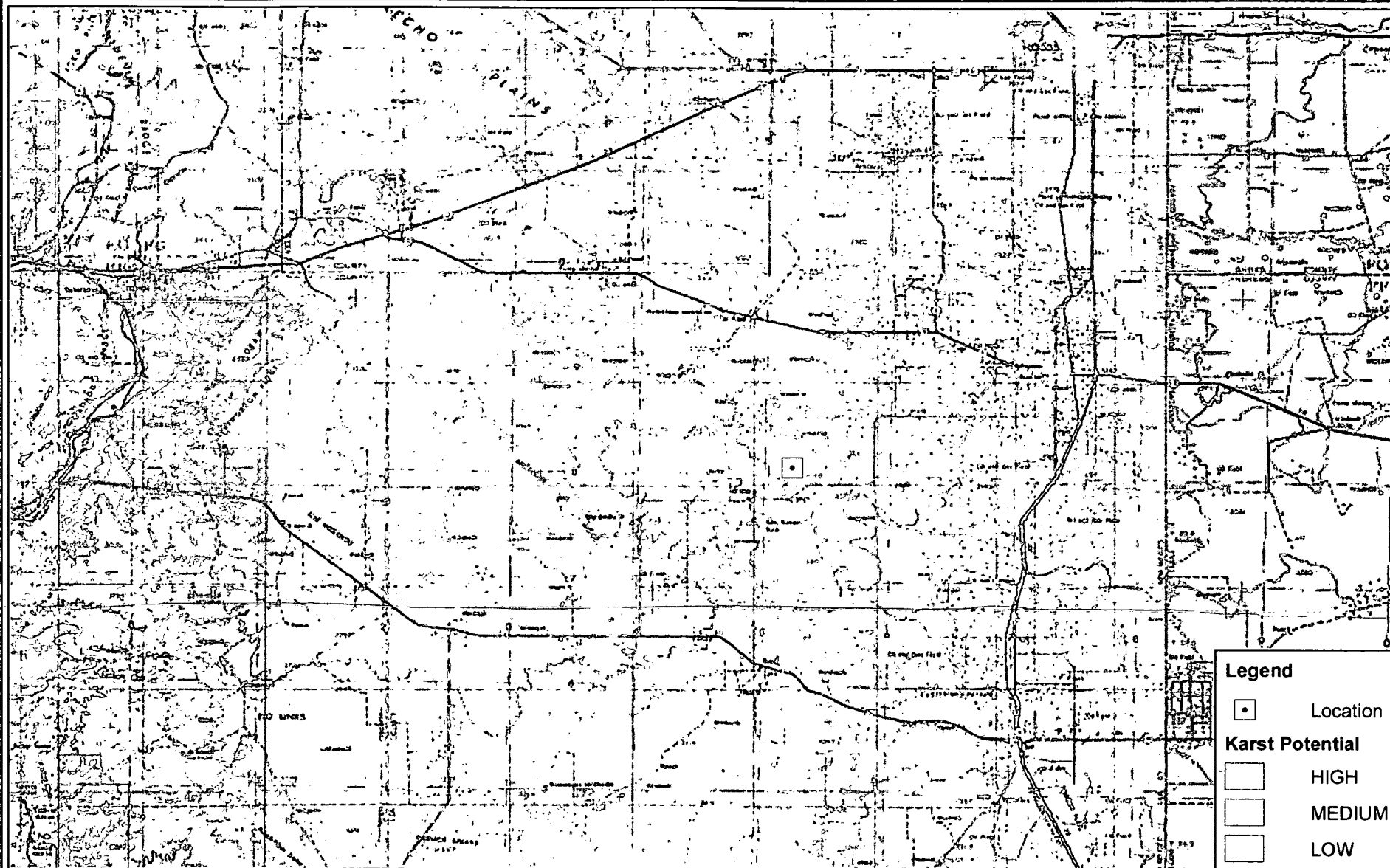
Caza OperatingLennox State 32 #2H



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

Subsurface Mines
Caza Operating: Lennox State 32 2H

Figure 7
August 2012



0 4 8
Miles

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Albuquerque, NM 87104
Ph: 505.266.5004

