

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505

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

Form C-144
July 21, 2008

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.

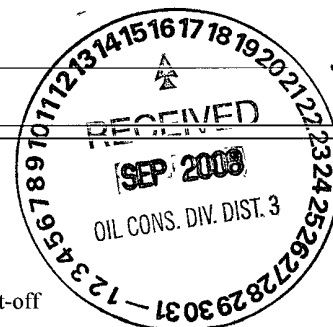
1.
Operator: **ELM RIDGE EXPLORATION COMPANY, LLC** OGRID #: **149052**
Address: **P. O. BOX 156, BLOOMFIELD, NM 87413**
Facility or well name: **BISTI GALLUP 20 #2**
API Number: **30-045-33944** OCD Permit Number: _____
U/L or Qtr/Qtr **NWNE** Section **20** Township **25 N** Range **12 W** County: **SAN JUAN**
Center of Proposed Design: Latitude **36.392177° N** Longitude **108.132481° W** 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: **9,939** bbl Dimensions: L **160'** x W **40'** x D **10'**

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.



6.

Fencing: Subsection D of 19.15.17.11 NMAC (*Applies to permanent pits, temporary pits, and below-grade tanks*)

- ☐ Chain link, six feet in height, two strands of barbed wire at top (*Required if located within 1000 feet of a permanent residence, school, hospital, institution or church*)
- ☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet
- ☒ Alternate. Please specify minimum 36" hog wire topped with at least 1 strand of barbed wire = at least 48" high fence

7.

Netting: Subsection E of 19.15.17.11 NMAC (*Applies to permanent pits and permanent open top tanks*)

- ☐ Screen ☐ Netting ☐ Other _____
- ☐ Monthly inspections (If netting or screening is not physically feasible)

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 19.15.3.103 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. *See italicized requests for alternate slopes on Page 3 of attachment*
- ☐ 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: *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.*

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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (<i>Applies to temporary, emergency, or cavitation pits and below-grade tanks</i>) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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 See 10. on APD Page 9 (Exhibit K)

☐ 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): **BRIAN WOOD** Title: **CONSULTANT**

Signature: _____

Date: **9-13-08**

e-mail address: **brian@permitswest.com** Telephone: **(505) 466-8120**

20.

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

OCD Representative Signature: Brian Wood **Approval Date:** 10-10-08

Title: Enviro/spec **OCD Permit Number:** _____

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: _____

Elm Ridge Exploration Company, LLC
Bisti Gallup 20 #2 temporary pit
660' FNL & 1980' FEL Sec. 20, T. 25 N., R. 12 W.
San Juan County, New Mexico
API #30-045-33944

PAGE 1

Siting Criteria

1. Ground water is >100' below the bottom of the pit. Closest reported water depth is the U. S. Department of Interior (USDI) well which is ≈4 miles northeast in 1-25n-12w. Water depth is 210' in the 403' deep USDI well. The USDI well probably produces from the Ojo Alamo sandstone. Pit will be in the Nacimiento Formation. Office of the State Engineer records for the 4 closest townships are attached as Exhibit A.

6,291' graded ground
- 10' deep pit
6,281' bottom of pit

6,281' USDI water well ground elevation
-210' depth to water
6,071' water level elevation

6,281' bottom of pit
- 6,071' water level
≈210' depth to water

2. Pit is not within 300' of a continuously flowing watercourse. Pit is not within 200' of any other significant watercourse as defined by OCD. Closest first order tributary of the West Fork of Gallegos Canyon is over a mile downstream (Exhibit B).

3. Pit is not within 300' of any building. Closest buildings are ≈3/4 mile northwest in Section 17 (Exhibits B & C).

4. Pit is not within 1,000' any fresh water well or spring (Exhibits A & B).

5. Pit is not within municipal boundaries or within a municipal fresh water well field (Exhibits A & B).

6. Pit is not within 500' of a wetland (Exhibit D).

7. Pit does not overly a mine (Exhibit E).

Elm Ridge Exploration Company, LLC
Bisti Gallup 20 #2 temporary pit
660' FNL & 1980' FEL Sec. 20, T. 25 N., R. 12 W.
San Juan County, New Mexico
API #30-045-33944

PAGE 2

8. Pit is not in an unstable area. No evidence of earth movement was found during an on site inspection. Maximum grade is $\approx 4\%$. Over 90% of the pit will be in cut (Exhibit F).

9. Pit is not within a 100 year flood plain (Exhibit G).

10. C-102 is attached as Exhibit H.

11. Closure notice (items 7 & 10 on PAGES 7 & 8 of APD) to surface owner (Navajo Nation) is attached as Exhibit I.

Hydrogeology

Surface formation is the badland Nacimiento. According to Stone et al in Hydrogeology and water resources of San Juan Basin, New Mexico, the Nacimiento is mainly a mudstone. There are also medium to coarse grained sandstone layers in the Nacimiento. Transmissivities of 100 feet² per day can be found in the coarser continuous sandstones. Water in the more extensive sandstones has a specific conductance of 1,500 μmhos . Specific conductance is $>2,000 \mu\text{mhos}$ in the finer grained sandstones. The Nacimiento is above the Ojo Alamo sandstone. The Ojo Alamo outcrops to the northeast and southwest of Section 20.

Alternative for 19.15.17.11 D. (3)

Elm Ridge is proposing an alternate fence. Sheep graze in the project area and hog wire has been found to be more effective than just barbed wire. The operator will fence the pit with a minimum 48" high fence. Fence will consist of minimum 36" woven wire (hog wire) topped with at least 1 strand of barbed wire.

Elm Ridge Exploration Company, LLC
Bisti Gallup 20 #2 temporary pit
660' FNL & 1980' FEL Sec. 20, T. 25 N., R. 12 W.
San Juan County, New Mexico
API #30-045-33944

PAGE 3

Alternative for 19.15.17.11 F. (2)

Elm Ridge is proposing alternate (vertical) slopes for the 160' long sides of the pit. Alternate is requested to minimize well site footprint. This allows a smaller rig to be used. Rig must be close to the deep part of the pit since the pump is on the rig itself. Elm Ridge will install extra liner to allow for some slack and avoid stress and strain. Elm Ridge will also install two rope ladders - one on each of the 160' long sides.

Alternative for 19.15.17.13 F. (1) (d)

If the well goes into production, then an alternate interim marking system will be used to allow for safer and more efficient operations. A minimum 4" O. D. steel pipe will be set at least 36" deep at the center of the pit. A threaded collar will be on the top of the pipe. A minimum 12" x 12" steel plate will be welded atop the threaded collar. Top of the plate will be flush with ground level. The standard location information listed will be welded onto the plate, plus a notation that it marks an on site buried temporary pit. Upon plugging the well, the plate will be removed and the pit marked as described in 19.15.17.13 F. (1) (d).

Executed this 13th day of September, 2008.



Brian Wood, Consultant

Permits West, Inc.

37 Verano Loop, Santa Fe, NM 87508

(505) 466-8120

FAX: (505) 466-9682

Cellular: (505) 699-2276

Elm Ridge Exploration Company, LLC
Bisti Gallup 20 #2 temporary pit
660' FNL & 1980' FEL Sec. 20, T. 25 N., R. 12 W.
San Juan County, New Mexico
API #30-045-33944

PAGE 4

The operator's field representative is:

Terry Lindeman
Elm Ridge Exploration Company, LLC
P. O. Box 156
Bloomfield, NM 87413
(505) 632-3476

NMOCD Rules

19.15.17.11 DESIGN AND CONSTRUCTION SPECIFICATIONS:

A. General specifications. An operator shall design and construct a pit, ~~closed-loop system, below-grade tank or sump~~ to contain liquids and solids and prevent contamination of fresh water and protect public health and the environment.

B. Stockpiling of topsoil. Prior to constructing a pit ~~or closed-looped system~~, except a pit constructed in an emergency, the operator shall strip and stockpile the topsoil for use as the final cover or fill at the time of closure.

C. Signs. The operator shall post an upright sign not less than 12 inches by 24 inches with lettering not less than two inches in height in a conspicuous place on the fence surrounding the pit, ~~closed-loop system or below-grade tank~~, unless the pit, ~~closed-loop system or below-grade tank~~ is located on a site where there is an existing well, signed in compliance with 19.15.3.103 NMAC, that is operated by the same operator. The operator shall post the sign in a manner and location such that a person can easily read the legend. The sign shall provide the following information: the operator's name; the location of the site by quarter-quarter or unit letter, section, township and range; and emergency telephone numbers.

D. Fencing.

(1) The operator shall fence or enclose a pit ~~or below-grade tank~~ in a manner that prevents unauthorized access and shall maintain the fences in good repair. Fences are not required if there is an adequate surrounding perimeter fence that prevents unauthorized access to the well site or facility, including the pit ~~or below-grade tank~~. During drilling or work over operations, the operator is not required to fence the edge of the pit adjacent to the drilling or work over rig.

~~(2) The operator shall fence or enclose a pit or below-grade tank located within 1000 feet of a permanent residence, school, hospital, institution or church with a chain link security fence, at least six feet in height with at least two strands of barbed wire at the top. The operator shall ensure that all gates associated with the fence are closed and locked when responsible personnel are not on site.~~

Elm Ridge Exploration Company, LLC
Bisti Gallup 20 #2 temporary pit
660' FNL & 1980' FEL Sec. 20, T. 25 N., R. 12 W.
San Juan County, New Mexico
API #30-045-33944

PAGE 5

~~During drilling or work over operations, the operator is not required to fence the edge of the temporary pit adjacent to the drilling or work over rig.~~

(3) ~~The operator shall fence any other pit or below grade tank to exclude livestock with a four foot fence that has at least four strands of barbed wire evenly spaced in the interval between one foot and four feet above ground level.~~ The appropriate division district office may approve an alternative to this requirement if the operator demonstrates that an alternative provides equivalent or better protection. The appropriate division district office may impose additional fencing requirements for protection of wildlife in particular areas.

