

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**

755 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.

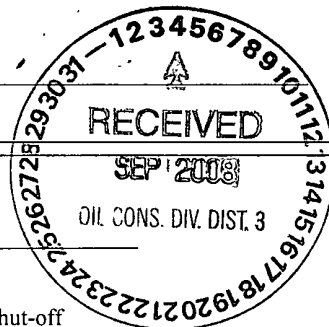
1. Operator: McElvain Oil & Gas Properties, Inc. OGRID #: 22044
Address: 1050 17th Street, Suite 1800, Denver, CO 80265
Facility or well name: Cougar Com 4 #1A
API Number: 30-039-24079 OCD Permit Number: _____
U/L or Qtr/Qtr I 4 Section 4 Township 25N Range 2W County: Rio Arriba
Center of Proposed Design: Latitude 36.4245 N Longitude -107.04921 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 _____ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
☐ String-Reinforced
Liner Seams: ☐ Welded ☐ Factory ☐ Other _____ Volume: _____ 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: 95 bbl Type of fluid: Oil & Water
Tank Construction material: Steel
☒ 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 _____ 4 " Hog wire w/ top rail = 4' _____

7.

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

- ☐ Screen ☐ Netting ☒ Other _____ Expanded Metal _____
- ☐ 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.
- ☐ 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	☐ 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	☐ Yes ☒ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applies to temporary, emergency, or cavitation pits and below-grade tanks) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No ☒ NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applies to permanent pits) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No ☒ 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	☐ 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

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): Deborah K Powell Title: Engineering Tech Supervisor

Signature: Deborah K Powell Date: 9-2-08

e-mail address: DebbyP@McElvain.com Telephone: 303-893-0933

20.

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

OCD Representative Signature: Joseph P. Kelly Approval Date: 6/4/2012

Title: Deputy Oil & Gas Inspector, District #3 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: _____

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO 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 30 - 039 - 24079	² Pool Code 72319	³ Pool Name Blanco Mesa Verde
⁴ Property Code 23816 24760	⁵ Property Name Cougar Com 4	⁶ Well Number 1A
⁷ OGRID No. 22044	⁸ Operator Name McElvain Oil & Gas Properties Inc.	⁹ Elevation 7610 '

¹⁰ Surface Location

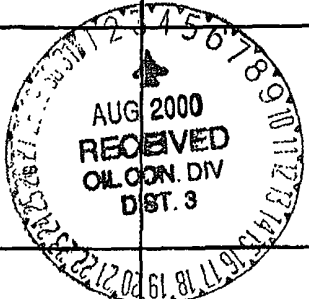
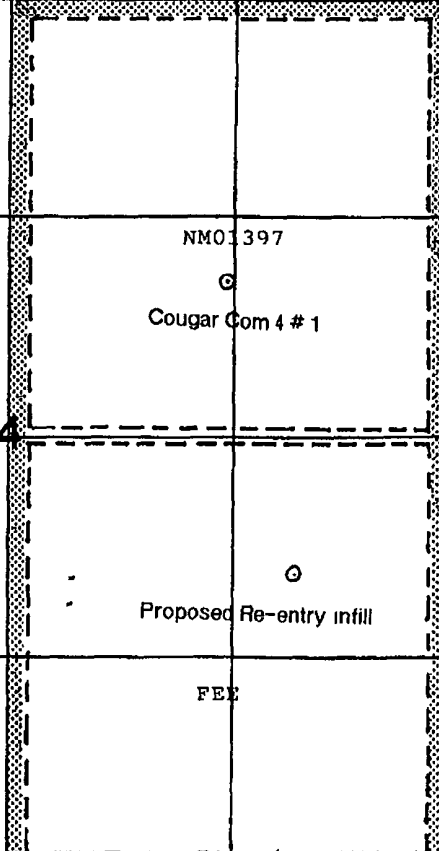
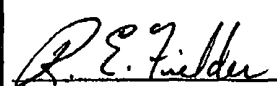
UL or lot no. I	Section 4	Township T25N	Range R2W	Lot Idn	Feet from the 1700	North/South line South	Feet from the 800	East/West line East	County Rio Arriba
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
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¹² Dedicated Acres 320.73	¹³ Joint or Infill Y	¹⁴ Consolidation Code C	¹⁵ Order No.
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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