Karst Potential Areas

Caza Operating: Lennox State 32 2H

Figure 8

August 2012

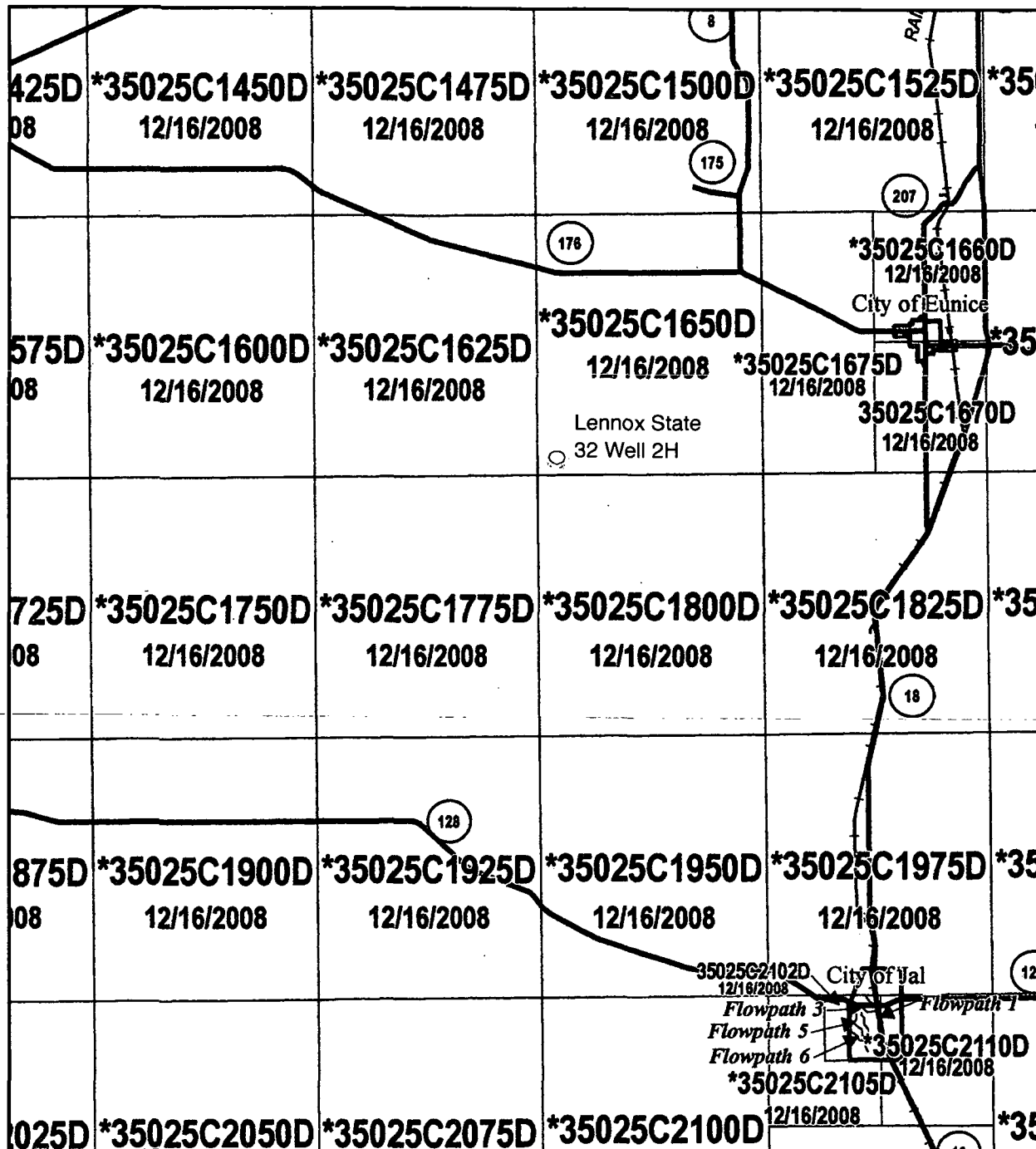


Figure 9



NATIONAL FLOOD INSURANCE PROGRAM

MAP INDEX

FIRM

FLOOD INSURANCE RATE MAP

LEA COUNTY,

NEW MEXICO

AND INCORPORATED AREAS

MAP INDEX

PANELS PRINTED: 440, 445, 955,
965, 1165, 1170, 1200, 1335, 1345, 1355,
1365, 1670, 2102



MAP NUMBER

35025CIND0A

EFFECTIVE DATE

DECEMBER 16, 2008

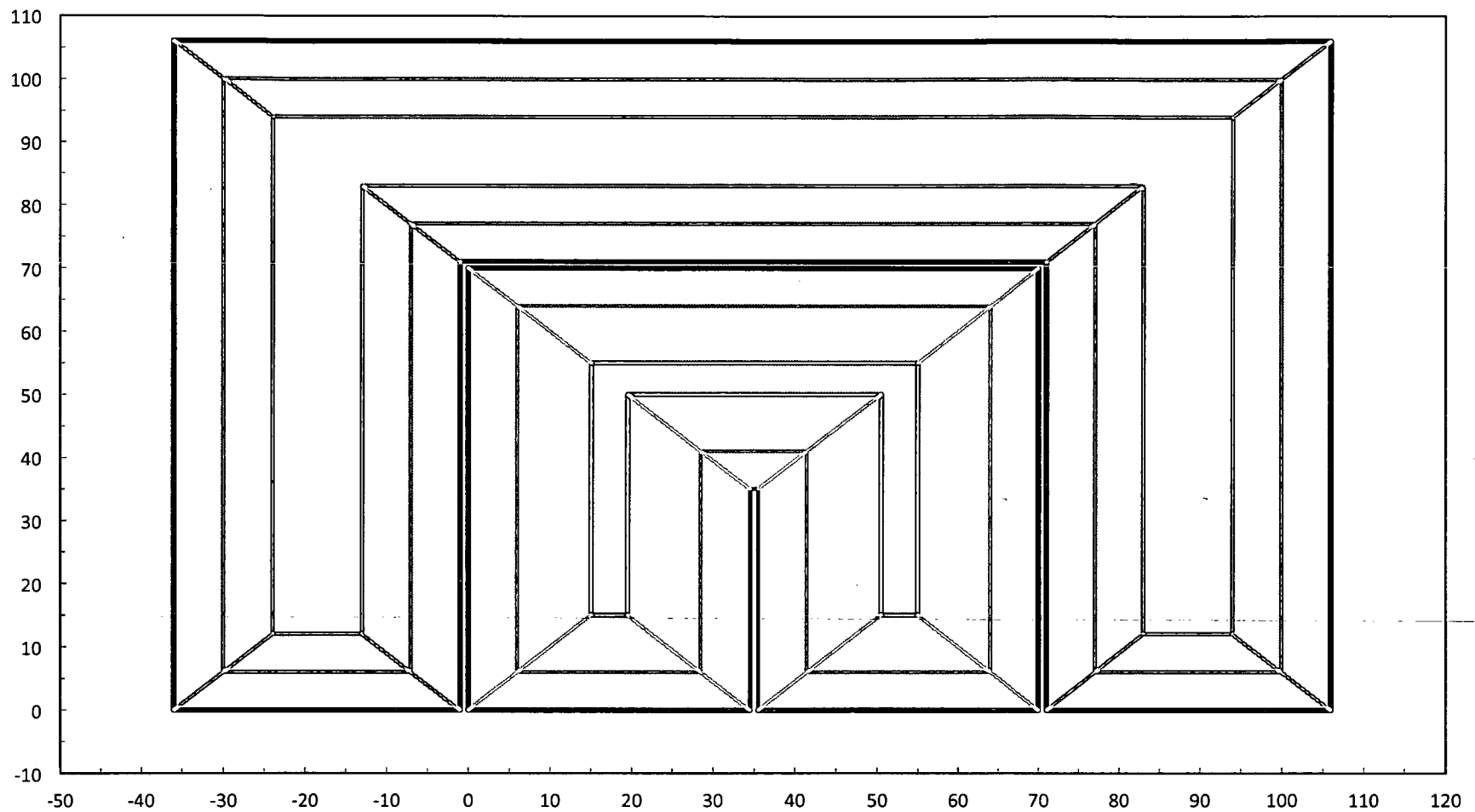
Federal Emergency Management Agency

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

Site Specific Information Plates

R.T. Hicks Consultants, Ltd.