The operator will fence the pit with a minimum 48" high fence. Fence will consist of minimum 36" woven wire (hog wire) topped with at least 1 strand of barbed wire.

E. ~~Netting. The operator shall ensure that a permanent pit or a permanent open top tank is screened, netted or otherwise rendered non hazardous to wildlife, including migratory birds. Where netting or screening is not feasible, the operator shall on a monthly basis inspect for, and within 30 days of discovery, report discovery of dead migratory birds or other wildlife to the appropriate wildlife agency and to the appropriate division district office in order to facilitate assessment and implementation of measures to prevent incidents from reoccurring.~~

F. Temporary pits. The operator shall design and construct a temporary pit in accordance with the following requirements.

(1) The operator shall design and construct a temporary pit to ensure the confinement of liquids to prevent unauthorized releases.

(2) A temporary pit shall have a properly constructed foundation and interior slopes consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear. ~~The operator shall construct a temporary pit so that the slopes are no steeper than two horizontal feet to one vertical foot (2H:1V).~~ *The short (40' wide) side slopes will be no steeper than two horizontal feet to one vertical foot (2H:1V). The long (160' wide) side slopes will be vertical.* The appropriate division district office may approve an alternative to the slope requirement if the operator demonstrates that it can construct and operate the temporary pit in a safe manner to prevent contamination of fresh water and protect public health and the environment.

(3) The operator shall design and construct a temporary pit with a geomembrane liner. The geomembrane liner shall consist of 20-mil string reinforced LLDPE or equivalent liner material that the appropriate division district office approves. The geomembrane liner shall be

composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material shall be resistant to ultraviolet light. Liner compatibility shall comply with EPA SW-846 method 9090A.

(4) The operator shall minimize liner seams and orient them up and down, not across a slope. The operator shall use factory welded seams where possible. Prior to field seaming, the operator shall 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 shall minimize the number of field seams in corners and irregularly shaped areas. Qualified personnel shall perform field seaming. The operator shall weld field liner seams.

(5) Construction shall avoid excessive stress-strain on the liner.

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

(7) The operator shall anchor the edges of all liners in the bottom of a compacted earth-filled trench. The anchor trench shall be at least 18 inches deep.

(8) The operator shall 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 *by using an $\approx 8"$ O. D. PVC pipe at a $\approx 45^\circ$ angle.*

(9) The operator shall design and construct a temporary pit to prevent run-on of surface water. A berm, ditch, proper sloping or other diversion shall surround a temporary pit to prevent run-on of surface water. During drilling operations, the edge of the temporary pit adjacent to the drilling or work over rig is not required to have run-on protection if the operator is using the temporary pit to collect liquids escaping from the drilling or work over rig and run-on will not result in a breach of the temporary pit.

(10) The volume of a temporary pit shall not exceed 10 acre-feet, including freeboard.

(11) The part of a temporary pit used to vent or flare gas during a drilling or work over operation that is designed to allow liquids to drain to a separate temporary pit does not require a liner, unless the appropriate division district office requires an alternative design in order to protect surface water, ground water and the environment. The operator shall not allow freestanding liquids to remain on the unlined portion of a temporary pit used to vent or flare gas.

19.15.17.12 OPERATIONAL REQUIREMENTS:

A. General specifications. An operator shall maintain and operate a pit, ~~closed-loop system, below-grade tank or sump~~ in accordance with the following requirements.

(1) The operator shall operate and maintain a pit, ~~closed-loop system, below-grade tank or sump~~ to contain liquids and solids and maintain the integrity of the liner, liner system or secondary containment system, prevent contamination of fresh water and protect public health and the environment.

(2) The operator shall recycle, reuse or reclaim or dispose of all drilling fluids in a manner, approved by division rules, that prevents the contamination of fresh water and protects public health and the environment. *Operator will haul such fluids to the Basin Disposal (NM-01-005) evaporation pond (3-29n-11w) .*

(3) The operator shall not discharge into or store any hazardous waste in a pit, ~~closed-loop system, below-grade tank or sump~~.

(4) If any pit liner's integrity is compromised, or if any penetration of the liner occurs above the liquid's surface, then the operator shall notify the appropriate division district office within 48 hours of the discovery and repair the damage or replace the liner.

(5) If a pit, ~~below-grade tank, closed-loop system or sump~~ develops a leak, or if any penetration of the pit liner, ~~below-grade tank, closed-loop system or sump~~ occurs below the liquid's surface, then the operator shall remove all liquid above the damage or leak line within 48 hours, notify the appropriate division district office within 48 hours of the discovery and repair the damage or replace the pit liner, ~~below-grade tank, closed-loop system or sump~~.

(6) The injection or withdrawal of liquids from a pit shall 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.

(7) The operator shall operate and install a pit, ~~below-grade tank or sump~~ to prevent the collection of surface water run-on.

(8) The operator shall install, or maintain on site, an oil absorbent boom or other device to contain and remove oil from a pit's surface.

B. Temporary pits. An operator shall maintain and operate a temporary pit in accordance with the following additional requirements.

(1) Only fluids used or generated during the drilling or work over process may be discharged into a temporary pit. The operator shall maintain a temporary pit free of miscellaneous solid waste or debris. The operator shall use a tank made of steel or other material, which the appropriate division district office approves, to contain hydrocarbon-based drilling fluids. Immediately after cessation of a drilling or work over operation, the operator shall remove any visible or measurable layer of oil from the surface of a drilling or work over pit.

(2) The operator shall maintain at least 2 feet of freeboard for a temporary pit.

(3) The operator shall inspect a temporary pit containing drilling fluids at least daily while the drilling or work over rig is on-site. Thereafter, the operator shall inspect the temporary pit weekly so long as liquids remain in the temporary pit. The operator shall maintain a log of such inspections and make the log available for the appropriate division district office's review upon request. The operator shall file a copy of the log with the appropriate division district office when the operator closes the temporary pit.

(4) The operator shall remove all free liquids from a temporary pit within 30 days from the date that the operator releases the drilling or work over rig. The operator shall note the date of the drilling or work over rig's release on form C-105 or C-103 upon well or work over completion. The appropriate division district office may grant an extension of up to three months.

(5) The operator shall remove any liquids from the temporary pit used for cavitation within 48 hours after completing cavitation. The operator may request and receive additional time to remove the liquids from the temporary pit used for cavitation if the operator demonstrates to the appropriate division district office's satisfaction that it is not feasible to access the location within 48 hours.

19.15.17.13 CLOSURE REQUIREMENTS:

A. Time requirements for closure. An operator shall close a pit, ~~closed-loop system or below-grade tank~~ within the time periods provided in 19.15.17.13 NMAC, or by an earlier date that the division requires because of imminent danger to fresh water, public health or the environment.

~~(1) An operator shall cease discharging into an existing unlined permanent pit that is~~

Elm Ridge Exploration Company, LLC
Bisti Gallup 20 #2 temporary pit
660' FNL & 1980' FEL Sec. 20, T. 25 N., R. 12 W.
San Juan County, New Mexico
API #30-045-33944

PAGE 9

~~permitted by or registered with the division within two years after June 16, 2008. An operator shall close an existing unlined permanent pit that is permitted by or registered with the division within three years after June 16, 2008.~~

~~(2) An operator shall cease discharging into an existing, lined or unlined, permanent pit that is not permitted by or registered with the division on or by June 16, 2008. An operator shall close an existing, lined or unlined, permanent pit that is not permitted by or registered with the division within six months after June 16, 2008.~~

~~(3) An operator shall close an existing unlined temporary pit within three months after June 16, 2008.~~

~~(4) An operator shall close an existing below grade tank that does not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC or is not included in Paragraph (5) of Subsection I of 19.15.17.11 NMAC within five years after June 16, 2008, if not retrofitted to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC.~~

~~(5) An operator shall close any other permitted permanent pit within 60 days of cessation of operation of the permanent pit in accordance with a closure plan that the environmental bureau in the division's Santa Fe office approves.~~

(6) An operator shall close any other permitted temporary pit within six months from the date that the operator releases the drilling or work over rig. The appropriate division district office may grant an extension not to exceed three months.

B. Closure methods for temporary pits. The operator of a temporary pit shall remove all liquids from the temporary pit prior to closure and dispose of the liquids in a division-approved facility or recycle, reuse or reclaim the liquids in a manner that the appropriate division district office approves. The operator shall close the temporary pit by one of the following methods.

~~(1) Waste excavation and removal.~~

(2) On-site burial. The operator shall demonstrate and comply with the siting requirements in Subsection C of 19.15.17.10 NMAC and the closure requirements and standards of Subsection F of 19.15.17.13 NMAC if the proposed closure method of a temporary pit involves on-site burial.

F. On-site closure methods. The following closure requirements and standards apply if the operator proposes a closure method for a ~~drying pad associated with a closed-loop system or a~~ temporary pit pursuant to Paragraph (2) of Subsection D of 19.15.17.13 NMAC or Paragraph (2) of Subsection B of 19.15.17.13 NMAC that involves on-site burial, or an alternative closure method pursuant to Paragraph (3) of Subsection D of 19.15.17.13 NMAC or Paragraph (3) of Subsection B of 19.15.17.13 NMAC and Subsection B of 19.15.17.15 NMAC.