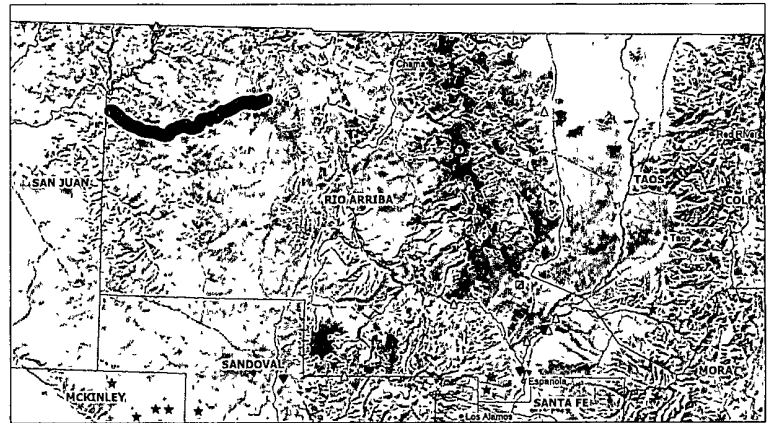
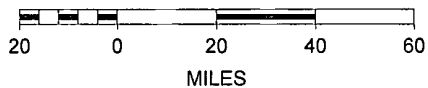
16 		17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.  Signature R. E. Fielder Printed Name Agent Title August 3, 2000 Date
		18 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Date of Survey Signature and Seal of Professional Surveyer: This location originally by Edgar L. Risenhoover, Certificate # 5979, on May 30, 1986. Location was not re-surveyed Certificate Number

Rio Arriba Mines, Mills And Quarries Web Map

Mines, Mills & Quarries Commodity Groups

- △ Aggregate & Stone Mines
- ◆ Coal Mines
- ★ Industrial Minerals Mines
- ▼ Industrial Minerals Mills
- ☒ Metal Mines and Mill Concentrate
- Potash Mines & Refineries
- ⌘ Smelters & Refinery Ops.
- ✦ Uranium Mines

SCALE 1 : 2,371,842



New Mexico Office of the State Engineer
POD Reports and Downloads

Township: Range: Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

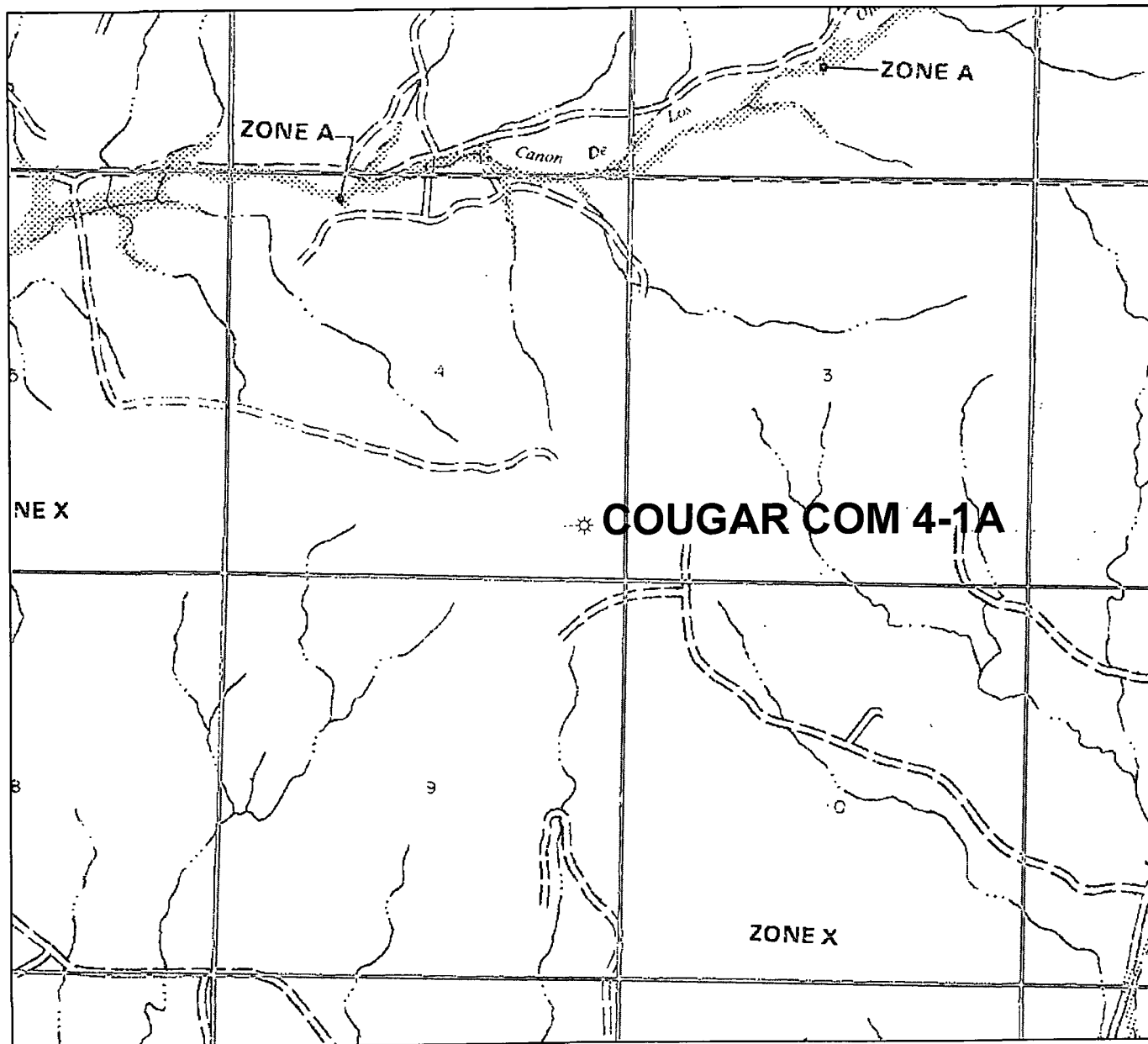
Owner Name: (First) (Last) ☐ Non-Domestic ☐ Domestic ☒ All