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



R.T. Hicks Consultants
901 Rio Grande Blvd. NW
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	4.5	[-]

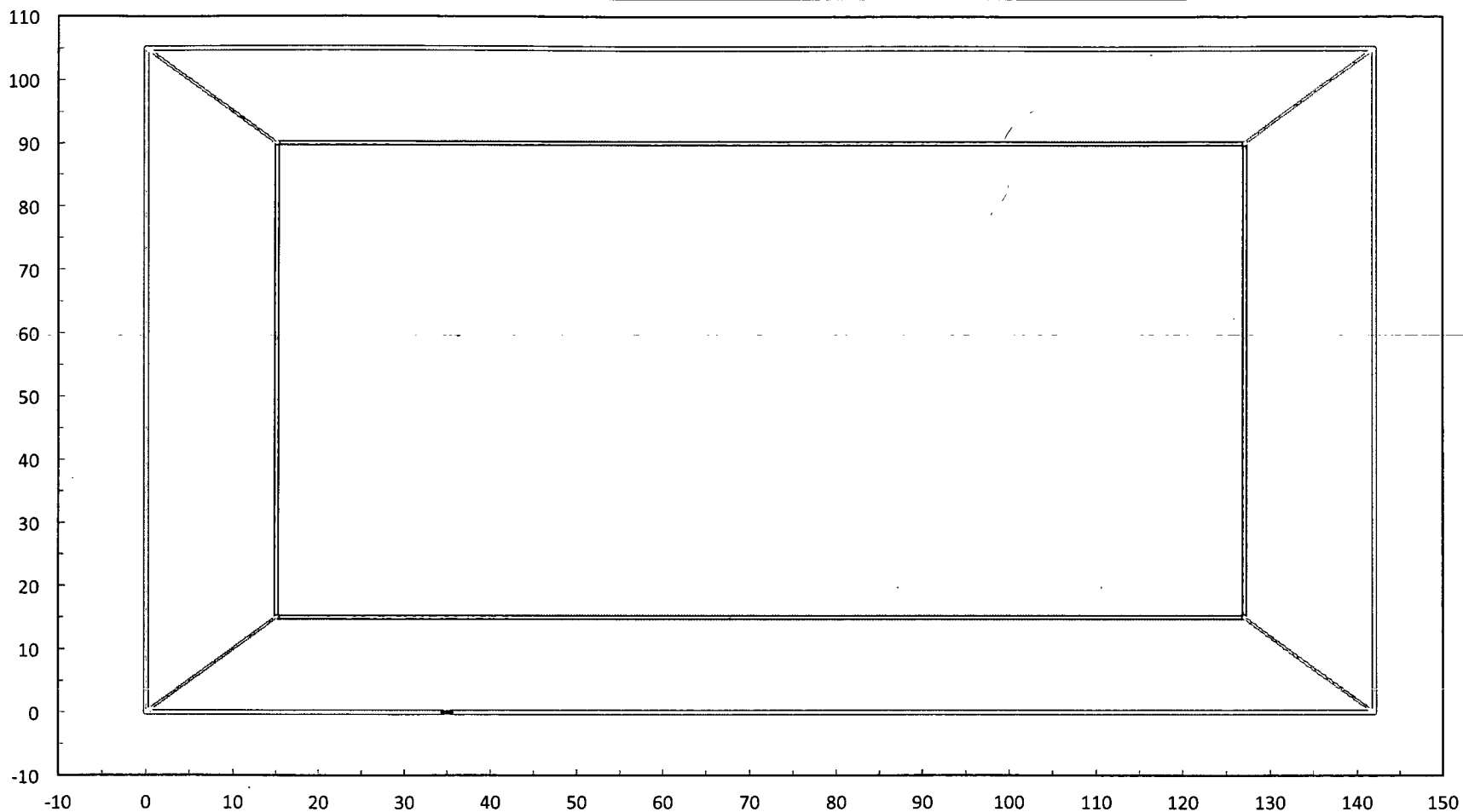
2.0 3/9/13

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



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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

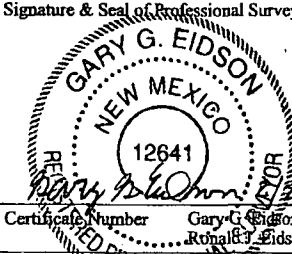
RECEIVED
WELL LOCATION AND ACREAGE DEDICATION PLAT

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

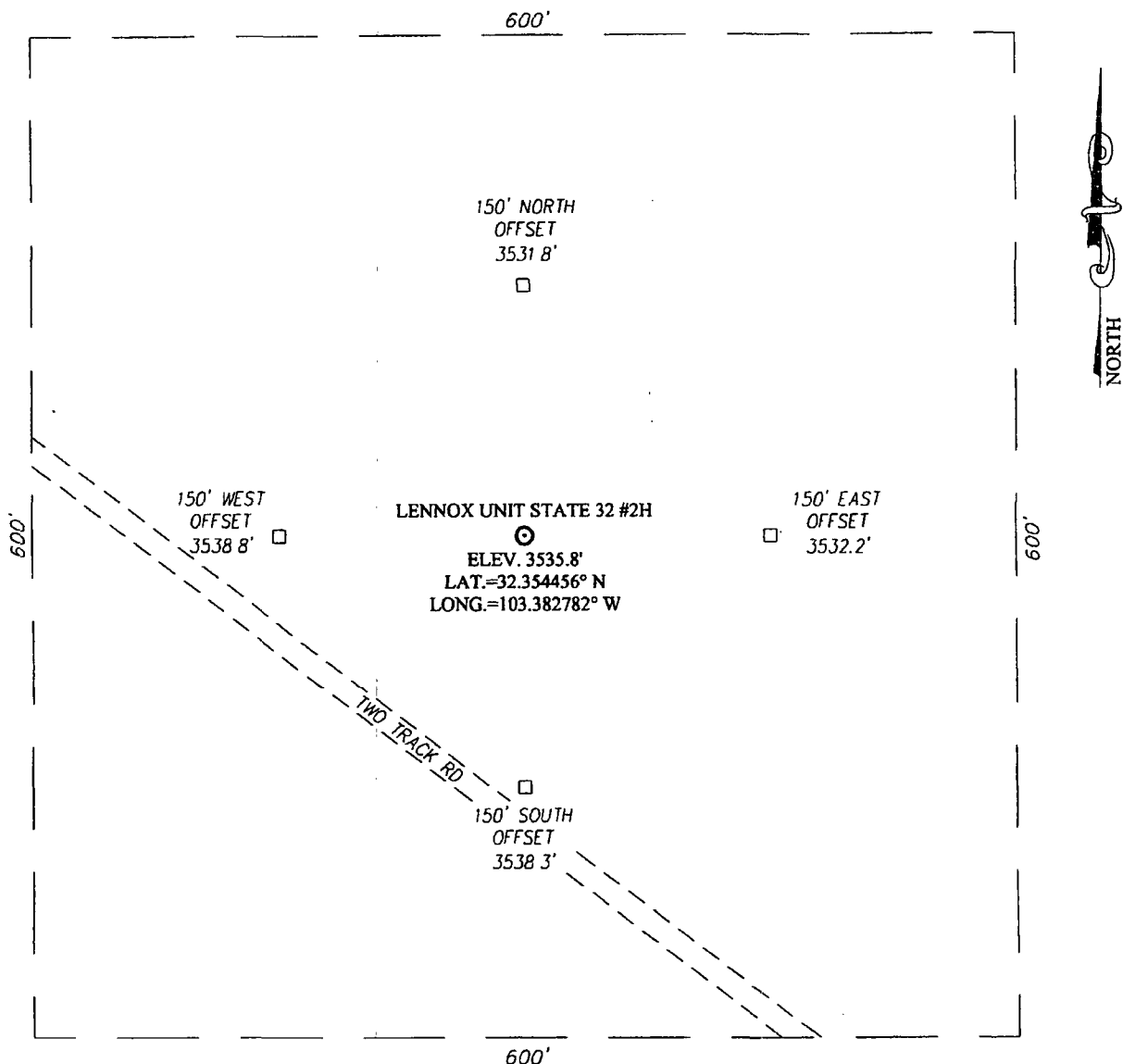
Surface Location									
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	32	22-S	35-E		330	NORTH	660	EAST	LEA