Elm Ridge Exploration Company, LLC
Bisti Gallup 20 #2 temporary pit
660' FNL & 1980' FEL Sec. 20, T. 25 N., R. 12 W.
San Juan County, New Mexico
API #30-045-33944

PAGE 10

(1) General requirements.

(a) Any proposed on-site closure method shall comply with the siting criteria specified in Subsection C of 19.15.17.10 NMAC.

(b) The operator shall provide the surface owner notice of the operator's proposal of an on-site closure method. The operator shall attach the proof of notice to the permit application.

(c) The operator shall comply with the closure requirements and standards of Paragraphs (2) and (3), as applicable, of Subsection F of 19.15.17.13 NMAC if the proposed closure method for a drying pad associated with a closed-loop system or for a temporary pit involves on-site burial pursuant to Paragraph (2) of Subsection D of 19.15.17.13 NMAC or Paragraph (2) of Subsection B of 19.15.17.13 NMAC, or involves an alternative closure method pursuant to Paragraph (3) of Subsection D of 19.15.17.13 NMAC or Paragraph (3) of Subsection B of 19.15.17.13 NMAC and Subsection B of 19.15.17.15 NMAC.

(d) The operator shall place a steel marker at the center of an on-site burial. The steel marker shall be not less than four inches in diameter and shall be cemented in a three-foot deep hole at a minimum. The steel marker shall extend at least four feet above mean ground level and at least three feet below ground level. The operator 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 shall be welded, stamped or otherwise permanently engraved into the metal of the steel marker. A person shall not build permanent structures over an on-site burial without the appropriate division district office's written approval. A person shall not remove an on-site burial marker without the division's written permission.

If the well goes into production, then an alternate interim marking system will be used to allow for safer and more efficient operations. A minimum 4" O. D. steel pipe will be set at least 36" deep at the center of the pit. A threaded collar will be on the top of the pipe. A minimum 12" x 12" steel plate will be welded atop the threaded collar. Top of the plate will be flush with ground level. The same information listed in the preceding paragraph will be welded onto the plate, plus a notation that it marks an on site buried temporary pit. Upon plugging the well, the plate will be removed and the pit marked as described in the preceding paragraph.

(e) The operator shall report the exact location of the on-site burial on

Elm Ridge Exploration Company, LLC
Bisti Gallup 20 #2 temporary pit
660' FNL & 1980' FEL Sec. 20, T. 25 N., R. 12 W.
San Juan County, New Mexico
API #30-045-33944

PAGE 11

form C-105 filed with the division.

(f) The operator shall file a deed notice identifying the exact location of the on-site burial with the county clerk in the county where the on-site burial occurs.

(2) In-place burial.

(a) Where the operator meets the siting criteria specified in Paragraphs (2) or (3) of Subsection C of 19.15.17.10 NMAC and the applicable waste criteria specified in Subparagraphs (c) or (d) of Paragraph (2) of Subsection F of 19.15.17.13 NMAC, an operator may use in-place burial (burial in the existing temporary pit) for closure of a temporary pit or bury the contents of a drying pad associated with a closed-loop system in a temporary pit that the operator constructs in accordance with Paragraphs (1) through (6) and (10) of Subsection F of 19.15.17.11 NMAC for closure of a drying pad associated with a closed loop system.

(b) ~~Prior to closing an existing temporary pit or to placing the contents from a drying pad associated with a closed-loop system into a temporary pit that the operator constructs for disposal,~~ the operator shall stabilize or solidify the contents to a bearing capacity sufficient to support the temporary pit's final cover. The operator shall not mix the contents with soil or other material at a mixing ratio of greater than 3:1, soil or other material to contents.

(c) Where ground water will be between 50 and 100 feet below the bottom of the buried waste, the operator shall collect at a minimum, a five point, composite sample of the ~~contents of the drying pad associated with a closed-loop system or the~~ contents of a temporary pit after treatment or stabilization, if treatment or stabilization is required, to demonstrate that benzene, as determined by EPA SW-846 method 8021 B or 8260B, does not exceed 0.2 mg/kg; total BTEX, as determined by EPA SW-846 method 8021 B or 8260B, does not exceed 50 mg/kg; TPH, as determined by EPA SW-846 method 418.1 or other EPA method approved that the division approves, does not exceed 2500 mg/kg; the GRO and DRO combined fraction, as determined by EPA SW-846 method 8015M, does not exceed 500 mg/kg; and chlorides, as determined by EPA method 300.1, do not exceed 500 mg/kg or the background concentration, whichever is greater. The operator may collect the composite sample prior to treatment or stabilization to demonstrate that the contents do not exceed these concentrations. However, if the contents collected prior to treatment or stabilization exceed the specified concentrations the operator shall collect a second five point, composite sample of the contents after

treatment or stabilization to demonstrate that the contents do not exceed these concentrations.

(d) Where the ground water will be more than 100 feet below the bottom of the buried waste, the operator shall collect at a minimum, a five point, composite sample of the contents of the ~~drying pad associated with a closed-loop system or the contents of a temporary pit~~ after treatment or stabilization, if treatment or stabilization is required, to demonstrate that benzene, as determined by EPA SW-846 method 8021B or 8260B, does not exceed 0.2 mg/kg; total BTEX, as determined by EPA SW-846 method 8021B or 8260B, does not exceed 50 mg/kg; the GRO and DRO combined fraction, as determined by EPA SW-846 method 8015M, does not exceed 500 mg/kg; TPH, as determined by EPA method 418.1 or other EPA method that the division approves, does not exceed 2500 mg/kg; and chlorides, as determined by EPA method 300.1, do not exceed 1000 mg/kg or the background concentration, whichever is greater. The operator may collect the composite sample prior to treatment or stabilization to demonstrate that the contents do not exceed these concentrations. However, if the contents collected prior to treatment or stabilization exceed the specified concentrations the operator shall collect a second five point, composite sample of the contents after treatment or stabilization to demonstrate that the contents do not exceed these concentrations.

(e) Upon closure of a temporary pit, ~~or closure of a temporary pit that the operator constructs for burial of the contents of a drying pad associated with a closed-loop system,~~ the operator shall cover the geomembrane lined, filled, temporary pit with compacted, non-waste containing, earthen material; construct a division-prescribed soil cover; recontour and revegetate the site. The division-prescribed soil cover, recontouring and revegetation shall comply with Subsections G, H and I of 19.15.17.13 NMAC.

G. Reclamation of pit locations, on-site burial locations and drying pad locations.

(1) Once the operator has closed a pit or trench or is no longer using a drying pad, below-grade tank or an area associated with a closed-loop system, pit, trench or below-grade tank, the operator shall reclaim the pit location, drying pad location, below-grade tank location or trench location and all areas associated with the closed-loop system, pit, trench or below-grade tank including associated access roads to a safe and stable condition that blends with the surrounding undisturbed area. The operator shall 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, recontour the location and associated areas to a contour that approximates the original contour and blends with the surrounding topography and revegetate according to Subsection I of 19.15.17.13 NMAC.

(2) The operator may propose an alternative to the revegetation requirement if the operator demonstrates that the proposed alternative effectively prevents erosion, and protects fresh water, human health and the environment. The proposed alternative shall be agreed upon by the surface owner. The operator shall submit the proposed alternative, with written documentation that the surface owner agrees to the alternative, to the division for approval.

H. Soil cover designs.

(1) The soil cover for closures where the operator has removed the pit contents or remediated the contaminated soil to the division's satisfaction shall consist of the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.

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

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

I. Re-vegetation.

(1) The first growing season after the operator closes a pit or trench or is no longer using a drying pad, below-grade tank or an area associated with a closed-loop system, pit or below-grade tank including access roads, the operator shall seed or plant the disturbed areas.

(2) The operator shall accomplish seeding by drilling on the contour whenever practical or by other division-approved methods. The operator shall obtain vegetative cover that equals 70% of the native perennial vegetative cover (un-impacted by overgrazing, fire or other intrusion damaging to native vegetation) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover through two successive growing seasons. During the two growing seasons that prove viability, there shall be no artificial irrigation of the vegetation.

Elm Ridge Exploration Company, LLC
Bisti Gallup 20 #2 temporary pit
660' FNL & 1980' FEL Sec. 20, T. 25 N., R. 12 W.
San Juan County, New Mexico
API #30-045-33944

PAGE 14

(3) The operator shall repeat seeding or planting until it successfully achieves the required vegetative cover.

(4) When conditions are not favorable for the establishment of vegetation, such as periods of drought, the division may 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.

(5) The operator shall notify the division when it has seeded or planted and when it successfully achieves re-vegetation.

J. Closure notice.

(1) The operator shall notify the surface owner by certified mail, return receipt requested, that the operator plans to close a temporary pit, a permanent pit, a below-grade tank or where the operator has approval for on-site closure. Evidence of mailing of the notice to the address of the surface owner shown in the county tax records is sufficient to demonstrate compliance with this requirement.

(2) The operator of a temporary pit or below-grade tank or an operator who is approved for on-site closure shall notify the appropriate division district office verbally or by other means at least 72 hours, but not more than one week, prior to any closure operation. The notice shall include the operator's name and the location to be closed by unit letter, section, township and range. If the closure is associated with a particular well, then the notice shall also include the well's name, number and API number.

K. Closure report. Within 60 days of closure completion, the operator shall submit a closure report on form C-144, with necessary attachments to document all closure activities including sampling results; information required by 19.15.17 NMAC; a plot plan; and details on back-filling, capping and covering, where applicable. In the closure report, the operator shall certify that all information in the report and attachments is correct and that the operator has complied with all applicable closure requirements and conditions specified in the approved closure plan. If the operator used a temporary pit, the operator shall provide a plat of the pit location on form C-105 within 60 days of closing the temporary pit.