WATER COLUMN REPORT 07/29/2008

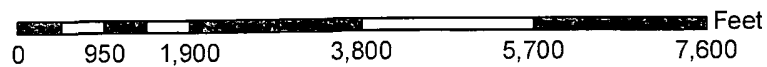
(quarters are 1=NW 2=NE 3=SW 4=SE)
 (quarters are biggest to smallest)

POD Number	Tw	Rng	Sec	q	q	q	Zone	X	Y	Depth Well	Depth Water	Water (in feet) Column
RG 53087	25N	02W	27	2	1					380	70	310
SJ 01752	25N	02W	02	4	4	4				210	85	125
SJ 01861	25N	02W	04	1	4	2				303	100	203
SJ 01861 CLW228229	25N	02W	04	1	4	2				200	100	100
SJ 01473	25N	02W	08	4	4	3				240		
SJ 02477	25N	02W	09	4	3	1				260	100	160
SJ 02736	25N	02W	10	4	1	1				375	60	315
SJ 01751	25N	02W	11	1	2	3				372	90	282
SJ 03461	25N	02W	11	1	2	3	C	272432	1971609	265	160	105
SJ 01758	25N	02W	12	1	3					235	80	155
SJ 03212	25N	02W	13	1	4	2				430	180	250
SJ 01754	25N	02W	14	3						192	90	102
SJ 03292	25N	02W	14	3	3	4				260		
SJ 03028	25N	02W	16	1	1	1				230	105	125
SJ 02355	25N	02W	17	2	4	3				260	80	180
SJ 02911	25N	02W	17	3	4	1				240	85	155
SJ 02091 X	25N	02W	25	4	3					345	120	225
SJ 01089	25N	02W	26	1						240	90	150
SJ 02342	25N	02W	27	2	1					380	70	310
SJ 03498	25N	02W	27	3	1	4				560	340	220
SJ 02917	25N	02W	28	1	2	3				1200		
SJ 02986	25N	02W	28	2	2	2				270	140	130
SJ 02738	25N	02W	28	3	2	2				650	265	385
SJ 00326	25N	02W	29	2	4					205	160	45
SJ 00279	25N	02W	31							210	85	125
SJ 03647	25N	02W	34					362117	1070216	667	280	387

Record Count: 26



1:24,000



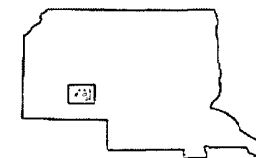
NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

RIO ARRIBA COUNTY,
NEW MEXICO
UNINCORPORATED AREAS

PANEL 775 OF 1325

(SEE MAP INDEX FOR PANELS NOT PRINTED)