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 160	Joint or Infill	Consolidation Code	Order No.						

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

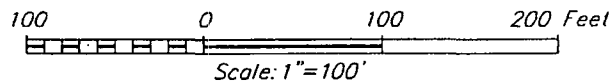
435' FNL POE & 660' FEL GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=493969.9 N X=793532.5 E LAT.=32.354456° N LONG.=103.382782° W BOTTOM HOLE LOCATION Y=489339.5 N X=793587.1 E PRODUCING AREA PROJECT AREA CORNER COORDINATES TABLE ① - Y=494289.4 N, X=792873.8 E ② - Y=494310.3 N, X=794187.9 E ③ - Y=489003.5 N, X=792930.5 E ④ - Y=489015.6 N, X=794250.3 E GRID AZ = 179°19'27" HORIZ DIST. = 4631.6'		OPERATOR CERTIFICATION 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>Joe T. Janica</i> Signature Date Printed Name Joe T. Janica 02/22/12 E-mail Address joejanica@valornet.com 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. FEBRUARY 15, 2012 Date of Survey Signature & Seal of Professional Surveyor:  Certificate Number Gary G. Eidson 12641 Ronald J. Eidson 3239 AF
--	--	---

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



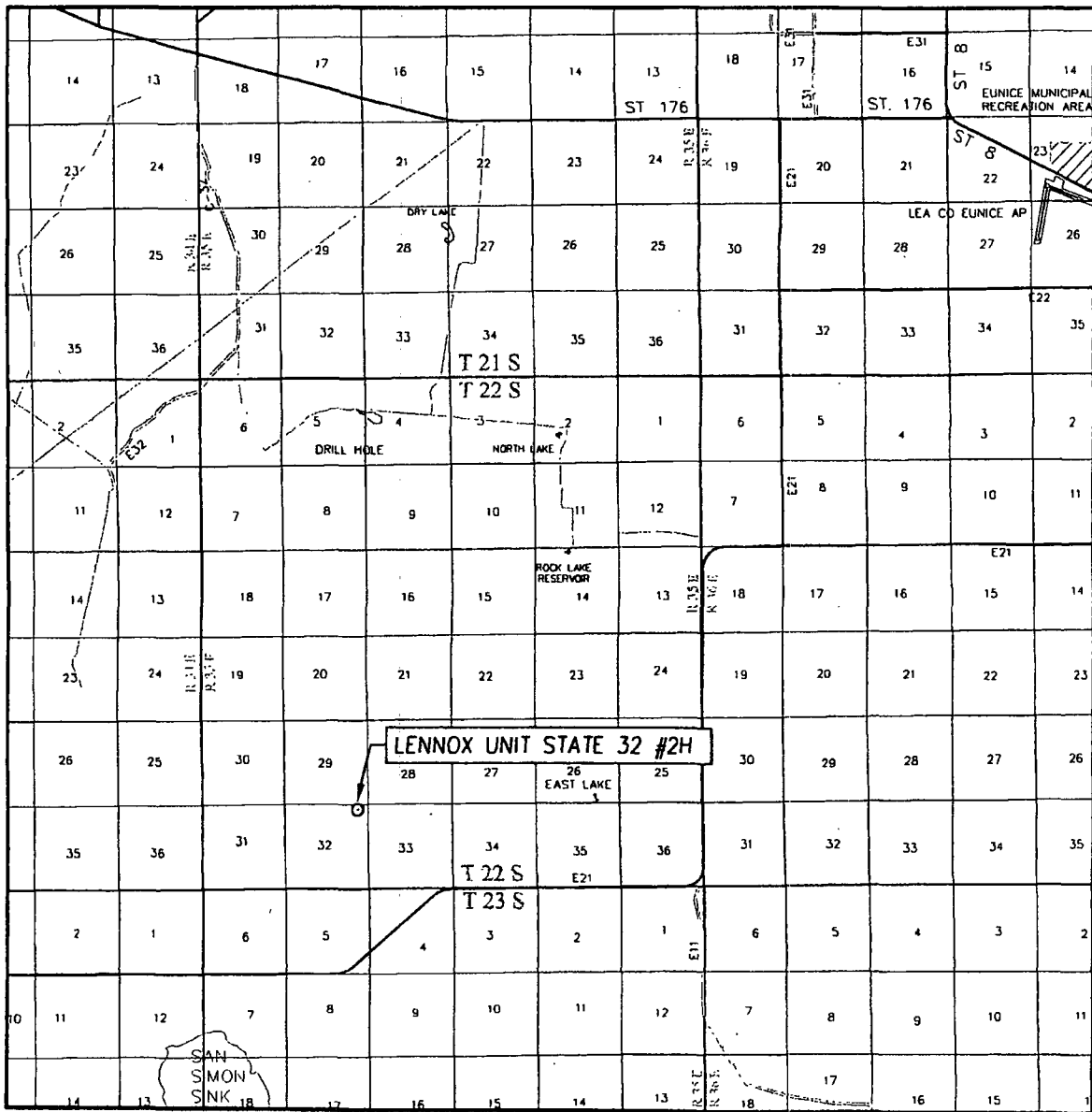
CAZA OPERATING, LLC

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

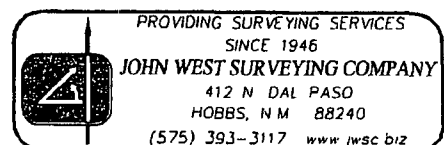
COUNTY LEA STATE NEW MEXICO

DESCRIPTION 330' FNL & 660' FEL

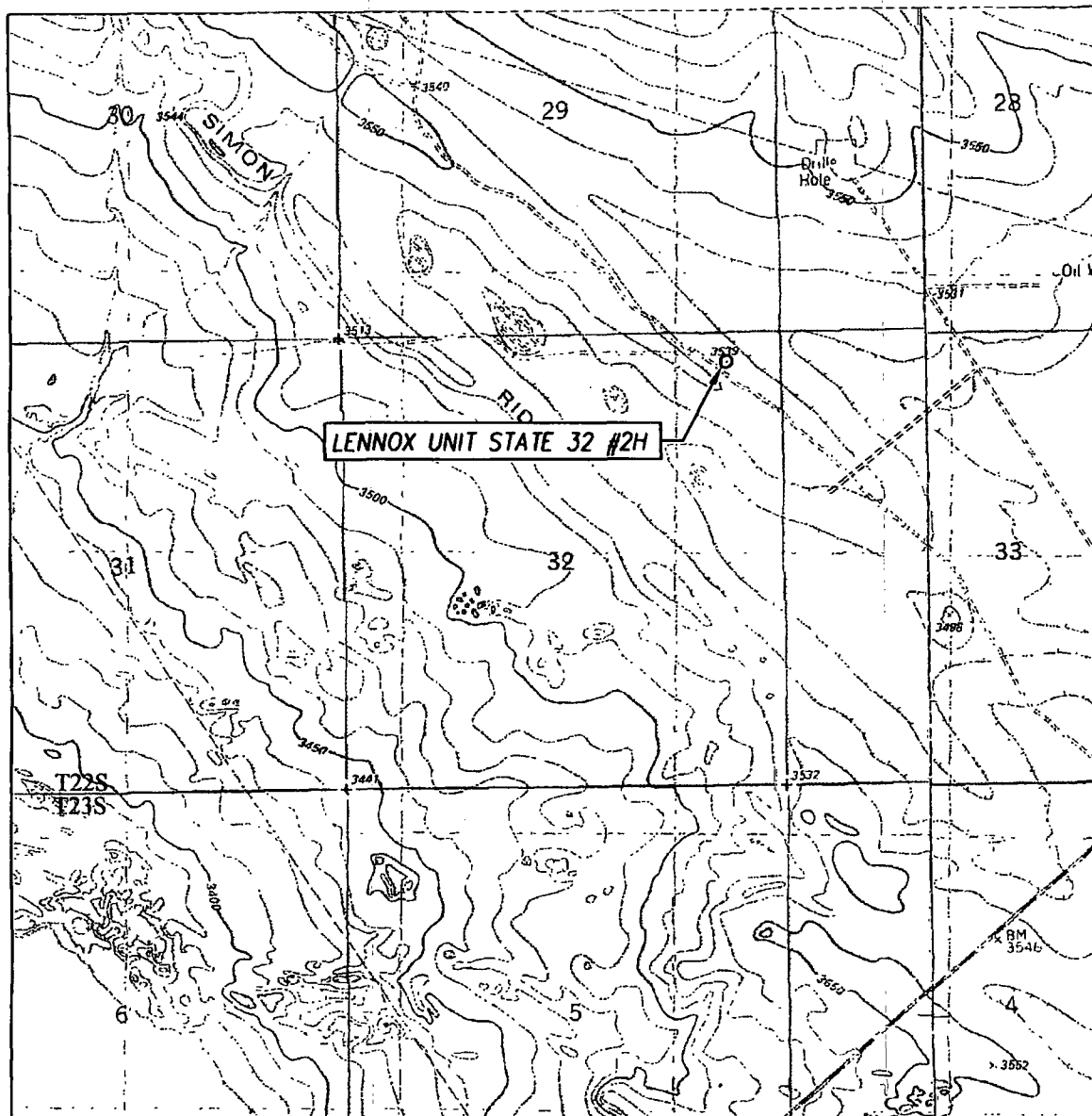
ELEVATION 3536'

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

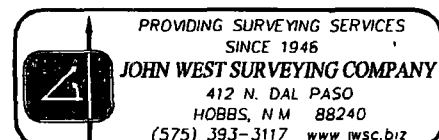
DESCRIPTION 330' FNL & 660' FEL

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 rebed 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		Year completed	Surface diameter of wells	Method of lift	Use of water	Remarks
					Depth below land surface (feet)	Date measured					
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	—
24.223	do.	Tr	—	3,620	205.7	4-14-54	—	—	Lw	S	"Scharbauer" well.
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						Remarks
					Depth below surface (feet)	Date measured	Year completed	Surface diameter of wells	Method of lift	Use of water	
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 30 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 4.
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-Brunson 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.
22.37.28.823	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, 185-192 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, 325-380 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.

NEW MEXICO BUREAU OF MINES & MINERAL RESOURCES

23.35.27.444	—	To	—	3,480	117.2	3- -53	—	7	N	N	—
23.36.15.414	J. E. Matkins	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	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	867M	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	—
38.231	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	—

GROUND WATER LEA COUNTY

Generic Plans for Temporary Pits

R.T. Hicks Consultants, Ltd.