The operator shall file a deed notice identifying the exact location of the on-site burial with the county clerk in the county where the on-site burial occurs.

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: Range: Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) ☐ Non-Domestic ☐ Domestic ☒ All

POD / SURFACE DATA REPORT 09/13/2008

(acre ft per annum)			(quarters are 1=NW 2=NE 3=SW 4=SE)										UTM are in Meters)			Start	Finish	Depth	Depth (in		
DB File Nbr	Use	Diversion	Owner	POD Number	Source	Tw	Rng	Sec	q	q	q	X Zone	Y are in Feet X	Y	UTM_Zone	Easting	Northing	Date	Date	Well	Water
RG 21872	DOM	0	LILA C. ROMERO	RG 21872		25N	12W	35							13	223514	4028055				
RG 37972	DOM	0	PATRICIA E. SOKOLL	RG 37972		25N	12W	24				C	689000	1959500	13	445425	4026680				
RG 43582	DOM	3	BERNICE F. CORDOVA	RG 43582	Shallow	25N	12W	23							13	223616	4031274	05/01/1985	05/01/1985	50	8
RG 46561	DOM	0	SHIRLEY GORMAN	RG 46561		25N	12W	30							13	217131	4029874				
RG 47243	DOM	3	JOSEPH & ELAINE LOVATO	RG 47243	Shallow	25N	12W	12	4						13	225728	4034012	05/18/1987	05/18/1987	65	18
RG 49046	DOM	3	EDDIE BERG	RG 49046	Shallow	25N	12W	22							13	222007	4031325	04/22/1988	04/25/1988	40	8
RG 61107	DOM	3	GLEN D. WEATHERS	RG 61107	Shallow	25N	12W	27	3	3		C	678500	1958950	13	442224	4026554	12/15/1994	12/15/1994	130	50
RG 63120	DOM	3	CHRISTINA TRUJILLO	RG 63120	Shallow	25N	12W	31				C	689100	1949800	13	445418	4023724	10/03/1995	10/03/1995	60	30
RG 76392	DOM	3	CYNTHIA AGUIRRE	RG 76392	Shallow	25N	12W	11				C	684250	1972400	13	444029	4030629	10/25/2001	10/25/2001	102	19
SJ 00079	OIL	0	SHELL OIL COMPANY	SJ 00079	Shallow	25N	12W	13	4						13	225677	4032403		03/27/1957	2550	
SJ 01716	STK	15	U.S. DEPT. OF INTERIOR	SJ 01716	Shallow	25N	12W	01	3	2					13	225189	4035835	06/20/1963	02/05/1964	403	210
SP 02870 25	IRR	78.42	BLOOMFIELD IRRIGATION DISTRICT	SP 02870 25C		25N	12W	24	3	4					13	225023	4030606				
SP 02870 25A	IRR	5.4	ANN OSBURN	SP 02870 25C		25N	12W	24	3	4					13	225023	4030606				
SP 02870 25B	IRR	0	D.J. ELKINS	SP 02870 25C		25N	12W	24	3	4					13	225023	4030606				
SP 02870 25BA	IRR	0	MAX D. KENNEMER TRUST	SP 02870 25C		25N	12W	24	3	4					13	225023	4030606				
SP 02870 25BB	IRR	0	CITY OF FARMINGTON	SP 02870 25C		25N	12W	24	3	4					13	225023	4030606				
SP 02870 25C	IRR	8.76	MAX D. KENNEMER TRUST	SP 02870 25C		25N	12W	24	3	4					13	225023	4030606				
SP 02870 25D	IRR	3	CECIL C. & GLADYS CAST TRUST	SP 02870 25C		25N	12W	24	3	4					13	225023	4030606				
SP 02870 25E	IRR	6	DOUGLAS JAMES BURGER	SP 02870 25C		25N	12W	24	3	4					13	225023	4030606				
SP 02870 25F	IRR	10.5	ROBIN C. PRICE	SP 02870 25C		25N	12W	24	3	4					13	225023	4030606				
SP 02870 25G	IRR	41.1	LILLIE MAE JOHNSON	SP 02870 25C		25N	12W	24	3	4					13	225023	4030606				
SP 02870 25H	IRR	0	HENRY JOHN NOWAKOWSKI	SP 02870 25C		25N	12W	24	3	4					13	225023	4030606				
SP 02870 25I	IRR	4.65	MARTIN SALAZAR	SP 02870 25C		25N	12W	24	3	4					13	225023	4030606				
SP 02870 25L	IRR	1.8	JUSTIN L. KIDDOO	SP 02870 25C		25N	12W	24	3	4					13	225023	4030606				
SP 02870 25M	IRR	1.5	ZANE G. LESLIE, JR.	SP 02870 25C		25N	12W	24	3	4					13	225023	4030606				
SP 02870 25N	IRR	0	CAROLYN BETH MCKEE	SP 02870 25C		25N	12W	24	3	4					13	225023	4030606				
SP 02870 25O	IRR	0	AURORA LEE CHRISTENSEN	SP 02870 25C		25N	12W	24	3	4					13	225023	4030606				

Record Count: 27

EXHIBIT A

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 25N Range: 13W Sections: _____

NAD27 X: _____ Y: _____ Zone: _____ Search Radius: _____

County: _____ Basin: _____ Number: _____ Suffix: _____

Owner Name: (First) _____ (Last) _____ ☐ Non-Domestic ☐ Domestic ☒ All

POD / SURFACE DATA REPORT 09/13/2008

DB File Nbr	Use	Diversions	Owner	POD Number	Source	Tws	Rng	Sec	q	q	q	Zone	X	Y	UTM Zone	Easting	Northing	Start Date	Finish Date	Depth Well	Depth (in ft) Water
RG 20770	DOM	3	ELMER W. SHUPE	RG 20770	Shallow	25N	13W	20							13	209136	4031751	04/17/1972	04/20/1972	85	60
RG 22050	DOM	3	ERNEST GONZALES	RG 22050	Shallow	25N	13W	18							13	207390	4033423	11/08/1972	11/11/1972	30	20
RG 22330	SAN	0	LOCH MARKETING CO.	RG 22330		25N	13W	19							13	207332	4031812				
RG 23347	DOM	3	PILBERT E. & ESTHER F VIGIL	RG 23347	Shallow	25N	13W	19							13	207332	4031812	08/14/1973	08/21/1973	63	52
RG 31138	DOM	3	STEVE & BETTY TRUJILLO	RG 31138	Shallow	25N	13W	18							13	207390	4033423	10/30/1978	11/02/1978	60	20
RG 31290	DOM	3	FREDERICK T. KACKLEY	RG 31290	Shallow	25N	13W	18							13	207390	4033423	09/20/1978	09/22/1978	62	
RG 33272	DOM	0	MRS. FRANK ESQUIBEL	RG 33272		25N	13W	18	3						13	206988	4033021				
RG 33425	DOM	3	RAYMOND PIPER	RG 33425	Shallow	25N	13W	20							13	209136	4031751	10/27/1979	10/30/1979	100	30
RG 33564	DOM	3	JUAN M. FERNANDEZ	RG 33564	Shallow	25N	13W	20							13	209136	4031751	03/08/1980	03/13/1980	100	40
RG 33723	DOM	3	FRANCELLA DEVIS	RG 33723	Shallow	25N	13W	05	1						13	208921	4036984	05/28/1980	06/06/1980		10
RG 33951	DOM	0	SIMON G. GONZALES	RG 33951		25N	13W	05							13	209297	4036582				
RG 34464	DOM	0	FELIPE DURAN	RG 34464		25N	13W	21							13	210745	4031698				
RG 34752	DOM	0	ALMAN H. VIETHS	RG 34752		25N	13W	20	3						13	208734	4031349				
RG 34799	DOM	3	EDD WETSEL	RG 34799	Shallow	25N	13W	05	4						13	209699	4036153	07/13/1981	07/30/1981	95	6
RG 35839	DOM	3	MYRON E. PRICE	RG 35839	Shallow	25N	13W	19	4						13	207930	4031376	08/24/1981	08/25/1981	95	60
RG 36707	DOM	3	MARK HIRSCH	RG 36707	Shallow	25N	13W	21	3						13	210343	4031296	08/13/1981	08/14/1981	120	80
RG 38021	DOM	3	ANTONIO B. RAEL	RG 38021	Shallow	25N	13W	17	4						13	209592	4032933	06/04/1982	06/05/1982	63	15
RG 38145	DOM	0	JANET TRUJILLO	RG 38145		25N	13W	08	2						13	209672	4035348				
RG 38411	DOM	0	DOCETIO CASADOS	RG 38411		25N	13W	12							13	215678	4034757				
RG 39398	DOM	0	RICHARD C. TRUJILLO	RG 39398		25N	13W	21							13	210745	4031698				
RG 40963 EXPL	OBS	3	TOWN OF TAOS	RG 40963 ECPL	Shallow	25N	13W	08	1	1					13	208680	4035576	03/02/1984	03/10/1984	250	11
RG 65826 CLW	DOM	0	E. ANISETO ANGLADA	RG 65826 CLW		25N	13W	22				C	702200	1962400	13	449459	4027512				

Record Count: 22

EXHIBIT A

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 24N Range: 12W Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) ☐ Non-Domestic ☐ Domestic ☒ All

POD / SURFACE DATA REPORT 09/13/2008

DB File Nbr	(acre ft per annum) Use Diversion Owner	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are biggest to smallest)				X Y are in Feet		UTM are in Meters			Start Date	Finish Date	Depth Well	Depth (in Water)			
			Source	Tws	Rng	Sec	q	q	q	Zone	X					Y	UTM_Zone	Easting	Northing
RG 33593	DOM 3 RICHARD E. COCA	RG 33593	Shallow	24N	12W	06	4					13	216282	4026140	11/25/1980	12/01/1980	155	100