PANEL LOCATION

COMMUNITY-PANEL NUMBER

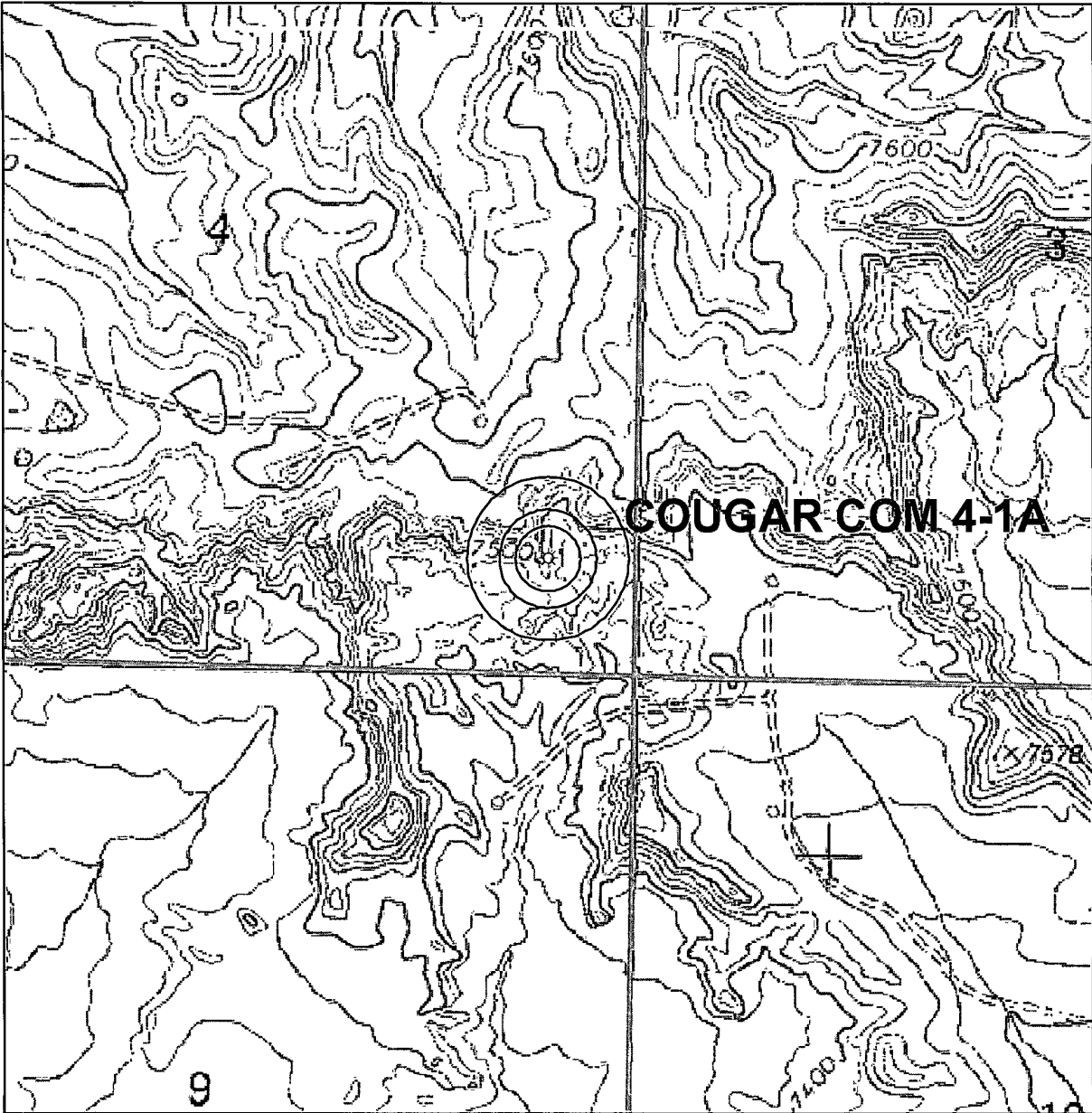
350049 0775 B

EFFECTIVE DATE:

JANUARY 5, 1989



Federal Emergency Management Agency

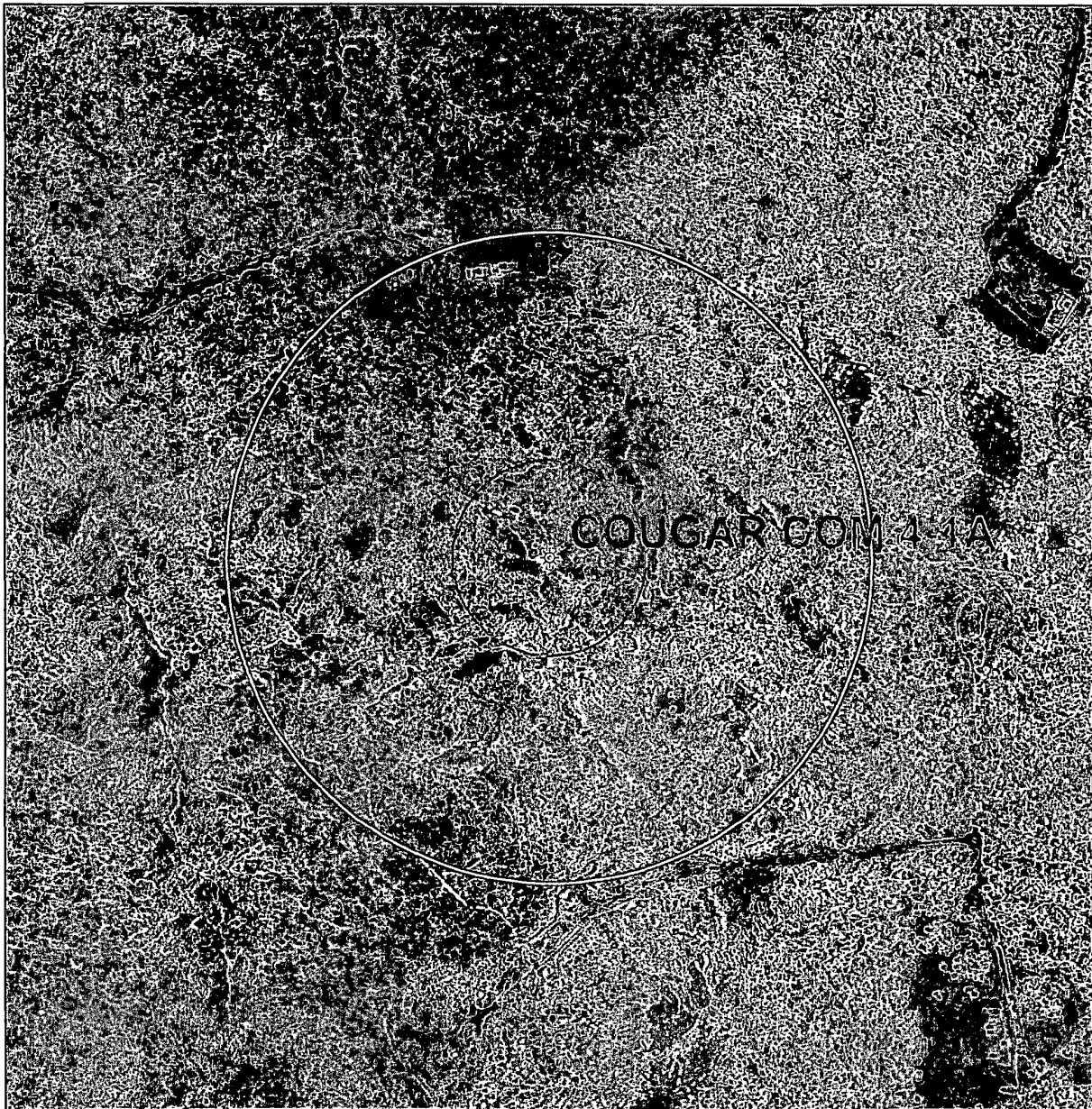


1:12,000
0 490 980 1,960 2,940 3,920 Feet

- McElvain Well & 200' Radius
- McElvain Well & 300' Radius
- McElvain Well & 500' Radius

Source: USGS 1:24,000 Scale
Topographic Map Series

San Juan Basin
New Mexico
Township 25N 2W
Section 4



1:6,000

Legend

0 250 500 1,000 1,500 2,000 Feet



McElvain Well & 300' Radius

McElvain Well & 1000' Radius

Aerial Source: NM Resource Geographic Information System
Program made available by the University of New Mexico
and the State of New Mexico 2005-2006 vintage Digital
Orthophoto Quarter-Quadrangles were derived from
the New Mexico Statewide Orthophotography Project.
Source imagery flown at 35,000' above average ground.

San Juan Basin
New Mexico
Township 25N 2W
Section 4

Siting Criteria Compliance Demonstrations

The Cougar Com 4 #1A well is not located in an unstable area. The location is not over a mine and is not on the side of a hill. The location of the excavated pit material is not located within 300' of any continuously flowing watercourse or 200' from any other water course.