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

Temporary Pit Design Plan

Plates 1a, 1b, and 1c 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
2. A cell for the storage of fresh water (drilling/stimulation) and stimulation flow-back water prior to re-use or disposal

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 filtered perforated pipe and drainage mats cover much of the bottom of the drilling cell of the pit – the cut brine cell and the inner 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 house a solar-powered pump. The drainage system for the cut brine cell removes water to the brine cell via the solar pumps. This water can be placed in an above-ground tank or the fluids cell of the pit for temporary storage before re-use or disposal. The drainage system in the brine cell may also be used to introduce 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 to the brine cell (which will become cut brine or saturated brine after movement through the cuttings) 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

C-144 Supplemental Documentation for Drilling Pit

- e. Applicable netting requirements
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

1. The operator or qualified contractor will design and construct the pit to contain liquids and solids and prevent contamination of fresh water and protect public health and the environment.
2. Prior to constructing the pit the operator or qualified contractor will strip and stockpile the topsoil for use as the final cover or fill at the time of closure.
3. The operator will post an upright sign in compliance with 19.15.16.8 NMAC. The operator will post the sign in a manner and location such that a person can easily read the legend. The sign will provide the following information: the operator's name; the location of the site by quarter-quarter or unit letter, section, township and range; and emergency telephone numbers.
4. The operator will fence the pit in a manner that prevents unauthorized access and will maintain the fences in good repair. The operator will fence the pit 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. The pit will be completely fenced at all times excluding drilling and workover operations. During drilling or workover operations, the operator is not required to fence the edge of the pit adjacent to the drilling or workover rig.
5. The operator will design and construct the temporary pit to prevent unauthorized releases and ensure the confinement of liquids.
6. 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.
7. The slopes of the pit will be no steeper than two horizontal feet to one vertical foot (2H:1V). Unless an alternate slope, protective to fresh water, public health and the environment, is proposed and approved by the appropriate division district office.
8. As an addition engineering control to address any concerns relating to the presence of karst and associated instability, during construction of the pit the contractor will compact

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the earth material that forms the foundation for the pit liner. An expected proctor density of greater than 90% will be achieved by

- a. Adding water to the earth material as appropriate,
 - b. Compacting the earth by walking a crawler-type tractor down the sides and bottom of the pit
 - c. Repeating this process with a second 6-inch lift of earth material if necessary
9. The operator will design and construct the temporary pit with a geomembrane liner. The geomembrane liner will consist of 20-mil string reinforced LLDPE or equivalent liner material that the appropriate division district office approves. 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.
 10. The operator will minimize liner seams and orient them up and down, not across a slope. The operator will use factory-welded seams. Prior to any field seaming, the operator will overlap liners four to six inches and orient seams parallel to the line of maximum slope, *i.e.*, oriented along, not across, the slope. The operator will minimize the number of welded field seams in corners and irregularly shaped areas. Qualified personnel will weld field seams.
 11. Construction will avoid excessive stress-strain on the liner.
 12. Geotextile will be placed under the liner where needed to reduce localized stress-strain or protuberances that may otherwise compromise the liner's integrity.
 13. The operator and/or qualified contractor retained by the operator will anchor the edges of all liners in the bottom of a compacted earth-filled trench. The anchor trench will be at least 18 inches deep.
 14. The operator and/or qualified contractor retained by the operator will 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.
 15. The operator and/or qualified contractor retained by the operator will design and construct the temporary pit to prevent run-on of surface water. As necessary, a berm or ditch will surround the temporary pit to prevent run-on of surface water.
 16. The volume of the temporary pit (fluids cell plus drilling cell), including freeboard, does not exceed 10 acre-feet (77,583 bbls).

Temporary Pit Operating and Maintenance Plan

The operator will operate and maintain the pit to contain liquids and solids and maintain the integrity of the liner, liner system, or any secondary containment system to prevent contamination of fresh water and protect public health and the environment as described below:

1. If feasible, the operator will recycle, reuse or reclaim of all drilling fluids and recovered water in a manner approved by division rules that prevents the contamination of fresh water and protects public health and the environment. Specifically, drilling fluids and reclaimed water will be transferred to other drilling operations for use (see closure plan).
2. If re-use is not possible, fluids will be sent to disposal at division-approved facility.
3. Reuse or disposal of fluids from the pit will be conducted in a manner approved by division rules that prevents the contamination of fresh water and protects public health and the environment.
4. The operator will not discharge into or store any hazardous waste in the pit.
5. If any pit liner's integrity is compromised, or if any penetration of the liner occurs above the liquid's surface, then the operator will notify the appropriate division district office within 48 hours (phone or email) of the discovery and repair the damage or replace the liner.
6. 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, notify the appropriate district office within 48 hours (phone or email) of the discovery and repair the damage or replace the pit liner.
7. The injection or withdrawal of liquids from the pit will be accomplished through 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.
8. The operator will install diversion ditches and berms around the pit as necessary to prevent the collection of surface water run-on.
9. The operator will immediately remove any visible layer of oil from the surface of the temporary pit and maintain on site an oil absorbent boom to contain and remove oil from the pit's surface.
10. Only fluids used or generated during the drilling or workover process will be discharged into the temporary pit. The discharge of workover fluids to the drilling pit as a rinse to the drilling waste solids is discussed in the closure plan (below).
11. The operator will maintain the temporary pit free of miscellaneous solid waste or debris.
12. Although hydrocarbon-based drilling mud is not anticipated for use, the operator will use a tank made of steel to contain hydrocarbon-based drilling fluids if need be.
13. Immediately after cessation of drilling, the operator will remove any visible or measurable layer of oil from the surface of a drilling pit, in the manner described above.
14. The operator will maintain at least two feet of freeboard for the temporary pit.
15. The operator will inspect the temporary pit containing drilling fluids at least daily while the drilling rig is on-site to ensure compliance with this plan.
16. After drilling operations, the operator will inspect the temporary drilling pit weekly so long as liquids remain in the temporary pit.

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17. The operator will maintain a log of such inspections and make the log available for the appropriate district office's review upon request.
18. The operator will file a copy of the log with the appropriate division district office when the operator closes the temporary pit.
19. The operator will remove all free liquids from the temporary pit within 30 days from the date that the operator releases the drilling rig – unless granted an extension of time by the District Office. The operator will note the date of the drilling rig's release on form C-105 or C-103 upon well completion.