Record Count: 1

EXHIBIT A

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 24N Range: 13W Sections: 1

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

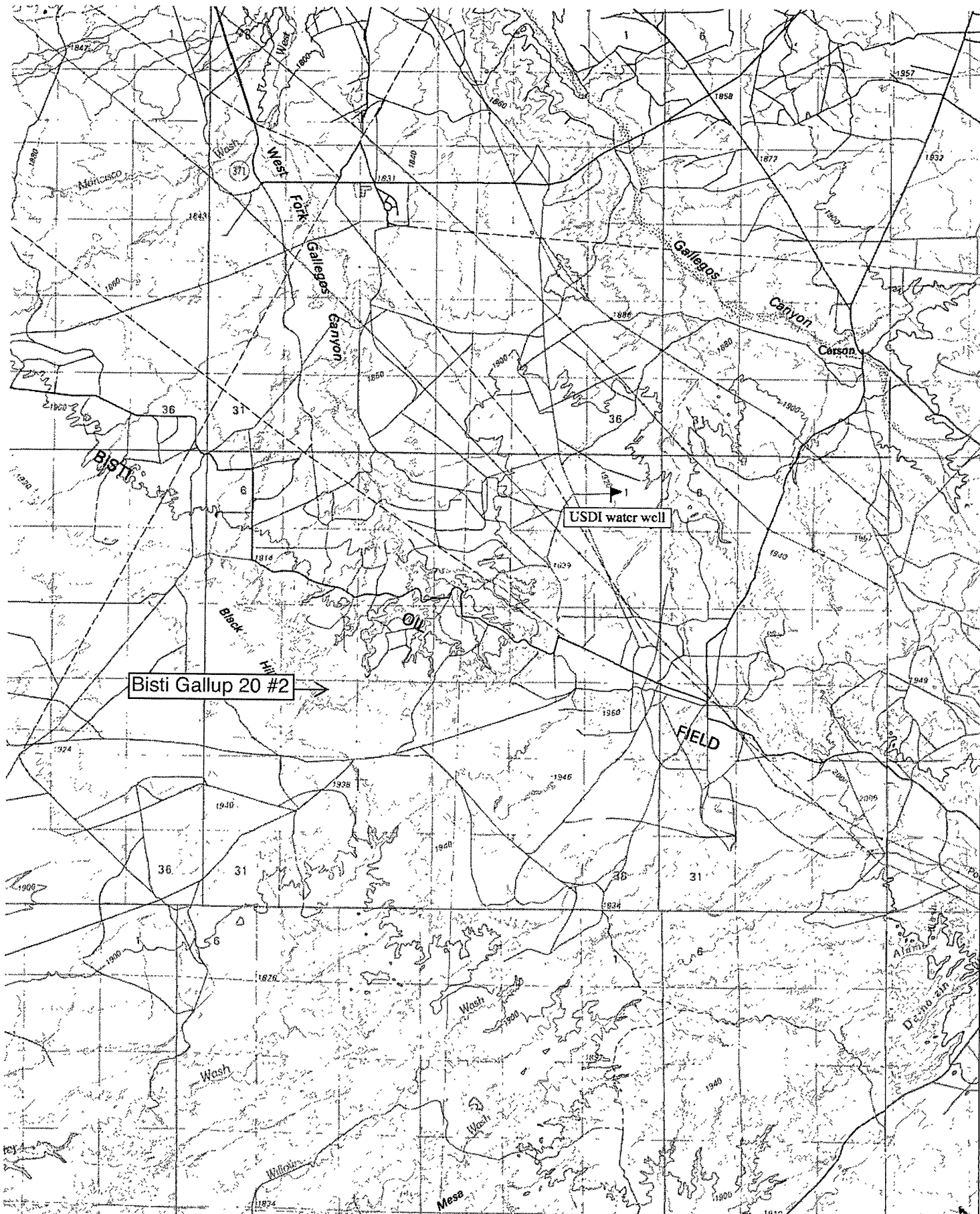
Owner Name: (First) (Last) ☐ Non-Domestic ☐ Domestic ☒ All

POD / SURFACE DATA REPORT 09/13/2008

(acre ft per annum)				(quarters are 1=NN 2=NE 3=SW 4=SE)												(quarters are biggest to smallest)				X Y are in Feet			UTM are in Meters)			Start	Finish	Depth	Depth (in f
DB File Nbr	Use	Diversion	Owner	POD Number	Source	Tws	Rng	Sec	q	q	q	Zone	X	Y	UTM_Zone	Easting	Northing	Date	Date	Well	Water								
RG 34744	DOM	0	TILIO (MRS) ROMERO	RG 34744		24N	13W	06							13	207159	4027088												
RG 42110	DOM	0	MELVIN E. ROMERO	RG 42110		24N	13W	07							13	207100	4025479												
RG 43738	DOM	3	TOBY MIERA	RG 43738	Shallow	24N	13W	19							13	206987	4022260	06/11/1985	06/11/1985	70	15								
SJ 01794	MON	0	SUNBELT MINING COMPANY, INC.	SJ 01794	Shallow	24N	13W	32	2	2	1				13	208733	4019661	01/16/1983	11/16/1983	221									
SJ 03815	STK	3	ANDREW A. WERITO	SJ 03815 POD1		24N	13W	12	2	4		262365	1940639		13	215372	4025538												
SP 04025	MIN	0	STATE OF NEW MEXICO	SP 04025 1		24N	13W	32	3	2	4				13	208105	4018685												
				SP 04025 2		24N	13W	32	4	1	3				13	208306	4018671												
				SP 04025 3		24N	13W	32	4	1	4				13	208506	4018671												

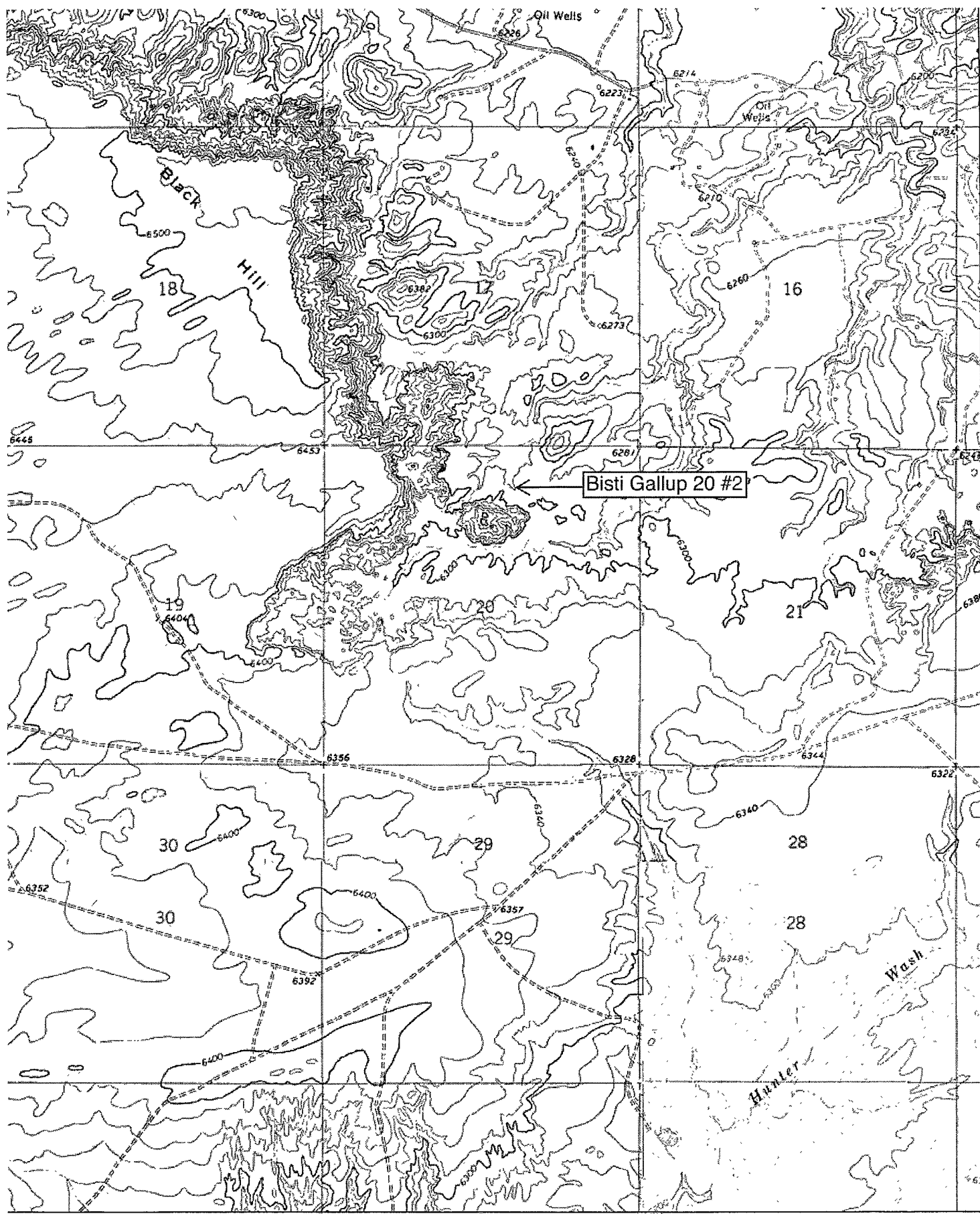
Record Count: 8

EXHIBIT A



Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)