McElvain Oil & Gas Properties, Inc.
San Juan Basin
Below Grade Tank Design and Construction

In accordance with Rule 19.15.17 NMAC the following describes the as-built construction of the Below Grade Tank on the McElvain Oil & Gas Properties, Inc (MOG) Cougar Com 4 #1A well located in the NESE of Sec 4, T25N, 2W.

As-built Installation:

1. The existing tank pit consists of an approximate 15 foot by 5 foot earth walled hole into which a 12 foot by 5 foot double bottom, single wall 95 bbl tank with leak detection is installed.
2. The tank walls are open for visual inspection to identify the occurrence of leaks.
3. There is an expanded metal covering on the top of the below grade tank.
4. The tank pit is surrounded by a 30ft X 30ft X 2ft berm that is contained within a 50 ft X 140 ft berm that encloses the tank battery to prevent overflow or surface water run-on.
5. A general location sign is displayed on site.
6. The pit tank is fenced with 4 foot field fence with a top rail.

McElvain Oil & Gas Properties, Inc.
San Juan Basin
Below Grade Tank Maintenance and Operating Plan

In accordance with Rule 19.15.17 NMAC the following describes the below grade tank operation and maintenance plan for the McElvain Oil & Gas Properties, Inc (MOG) on the Cougar Com 4 #1A well located in the NESE of Sec 4, T25N, 2W.

General Plan:

1. MOG shall operate and maintain the below grade tank to contain liquids and solids and prevent contamination of fresh water to protect the public health and environment.
2. MOG shall not allow a below grade tank to overflow or allow surface water run-on to enter the below grade tank.
3. MOG shall continuously remove any visible or measurable layer of oil from the fluid surface of a below grade tank in an effort to prevent significant accumulation of oil over time.
4. MOG shall inspect the below grade tank monthly and maintain a written record of each inspection for five years.
5. MOG shall maintain adequate freeboard to prevent overtopping of the below grade tank.

McElvain Oil & Gas Properties, Inc.
San Juan Basin
Closure Plan

In accordance with Rule 19.15.17.1 NMAC the following procedure describes the closure plan for the McElvain Oil & Gas Properties, Inc (MOG) below grade tank on the Cougar Com 4 #1A well located in the NESE of Sec 4, T25N, 2W.

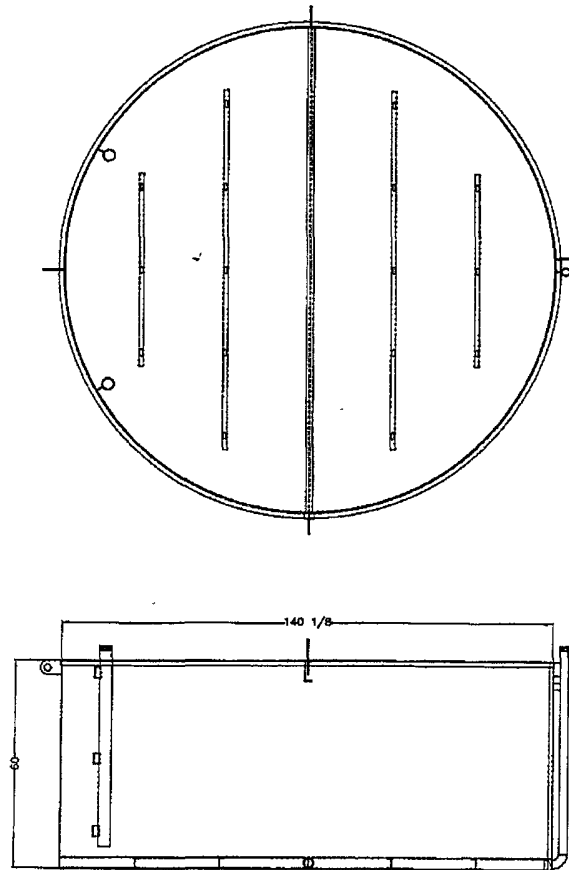
Closure Requirements:

1. MOG shall close the 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.
2. MOG shall close an existing below grade tank that does not meet the requirements of Paragraph (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.
3. MOG shall close a permitted below grade tank within 60 days of cessation of the below ground tank's operation or as required by the transitional provisions of Subsection B of 19.15.17.17 NMAC in accordance with a closure plan that the appropriate division district office approves. The closure report will be filed on C-144.
4. All liquids will be removed from the temporary permit prior to closure and the liquids disposed of in a division approved facility.
5. MOG shall remove the below grade tank and dispose of it in a division approved facility or recycle, reuse, or reclaim it in a manner that the appropriate division district office approves.
6. MOG will remove any on-site equipment associated with the below grade tank unless the equipment is required for some other purpose.
7. MOG shall test the soils beneath the below grade tank to determine whether a release has occurred. MOG shall collect a five point composite sample and individual grab samples from any area that is wet, discolored, or showing other evidence of a release. The samples will be analyzed for BTEX, TPH, and chlorides to demonstrate that the benzene concentration as determined by EPA SW-846 methods 8021B or 8260B or other EPA method that the division approves, does not exceed 50 mg/kg; the TPH concentration as determined by EPA method 418.1 or other EPA method that the division approves does not exceed 100 mg/kg; and the chloride concentration as determined by EPA

method 300.1 or other EPA method that the division approves does not exceed 250 mg/kg or the background concentration, whichever is greater. MOG shall notify the division of its results on form C-141.

8. If MOG or the division determines that a release has occurred, then MOG shall comply with 19.15.3.116 NMAC and 19.15.1.19 NMAC as appropriate.
9. If contamination is confirmed by field sampling. MOG will follow the Guidelines For Remediation Of Leaks, Spills, and Releases NMOCD August 1993 when remediating identified contaminants.
10. If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Paragraph (4) of Subsection E of 19.15.17.13 NMAC, then MOG shall backfill the excavation with compacted, non-waste containing, earthen material; construct a division-prescribed soil cover; re-contour, and re-vegetate the site.
11. Notice of closure will be given to the Aztec Division office between 72 hours and one week of closure via email or verbally. The notification of closure will include the following:
 - Operator's name
 - Location by Unit Letter, Section Township, and Range.
 - Well name and API number
12. All closure activities will include proper documentation and be available for review upon request and will be submitted to OCD within 60 days of closure of the blow grade tank. The closure report will be filed on C-144 and incorporate the following:
 - Details on capping and covering where applicable
 - Inspection reports
 - Sampling results
13. The site will be re-contoured to match the surrounding area. Natural drainages will be unimpeded and erosion control will be utilized where necessary.
14. MOG shall seed the disturbed areas the first growing season with a division approved seed mixture after pit closure. Seeding will be accomplished by drilling on the contour whenever possible or by other division approved methods. Repeat seeding or planting will be continued until successful vegetative growth occurs.
15. A minimum of four feet of cover shall be achieved and the cover shall include one foot of suitable material to establish vegetation at the site, or the thickness of the topsoil native to the area , whichever is greater.

16. The surface owner shall be notified of MOG's closing of the below grade tank as per the approved closure plan using certified mail with return receipt requested.



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		12' X 3' 95 DBL DOUBLE BOTTOM PIT TANK	
SCALE 1/18	DATE 1/18	DRAWN BY BUCKLES	
CHECKED BY 	DATE 	P.E. NO. 	
PROJECT NO. 	SHEET # 	0130-3 CUSTOMER	
DATE 6-11-05	DRAWING APPROVED BY 	DATE 	

Cougar Com 4 #1A

McElvain Oil & Gas Properties, Inc.

Hydrogeological Report For

Cougar Com 4 #1A

Surface Formation:

San Jose Formation

Regional and Local Geology

The Tertiary San Jose Formation is a fluvial and alluvial deposit of Eocene age and is the youngest bedrock unit of the Tertiary in the San Juan Basin (Baltz, 1967). The San Jose is the surface formation in most of the central San Juan Basin to the eastern margin of the basin. Where it is buried, it is unconformably overlain by Quaternary sediments. It rests on an erosional surface over the Tertiary Nacimiento Formation south of the Colorado-New Mexico state line, and lies over the Cretaceous-Tertiary Animas north of the state line (Fassett, 1974). The San Jose has been differentially eroded, deeply in places, and has produced a varied to rugged physiography and a thickness range of less than 200' in the south to nearly 2700' in the eastern part of the basin (Stone et al., 1983).

Baltz (1967) subdivided the San Jose Formation into four members. In the area of this well, the lower third to half of the formation is made up of the Cuba Mesa Member, a conglomeratic arkosic sandstone containing lenticular shales and pebbles of volcanic rock in places. The Cuba Mesa Member is thought to have been deposited by streams flowing to the west and southwest from highlands east and northeast of the present basin boundary, composed of granite and metamorphic rocks of Precambrian age (Baltz, 1967).