Temporary Pit Closure Plan

Protocols and Procedures

The operator will use the following procedures and protocols to implement the closure:

- The operator will notify the surface owner by certified mail, return receipt requested, prior to closure, that the operator plans to close the temporary pit.
- The operator of the temporary pit will notify the applicable division district office verbally or by email at least 72 hours, but not more than one week, prior to any closure operation. The notice will include the operator's name and the location to be closed by unit letter, section, township and range, well's name, number, the API number.
- The operator of the temporary pit will remove all liquids from the temporary pit prior to closure and either:
 - Dispose of the liquids in a division-approved facility, or
 - Recycle, reuse or reclaim the liquids for use in drilling another well.
- Fluids on and entrained in the drilling waste will be removed from the pit for re-use or disposal.
- The operator may request extensions of time for the pit to hold free liquids as extensions may be necessary to allow the addition of water to the outer horse shoe of the pit to cause rinsing of solid waste and removal of constituents of concern via the pit drainage system to the inner shoe then to an above-ground tank (or truck) or to the fluids cell of the temporary pit. Sources of water for rinsing the solid drilling waste in the outer horse shoe include:
 - Residual fresh water in the workover cell not used for hydraulic fracturing (removed from the workover cell prior to the introduction of flow-back)
 - Flow-back of water pumped down hole during hydraulic fracturing that is less than 50% of the estimated TDS of pit pore water based on field conductance or specific gravity measurements¹.
- Fluids pumped from the outer horseshoe drainage system are transferred to the inner shoe drainage system causing relatively low salinity water to move up through the cuttings, dissolving the rock salt cuttings.
- When the inner shoe contains at least 130 barrels of clear water (one water truck load), the brine or cut brine can be removed for re-use in drilling operations or sent to disposal.
- The operator shall remove all free liquids from the temporary pit within 30 days from the date that the operator released the drilling rig. The operator shall note the date of the drilling rig's release on form C-105 or C-103 upon well completion. The operator will request an extension of up to three months from the appropriate division district office if necessary to allow for rinsing of drilling waste solids and the recovery of water for re-use.

¹ If water pumped from the pit drainage system prior to stimulation is 9.5 pounds/gallon and distilled water is 8.3 pounds per gallon, discharge to the outer shoe ceases when measurements of flow back are 8.9 pounds/gallon or less

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- After removal of all standing water, cuttings rinsing ceases and drilling cell drainage begins as:
 - Water from the outer horseshoe drainage system discharges to the surface of the inner shoe
 - Solar pumping from the inner shoe drainage system transfers water to an above-grade tank or the fluids cell of the temporary pit
- Fluids drained from the cell are temporarily stored in the above-ground tank or fluids cell and are removed for re-use or disposal. Both temporary storage of fluids from the pit and reuse or 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.
- The operator will close the temporary pit within six months of the date that the operator releases the drilling rig. An extension not to exceed three months may be requested of the applicable district office.
- The operator will close the pit by an earlier date that the division requires because of imminent danger to fresh water, public health or the environment.
- Within 60 days of closure completion, the operator will submit a closure report on form C-144, with necessary attachments to document all closure activities including sampling results; information required by 19.15.17 NMAC; a plot plan; and details on back-filling, capping and covering, where applicable.
- In the closure report, the operator will certify that all information in the report and attachments is correct and that the operator has complied with all applicable closure requirements and conditions specified in the approved closure plan.
- The operator will provide a plat of the pit location on form C-105 with the closure report within 60 days of closing the temporary pit.

Additional Protocols and Procedures for On-Site Closure

- The operator has provided the surface owner notice of the operator's proposal of an on-site closure (see transmittal letter for proof of notice to the landowner) as required in 19.15.17.13.F(1)(b).
- Upon receipt of NMOCD approval for on-site closure (in-place burial), the operator will notify the surface owner by certified mail, return receipt requested, that the operator plans to close the pit and where the operator has approval for on-site closure. Evidence of mailing of the notice will demonstrate compliance with this requirement.
- The operator will place a steel marker at the center of an on-site burial (unless the surface owner requires an alternative marker that is acceptable to the appropriate division district office). The steel marker will be not less than four inches in diameter and will be cemented in a three-foot deep hole at a minimum. The steel marker will extend at least four feet above mean ground level and at least three feet below ground level. The operator name, lease name and well number and location, including unit letter, section, township and range, and that the marker designates an on-site burial location will be welded, stamped or otherwise permanently engraved into the metal of the steel marker.

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- The operator will report the exact location of the on-site burial on form C-105 filed with the division.
- If the State of New Mexico or the Federal government owns the land surface, no deed exists, the land is held in trust. Therefore, the operator cannot file a deed notice identifying the exact location of the on-site burial with the county clerk in the county. The exact location of the on-site burial will be transmitted to the surface owner by copy of the form C-105 discussed above.
- If the surface is not in the public domain, the operator will file a deed notice identifying the exact location of the on-site burial with the county clerk in the county. The exact location of the on-site burial will be transmitted to the surface owner by copy of the form C-105 discussed above.

In-place closure is the preferred closure alternative for the temporary pit. If waste sampling results suggest that standards for in-place closure are not met for the entire drilling cell (inner horseshoe and outer horseshoe), the operator will implement excavation and removal as described in later sections of this plan

Site Reclamation Plan

After the operator has closed the pit, the operator will reclaim the pit location and all areas associated with the pit, including associated access roads to a safe and stable condition that blends with the surrounding undisturbed area. The operator will substantially restore the impacted surface area to the condition that existed prior to oil and gas operations by placement of the soil cover as provided in Subsection H of 19.15.17.13 NMAC, re-contour the location and associated areas to a contour that approximates the original contour and blends with the surrounding topography and re-vegetate according to Subsection I of 19.15.17.13 NMAC.

Soil Cover Design Plan

If the operator removes the pit contents or remediates any contaminated soil to the division's satisfaction the soil cover will consist of the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.

The soil cover for the in-place burial will consist of a minimum of four feet of compacted, non-waste containing, earthen material. The soil cover will include either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.

The operator will construct the soil cover to the site's existing grade and prevent ponding of water and erosion of the cover material.

Re-vegetation Plan

1. The first growing season after the operator closes the pit, including access roads; the operator will seed or plant the disturbed areas.
2. The operator will accomplish seeding by drilling on the contour whenever practical.
3. The operator will obtain vegetative cover that equals 70% of the native perennial vegetative cover (un-impacted by overgrazing, fire or other intrusion damaging to native vegetation).
4. In the absence of specific guidance from the surface owner, the operator will follow BLM mandates for the seed mixture not including noxious weeds, and maintain that cover through two successive growing seasons. The operator will notify NMOCD of the specific mixture prior to seeding.
5. During the two growing seasons that prove viability, there will be no artificial irrigation of the vegetation.
6. The operator will repeat seeding or planting until it successfully achieves the required vegetative cover.
7. If conditions are not favorable for the establishment of vegetation, such as periods of drought, the operator may request that the division allow the operator to delay seeding or planting until soil moisture conditions become favorable or may require the operator to use additional cultural techniques such as mulching, fertilizing, irrigating, fencing or other practices.
8. The operator will notify the division when it has seeded or planted and when it successfully achieves re-vegetation.