EXHIBIT A

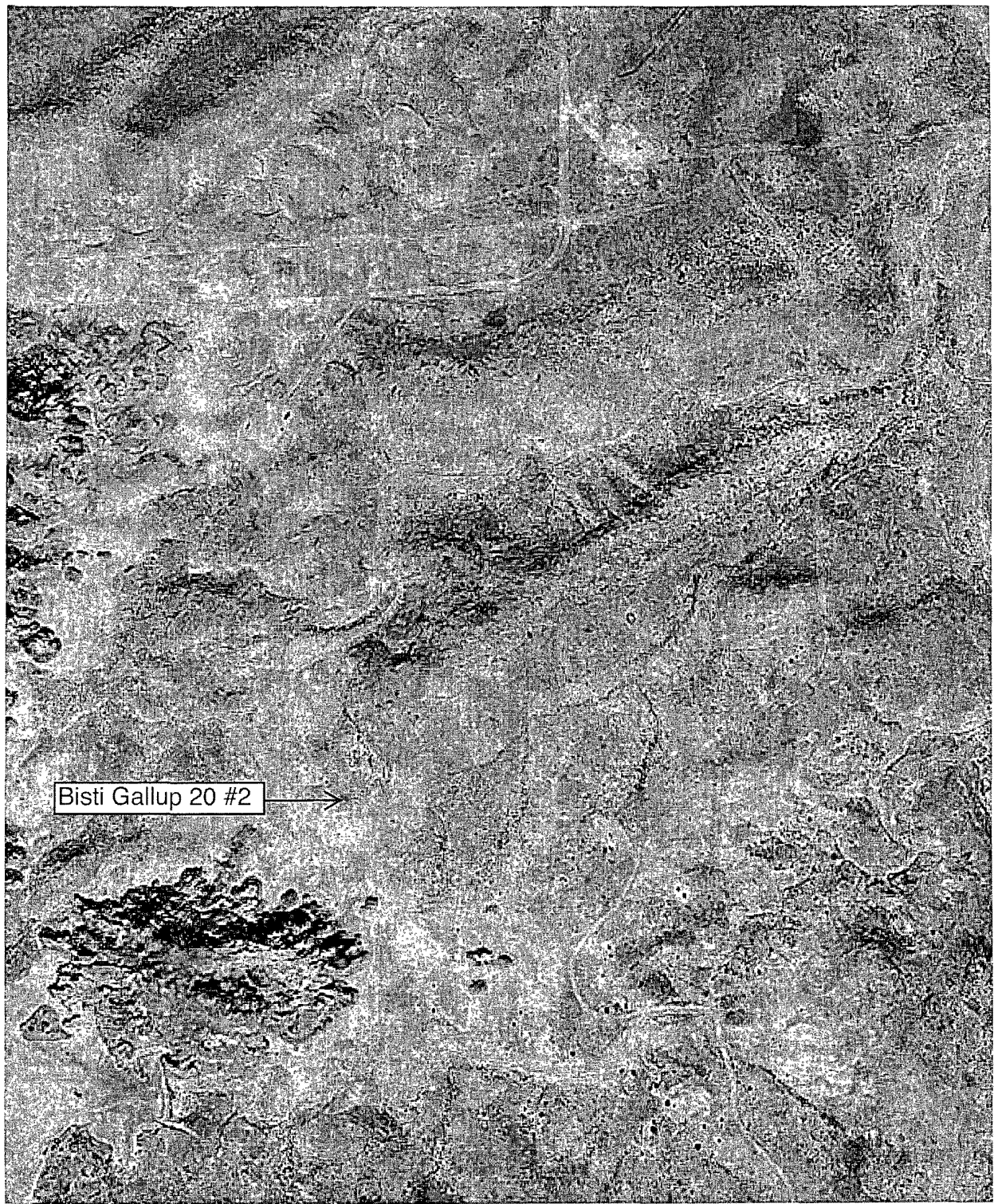


N
MN
11°

0 1000 FEET 0 500 1000 METERS
MILE

Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)

EXHIBIT B



0 100 200M

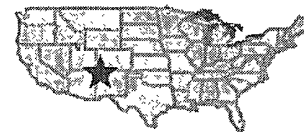
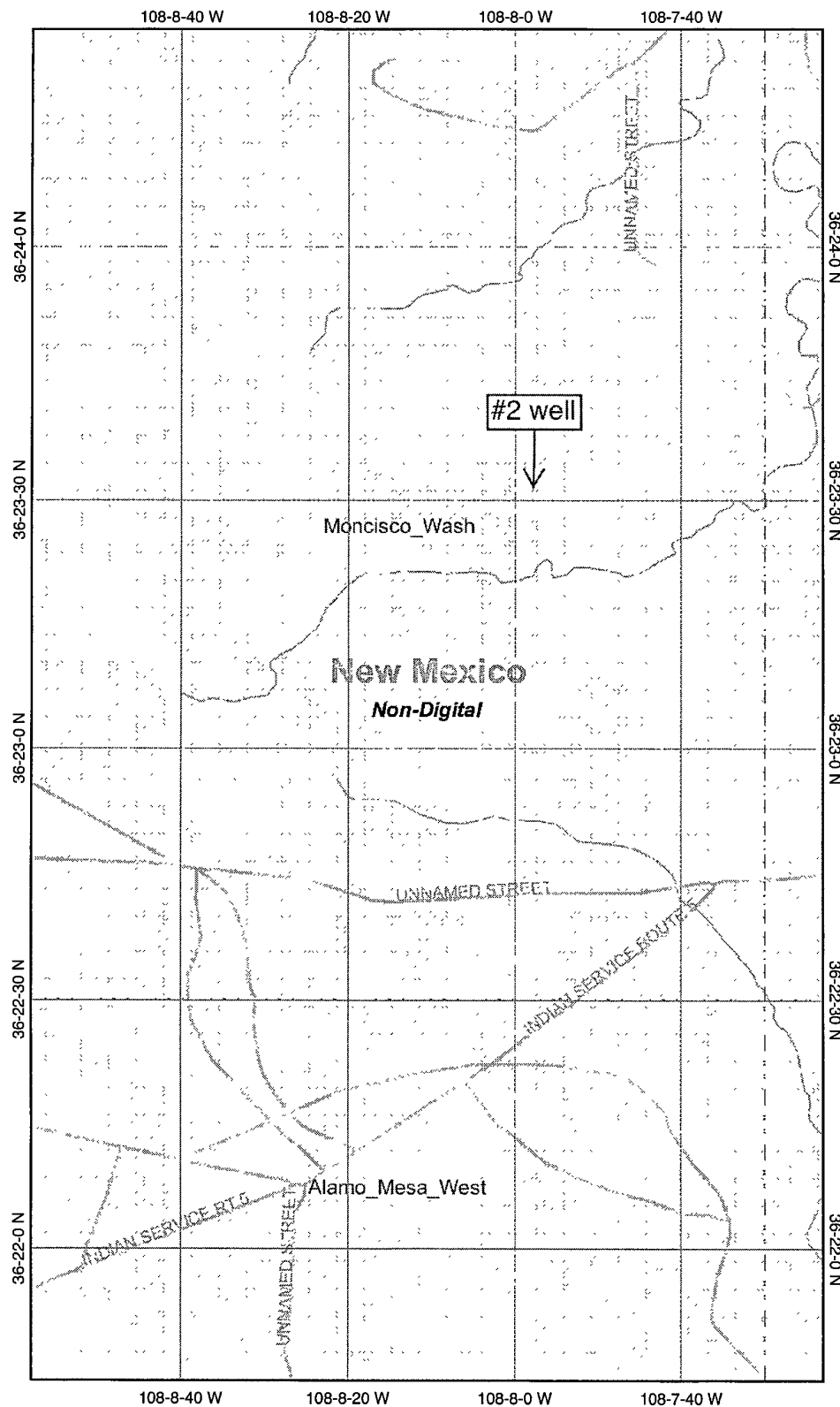
0 100 200yd

Image courtesy of the U.S. Geological Survey

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EXHIBIT C

Bisti Gallup 20 wells wetland map (none)



Legend

- Interstate
- Major Roads
- Other Road
- Interstate
- State highway
- US highway
- Roads
- Cities
- USGS Quad Index 24K
- Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan
- NHD Streams
- Counties 100K
- States 100K
- South America
- North America