The Llaves Member overlies the Cuba Mesa Member and contains massive beds of resistant arkosic conglomeratic sandstone, and numerous thin beds of clay, shale and mudstone. The Llaves Member is thought to be a large, narrow northwest-trending fan deposited in the deepest part of the central basin by streams flowing northwestward from a Precambrian terrain in the position of the present Brazos and Sangre de Cristo uplifts (Baltz, 1967). The Llaves Member inter-tongues and grades into the Regina Member where present, but is not present at this location.

In this location, the Tapacitos Member lies above a persistent sandstone in the Llaves Member (Baltz, 1967). The Tapacitos is a silty to sandy mudstone containing interbedded, thin, poorly-consolidated sandstone, claystone, and an abundance of swelling clays (Stone et al., 1983) which would act as an aquitard to the underlying Llaves and Cuba Mesa Members.

Hydraulic Properties

Tertiary and Quaternary hydrologic properties, regional flow patterns and water quality do not vary significantly from unit to unit. Where pumping levels and drilling depths are economically feasible and where water quality is suitable, the San Jose, Nacimiento and Animas Formations are a source of water for public-supply, commercial, private-domestic and livestock use. Water in the San Jose, Nacimiento and Animas Formations occurs under both water table and artesian conditions. Recharge to the aquifers is from infiltration of precipitation and stream flow on outcrops, and from vertical upward leakage of water from underlying strata (Levings et al., 1990). Rates of such leakage, however, are very low except in areas of intense fracturing (Stone et al., 1983).

Because of their lithology, the better-qualifying zones in the San Jose Formation would be the Cuba Mesa and Llaves Members. Cuba Mesa wells may yield 30 to 60 gallons per minute (gpm). Specific capacity of one well described is 0.23 gpm per foot of drawdown at 1 hour of pumping. The Cuba Mesa aquifer of the San Jose will yield water suitable for livestock and industrial use. The aquifers of Tertiary rocks yield water that is characteristically high in ions of sodium and sulfate. The removal of iron may be required (Stone et al., 1983).

Hydrology & Conclusion

A records search of the NM Office of the State Engineer iWaters database was conducted around the area centered on the section in which lies the Cougar Com 4 #1A well location, 25N 2W section 4. Four wells with depth to water records were identified. Average: 127', minimum: 60', max: 248'. Topography accounts for the broad range of water depths. One water well was found in section 4 and recorded 100' depth to water. This well lies 40' above the primary tributary/valley floor. We can then expect to find depth to water in wells on the valley floor in the immediate area to be 60'. A well in section 10, located on the valley floor, recorded a depth to water of 60', as well. The Cougar Com 4 #1A, however, lies 140' above the valley floor (100' higher than the water well in the section). It can be concluded that depth to water at the Cougar Com 4 #1A location is 200'.

References

- Baltz, E.H., 1967, Stratigraphy and Regional Tectonic Implications of Part of Upper Cretaceous Rocks, East-Central San Juan Basin, New Mexico, USGS Professional Paper 552, 101p.
- Fassett, J.E., 1974, Cretaceous and Tertiary Rocks of the Eastern San Juan Basin, in Guidebook of Ghost Ranch, Central-Northern New Mexico, New Mexico Geological Society, 25th Field Conference, 404p.
- Levings, G.W., Craig, S.D., Dam, W.L., Kernodle, J.M., and Thorn, C.R., 1990, Hydrogeology of the San Jose, Nacimiento, and Animas Formations in the San Juan Structural Basin, New Mexico, Colorado, Arizona, and Utah, USGS Hydrologic Investigations Atlas HA-720-A, 2 sheets.
- Scholle, P.A., 2003, Geologic Map of New Mexico 1:500,000, NM Bureau of Geology and Mineral Resources, published in cooperation with the USGS, 2 sheets.
- Stone, W.J., Lyford, F.P., Frenzel, P.F., Mizell, N.H., and Padgett, E.T., 1983, Hydrogeology and water resources of San Juan Basin, New Mexico, New Mexico Bureau of Mines and Mineral Resources, Hydrologic Report 6, 70p.

BGT Closure Sampling Required by NMOCD

Components	Method	Limit
Benzene	EPA SW-846 8021B or 8260B	0.2 mg/Kg
BTEX	EPA SW-846 8021B or 8260B	50 mg/Kg
TPH	EPA SW-846 418.1	100 mg/Kg
Chlorides	EPA 300.1	250 mg/Kg