In-place Closure Plan

In the event that sampling of the drilling waste suggests that the inner and outer horseshoe of the drilling cell meet the criteria for in-place closure, the operator will proceed with in-place closure for one or both cells (inner and outer horseshoe).

Siting Criteria Compliance Demonstration for In-Place Burial

The Siting Criteria Compliance Demonstration for the temporary pit show that the requirements of 19.15.17.10 NMAC are met for in-place closure.

Waste Material Sampling Plan for In-place Burial

The operator will collect at a minimum, a five-point, composite sample of the contents of the temporary pit after treatment or stabilization.

The purpose of the sampling after the waste material is stabilized is to demonstrate that:

- Benzene, as determined by EPA SW 846 method 8021B or 8260B, does not exceed the concentration limit for in-place burial;
- Total BTEX, as determined by EPA SW-846 method 8021B or 8260B, does not exceed the concentration limit for in-place burial;
- The GRO and DRO combined fraction, as determined by EPA SW-846 method

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- 8015M, does not exceed the concentration limit for in-place burial;
- TPH, as determined by EPA method 418.1 does not exceed the concentration limit for in-place burial;
- Chloride, as determined by EPA method 300.1, does not exceed the concentration limit for in-place burial or the background concentration, whichever is greater.
- The Stabilized waste passes the paint filter liquids test (EPA SW-846, method 9095)

Protocols and Procedures for In-Place Burial

In addition to the General Conditions Protocols and Procedures and the Additional Protocols and Procedures for On-site Closure listed above, the operator will execute the following steps for in-place closure of the pit:

- A. The operator will measure the distance between the top of the drilling waste and existing grade to determine if stabilized drilling waste (see stabilization methods, below) will be at least 4-feet below existing grade to allow installation of the soil cover (see soil cover design, above).
- B. The operator will stabilize or solidify the contents of the pit to a bearing capacity sufficient to support the temporary pit's final cover. However, the operator will not mix the pit contents with soil or other material at a mixing ratio of greater than 3:1, (3 parts soil or other material to 1 part drilling waste).
- C. Specifically, the drilling waste will be stabilized in the cell by adding no more than 3 parts clean fill derived from the excavation of the pit to 1 part drilling waste.
- D. After stabilization such that the waste material will support the soil cover, the mixture will be re-sampled (as necessary) pursuant to NMOCD Rules (see above).
- E. If sample results show that stabilized waste in the inner and outer horse shoe of the cell satisfy the regulatory standards for in-place burial, the operator will measure the distance between the stabilized waste and existing grade and, if necessary, transfer stabilized waste from one shoe to the other to allow for placement of the soil cover (see design criteria, above).
- F. Cover the geomembrane lined, filled, temporary pit with compacted, non-waste containing, earthen material; construct a division-prescribed soil cover; recontour and re-vegetate the site as described in this plan. Specifically, a 4-foot thick soil cover consistent with NMOCD Rules will be placed over the stabilized waste.
- G. If necessary to meet the other mandates of NMOCD Rules (e.g placement of a 4-foot soil cover to existing grade) and this closure plan, the stabilized drilling waste in the inner horseshoe will be excavated and placed in the outer horseshoe. The operator will implement confirmation sampling consistent with excavation and removal (see below) if this option is exercised on the inner horseshoe. This process would be conducted according to applicable regulations as described below, not allowing waste stabilization to exceed a 3:1 mixing ratio (3 parts soil or other material to 1 part drilling waste), testing

stabilized waste to demonstrate compliance with in-place burial standards as required, sampling to confirm no release has occurred beneath the inner horseshoe.

- H. Any excess liner above the stabilized waste will be removed for re-use or disposal.

Excavation and Removal Closure Plan

IF THE CRITERIA FOR ON-SITE CLOSURE (IN-PLACE BURIAL) FOR SOME OR ALL OF THE TEMPORARY PIT ARE NOT MET, THE OPERATOR WILL ADHERE TO NMOC D RULES AND IMPLEMENT THE FOLLOWING ACTIONS FOR ONLY THE MATERIALS THAT DO NOT MEET CRITERIA FOR IN PLACE CLOSURE:

Protocols and Procedures for Excavation and Removal

The operator will close the temporary pit by excavating the drilling waste that does not meet the criteria for in-place closure (e.g. solids in the inner shoe) and any synthetic pit liners that cannot be re-used and transferring those materials to one of the division-approved facilities listed below:

Controlled Recovery, Inc.
Lea Land, LLC

NM-01-0006
NM-01-0035

If the sampling program described below demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Subparagraph (b.ii) of Paragraph (1) of Subsection B of 19.15.17.13 NMAC, then the operator will:

1. Backfill the temporary pit excavation with compacted, non-waste containing, earthen material;
2. Construct a division-prescribed soil cover to existing grade as described in the Soil Cover Plan (above);
3. Re-contour and re-vegetate the site as described in the Re-vegetation Plan (above).

Confirmation Sampling Plan for Excavation and Removal

The operator will test the soils beneath the temporary pit after excavation to determine whether a release has occurred. To determine if a release has occurred, the operator and/or qualified contractor will collect, at a minimum:

- A five-point, composite sample
- Individual grab samples from any area that is wet, discolored or showing other evidence of a release

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The purpose of this sampling is to demonstrate that:

- Benzene, as determined by EPA SW-846 method 8021B or 8260B does not exceed concentration limits of the Rule;
- Total BTEX, as determined by EPA SW-846 method 8021B or 8260B does not exceed concentration limits of the Rule;
- The GRO and DRO combined fraction, as determined by EPA SW-846 method 8015M, does not exceed concentration limits of the Rule;
- The TPH, as determined by EPA method 418.1 does not exceed 2,500 mg/kg; and
- Chloride, as determined by EPA method 300.1, does not exceed concentration limits of the Rule or the background concentration, whichever is greater.

Reporting

The operator shall notify the division of its results on form C-141. If the operator or the division determines that a release has occurred, then the operator will comply with 19.15.29 NMAC and 19.15.30 NMAC, as appropriate.