EXHIBIT D



Scale: 1:24,000

Map center: 36° 23' 5" N, 108° 8' 11" W

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

MMQonline Public Version

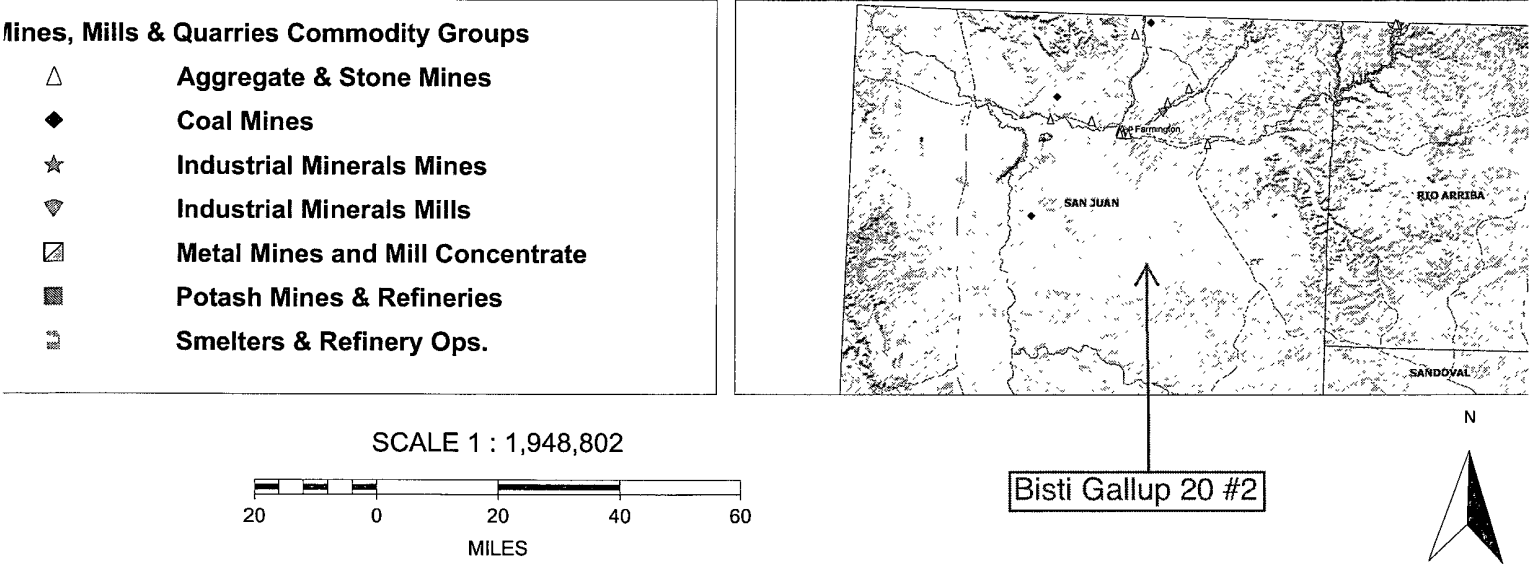
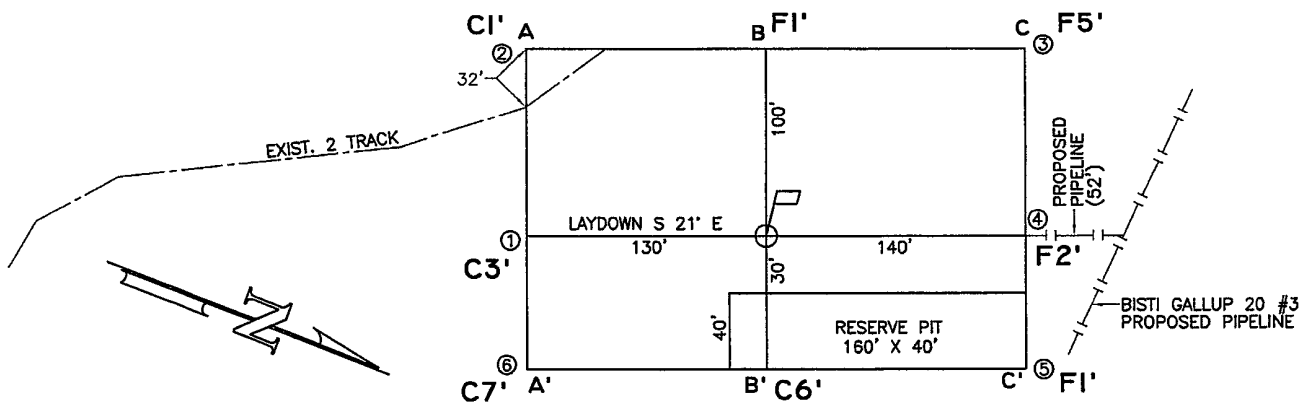


EXHIBIT E



ELEVATION A-A'

6310	.	.	.	.	.	.	.	.	.
6300	.	.	.	.	.	.	.	.	.
6290	.	.	.	.	.	.	.	.	.
6280	.	.	.	.	.	.	.	.	.
6270	.	.	.	.	.	.	.	.	.

B-B'

6310	.	.	.	.	.	.	.	.	.
6300	.	.	.	.	.	.	.	.	.
6290	.	.	.	.	.	.	.	.	.
6280	.	.	.	.	.	.	.	.	.
6270	.	.	.	.	.	.	.	.	.

C-C'

6310	.	.	.	.	.	.	.	.	.
6300	.	.	.	.	.	.	.	.	.
6290	.	.	.	.	.	.	.	.	.
6280	.	.	.	.	.	.	.	.	.
6270	.	.	.	.	.	.	.	.	.

EXHIBIT F

LEASE: BISTI GALLUP 20 #2
 FOOTAGE: 660' FNL, 1980' FEL
 SEC. 20 TWN. 25 N RNG. 12 W N.M.P.M.
 LATITUDE: 36.392113° LONGITUDE: 108.132504°
 ELEVATION: 6291

ELM RIDGE EXPLORATION
DALLAS, TEXAS

SURVEYED: 3/01/06	REV. DATE:	APP. BY R.P.
DRAWN BY: A.D.	DATE DRAWN: 3/06/05	FILE NAME: 6540C01



P.O. BOX 3651
FARMINGTON, NM 87499
OFFICE: (505) 334-0408

Elm Ridge Exploration Company, LLC
Bisti Gallup 20 #2
660' FNL & 1980' FEL
Sec. 20, T. 25 N., R. 12 W.
San Juan County, New Mexico

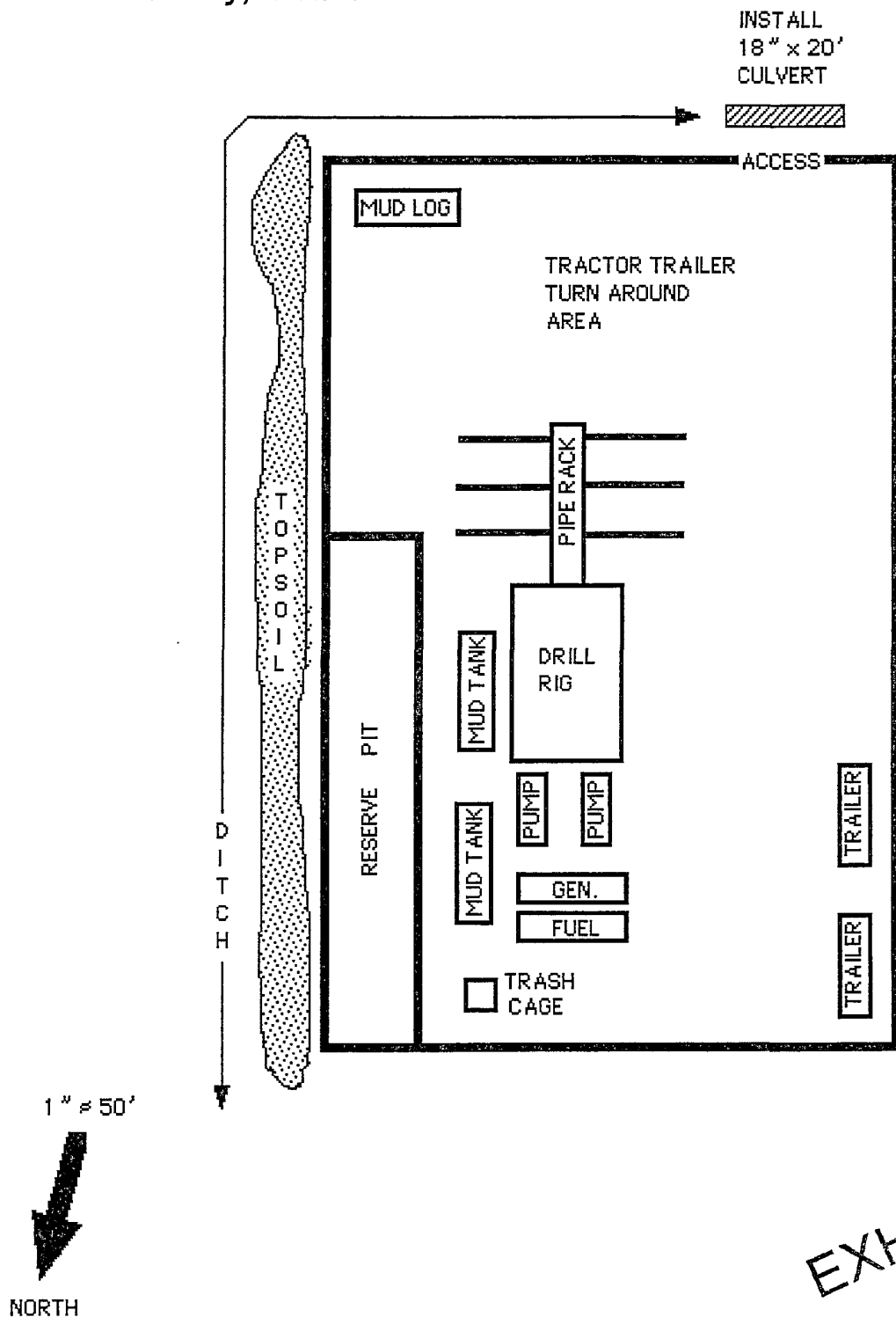
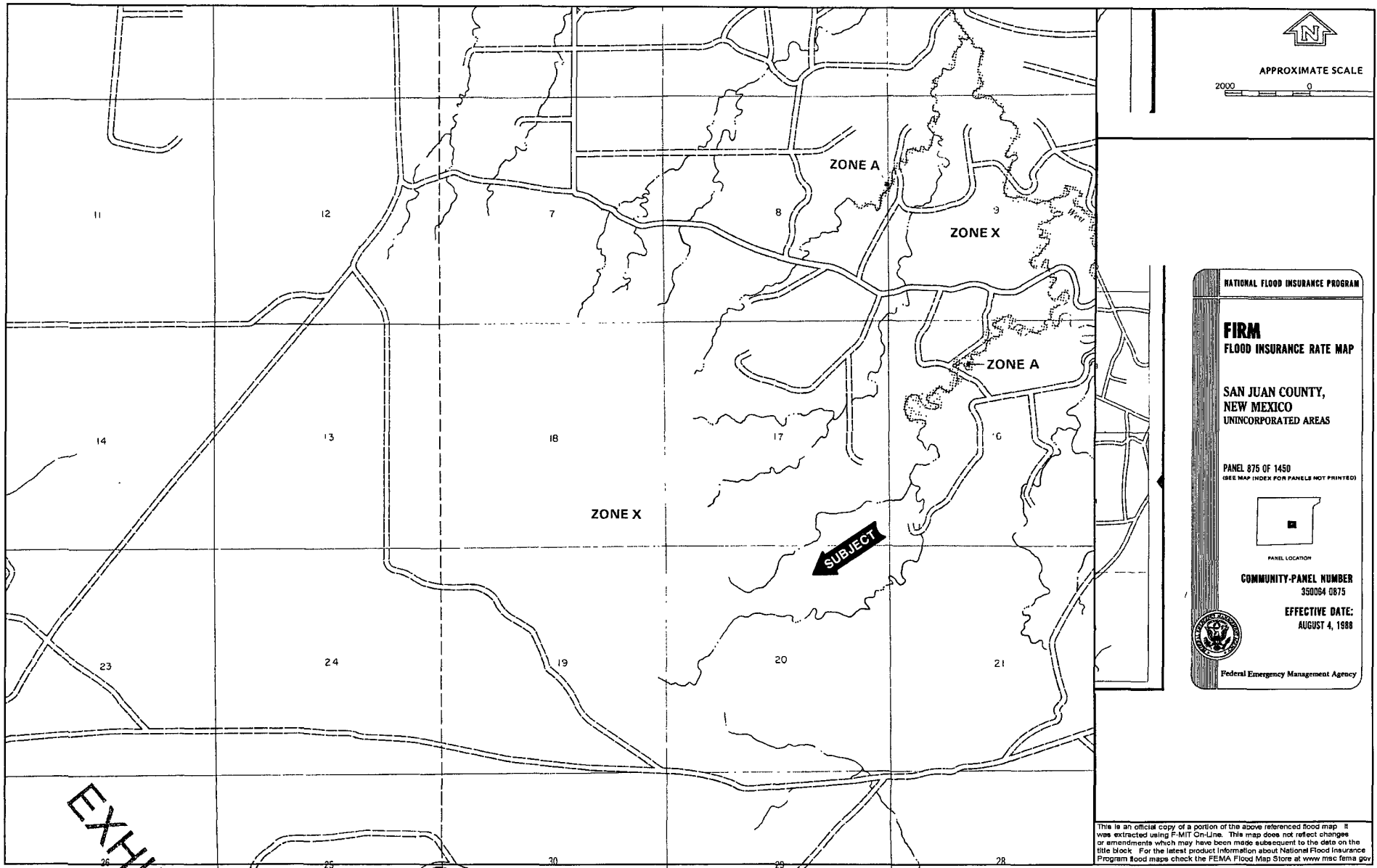


EXHIBIT F



APPROXIMATE SCALE

2000 0

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

SAN JUAN COUNTY,
NEW MEXICO
UNINCORPORATED AREAS

PANEL 875 OF 1450
(SEE MAP INDEX FOR PANELS NOT PRINTED)



PANEL LOCATION

COMMUNITY-PANEL NUMBER
350084 0875

EFFECTIVE DATE:
AUGUST 4, 1988



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

DISTRICT I
P.O. Box 1980, Hobbs, N.M. 88241-1980

DISTRICT II
811 South First, Artesia, N.M. 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV
2040 South Pacheco, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, NM 87504-2088

Form C-102
Revised February 21, 1994

Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number		2 Pool Code 5890		3 Pool Name BISTI LOWER-GALLUP	
4 Property Code		5 Property Name BISTI GALLUP 20			6 Well Number 2
7 OGRID No. 149052		8 Operator Name ELM RIDGE EXPLORATION			9 Elevation 6291

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	20	25 N	12 W		660	NORTH	1980	EAST	SAN JUAN

11 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
12 Dedicated Acres 80		13 Joint or Infill		14 Consolidation Code		15 Order No.			

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

16 S 89°49'23" E 2634.23'		S 89°21'16" E 660'		pit center N 36.392177° W 108.132481°		17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. Signature Brian Wood Printed Name BRIAN WOOD Title CONSULTANT Date SEPT. 23, 2006	
2640.72'		LAT. 36.392113° LONG. 108.132504° NAD 83		1980'		2621.48'	
N 0°09'08" E		SECTION 20.				S 0°06'52" W	
2640.72'						2640.19'	
N 0°09'08" E						S 0°12'56" W	
N 89°48'12" W				5272.70'		6846 PROFESSIONAL SURVEYOR Certificate Number	

EXHIBIT H

Elm Ridge Exploration Company, LLC
Bisti Gallup 20 #2
660' FNL & 1980' FEL
Sec. 20, T. 25 N., R. 12 W.
San Juan County, New Mexico

PAGE 7

4. PROPOSED PRODUCTION FACILITIES (See PAGES 12 & 13)

Production facilities will include a pipeline, separator, dehydrator, meter run, and tank battery. All surface equipment will be installed on the pad and painted a flat Carlsbad tan color.

Elm Ridge will lay a polyethylene ≤ 4 " O. D. natural gas pipeline north 52.1' to an Elm Ridge pipeline. The new pipeline will operate at ≤ 100 psi, be tested to ≥ 150 psi, and will be buried ≈ 36 " deep. Maximum disturbed width will not exceed 40'.

5. WATER SUPPLY

Water will be trucked from the Hill Top Store.

6. CONSTRUCTION MATERIALS & METHODS

The top 6" of soil will be stripped and piled east of the pad. A diversion ditch will be cut south of the pad and east of the pile. A minimum 12 mil plastic liner will be installed in the reserve pit.

7. WASTE DISPOSAL

The reserve pit will be fenced sheep tight on 3 sides with woven wire fence topped with barbed wire. The fourth side will be fenced once the rig moves off. The fence will be kept in good repair while the pit dries. Once dry, contents of the reserve pit will be buried in place.

All trash will be placed in a portable trash cage and hauled to the county landfill. Human waste will be disposed of in chemical toilets. Toilet contents will be hauled to a state approved dump station off the reservation.



Elm Ridge Exploration Company, LLC
Bisti Gallup 20 #2
660' FNL & 1980' FEL
Sec. 20, T. 25 N., R. 12 W.
San Juan County, New Mexico

PAGE 8

8. ANCILLARY FACILITIES

There will be no air strip or camp. Camper trailers will be on location for the company man, tool pusher, and mud logger.

9. WELL SITE LAYOUT

See Pages 13 and 14 for drawings of the well pad, cross sections, cut and fill diagrams, reserve pit, trash cage, access road onto the location, parking, living facilities, soil stockpile, and rig orientation.

10. RECLAMATION

Reclamation starts once the reserve pit is dry, at which point it will be back filled. The pad and road will be contoured to a natural shape, slopes will be no steeper than 3:1, topsoil spread evenly over disturbed areas, water bars installed, and disturbed areas ripped or harrowed. BLM's seed mix will be sown. If the well is a producer, then the pipeline, reserve pit, and any other areas not needed for work over will be reclaimed as previously described.

11. SURFACE OWNER

~~All construction will be on lease and on Navajo tribal surface. Tribal Project Review Office phone is (928) 871-6447. Address is P. O. Box 9000, Window Rock, Arizona, 86515.~~

12. OTHER INFORMATION

The nearest hospital is an hour drive away in southwest Farmington.



EXHIBIT I

**United States Department of the Interior**

BUREAU OF INDIAN AFFAIRS
Navajo Region
P.O. Box 1060
Gallup, New Mexico 87305

IN REPLY REFER TO:
Real Estate Services/N425

AUG 29 2007

FILE COPY
Surname
Yalyl 8-28-07
8-28-07

Bureau of Land Management
Farmington Field Office
1235 La Plata Highway, Suite A
Farmington, New Mexico 87401

Dear Sir:

An administrative review has been conducted on the following proposed Application for Permit to Drill (APD) submitted by **Elm Ridge Exploration Company, LLC**.

Bisti Gallup 20 #2, Federal Lease No: NMNM-025448. The proposed oil well is described as 660' FNL / 1980' FEL, located in Section 20, T25N, R12W, San Juan County, New Mexico. Included in the approved disturbance is a well pad containing 1.05 acres, access road and pipeline corridor of 0.57 acres, for a combined total of 1.62 acres, more or less. This location is within the Navajo Trust Lands designated boundaries.

Resolution of the Resources Committee of the Navajo Nation Council No: **RCS-121-06** passed on **September 28, 2006**, authorized the Navajo Nation Land Department to issue consent letters for APD's, Sundry Notices and Construction of Associated Ancillary Facilities. Consent letter dated June 06, 2007 approves the enclosed **Elm Ridge Exploration Company, LLC's, APD**. Please note that the Resources Committee and the Navajo Nation Environmental Protection Agency set specific terms and conditions which must be followed. Other required clearances from the Navajo Nation have been obtained and are on file.

We recommend approval of the above referenced application, provided enclosed Bureau of Indian Affairs and the Navajo Nation stipulations are adhered to and made a part of the drilling plan.

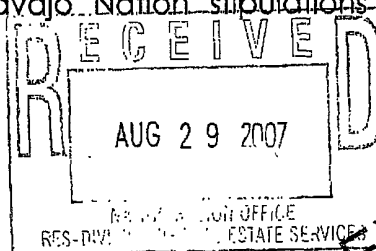


EXHIBIT 1