

Jones, Brad A., EMNRD

From: Clenney, Laura E <Laura.Clenney@chevron.com>
Sent: Wednesday, August 08, 2012 3:48 PM
To: Jones, Brad A., EMNRD
Cc: Barnes, Leslie (LeslieBarnes)
Subject: Chevron Below Ground Tank Replacements

Brad,

Chevron is planning to replace the following 12 BGT's in 2012, beginning in mid to late August with a planned completion in late October. Each site is listed in the table below. Identified in the 5th column of the table is the BGT targeted for removal, so you can reference it from the respective C-144's.

We are in the process of revising the C144 packages, beginning with the Keys Com #001 and Mexico Federal B #001 packages which should arrive at your office the week of August 13th.

Well Name	API	Global Positioning Coordinates	ULSTR	Pit Tank/ BGT
KEYS COM #001	30-045-07641	36.678344/107.910790	N-32-29N-10W	BGT #1
MEXICO FEDERAL B #001	30-045-07575	36.67821/107.903642	N-9 -28N-10W	BGT #1
RINCON UNIT #011	30-039-06648	36.511551/ 107.51163	K-6 -26N-06W	BGT #1
RINCON UNIT #083	30-039-07005	36.564423/ 107.433258	B-23-27N-06W	BGT #1
RINCON UNIT #085	30-039-07072	36.577438/ 107.55613	H-15-27N-07W	BGT #1
RINCON UNIT #093	30-039-06539	36.495069/107.539531	P-11-26N-07W	BGT #1
RINCON UNIT #100A	30-039-21972	36.543428/ 107.434117	J-26-27N-06W	BGT #1
RINCON UNIT #101	30-039-06693	36.512185/ 107.532949	L-1 -26N-07W	BGT #1
RINCON UNIT #136	30-039-82376	36.564792/ 107.540523	A-23-27N-07W	BGT #1
RINCON UNIT #159	30-039-07071	36.57653/ 107.505573	G-18-27N-06W	BGT #1
RINCON UNIT #171	30-039-06944	36.555018/ 107.478559	M-21-27N-06W	BGT #1
RINCON UNIT #176	30-039-82373	36.534753/ 107.530862	5-31-27N-06W	BGT #1

Please let me know if you need additional information in order to process the approval of these BGT packages.

Thanks,

Laura Clenney
Facilities Engineer - San Juan FMT
Laura.Clenney@Chevron.com

Chevron North America Exploration and Production
Mid-Continent Business Unit
332 ROAD 3100
Aztec, NM 87410

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1006 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
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: Chevron Midcontinent OGRID #: 241333
Address: 15 Smith Road, Midland, TX 79705
Facility or well name: Rincon Unit No. 85
API Number: 30-039-07072 OCD Permit Number: _____
U/L or Qtr/Qtr Qtr/Qtr H Section 15 Township 27N Range 7W County: Rio Arriba
Center of Proposed Design: Latitude 36.577138 Longitude 107.55613 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 *Tank 1*
Volume: 45bbl bbl Type of fluid: Condensate
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 Buried
Liner type: Thickness _____ mil ☐ HDPE ☐ PVC ☒ Other None

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 Four foot, pipe frame with square wire mesh.

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.
- ☐ 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. - Please reference hydrogeologic report and printout from iWATERS database.	<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). - Please reference the attached topographic map with distance rings. In addition, a field visit was conducted by Envirotech in July 2008 certifying that, at the time, there were no watercourses within the distance specified above.	<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>) - Please reference the attached aerial photo. In addition, a field visit was conducted by Envirotech in July 2008 certifying that, at the time, there were no referenced buildings within the distance specified above.	<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>) - Please reference the attached aerial photo. In addition, a field visit was conducted by Envirotech in July 2008 certifying that, at the time, there were no referenced buildings within the distance specified above.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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. - Please reference the attached iWATERS printout. In addition, a field visit was conducted by Envirotech in July 2008 certifying that, at the time, there were no wells or springs within the distances specified above.	<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. The site is not within any known incorporated municipal boundaries, please reference the attached topographic map.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 500 feet of a wetland. - Please reference the attached topographic map with distance rings. In addition, a field visit was conducted by Envirotech in July 2008 certifying that, at the time, there were no wetlands within the distance specified above	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within the area overlying a subsurface mine. - Please reference the attached topographic map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within an unstable area. - Please reference the attached topographic map which includes FEMA flood map data. The map indicates the well site is outside of any known 100 year floodplains.	<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	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Within 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 type="checkbox"/> No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 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	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 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 type="checkbox"/> No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input type="checkbox"/> No

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): Rodney Bailey Title: Waste & Water Group Lead

Signature:  Date: March 1, 2010

e-mail address: Bailerg@chevron.com Telephone: (432) 687 7123

20.

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

OCD Representative Signature:  Approval Date: 8/28/12

Title: Environmental Engineer 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 indentify 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: _____

- Well Name & Number: RINCON UNIT #85
- API #: 3003907072
- Lease #: SF079360
- Quarter/Quarter: H Section: 15 Township: 27N Range: 7W
- Lat: N36.577138° Long: W107.55613°

- Pit Tank #1: Manufacturer: Double Tank
- Serial #: UL1003 DOM: 7-00 Size 45 bbl
 - If N/A – Dimensions: Diameter _____ Height _____
- Material: Steel X Galvanized _____ Fiberglass _____
- Tank Configuration: Double Wall _____ Single Wall X (Buried X or Exposed _____ Walls)
- Contents: Produced Water _____ Condensate X Recycled Oil _____
- Tank Top Covering: Solid/Cone-top _____ Netting X (Solid X Fiber _____)
- Secondary Containment: Yes X No _____
- Fencing around berm: Yes X No _____
 - Fence Type: Cattle Panel _____ Field Fence X Barbwire _____

- Pit Tank #2: Manufacturer:
- Serial #: _____ DOM: _____ Size _____ bbl
 - If N/A – Dimensions: Diameter _____ Height _____
- Material: Steel _____ Galvanized _____ Fiberglass _____
- Tank Configuration: Double Wall _____ Single Wall _____ (Buried _____ or Exposed _____ Walls)
- Contents: Produced Water _____ Condensate _____ Recycled Oil _____
- Tank Top Covering: Solid/Cone-top _____ Netting _____ (Solid _____ Fiber _____)
- Secondary Containment: Yes _____ No _____
- Fencing around berm: Yes _____ No _____
 - Fence Type: Cattle Panel _____ Field Fence _____ Barbwire _____

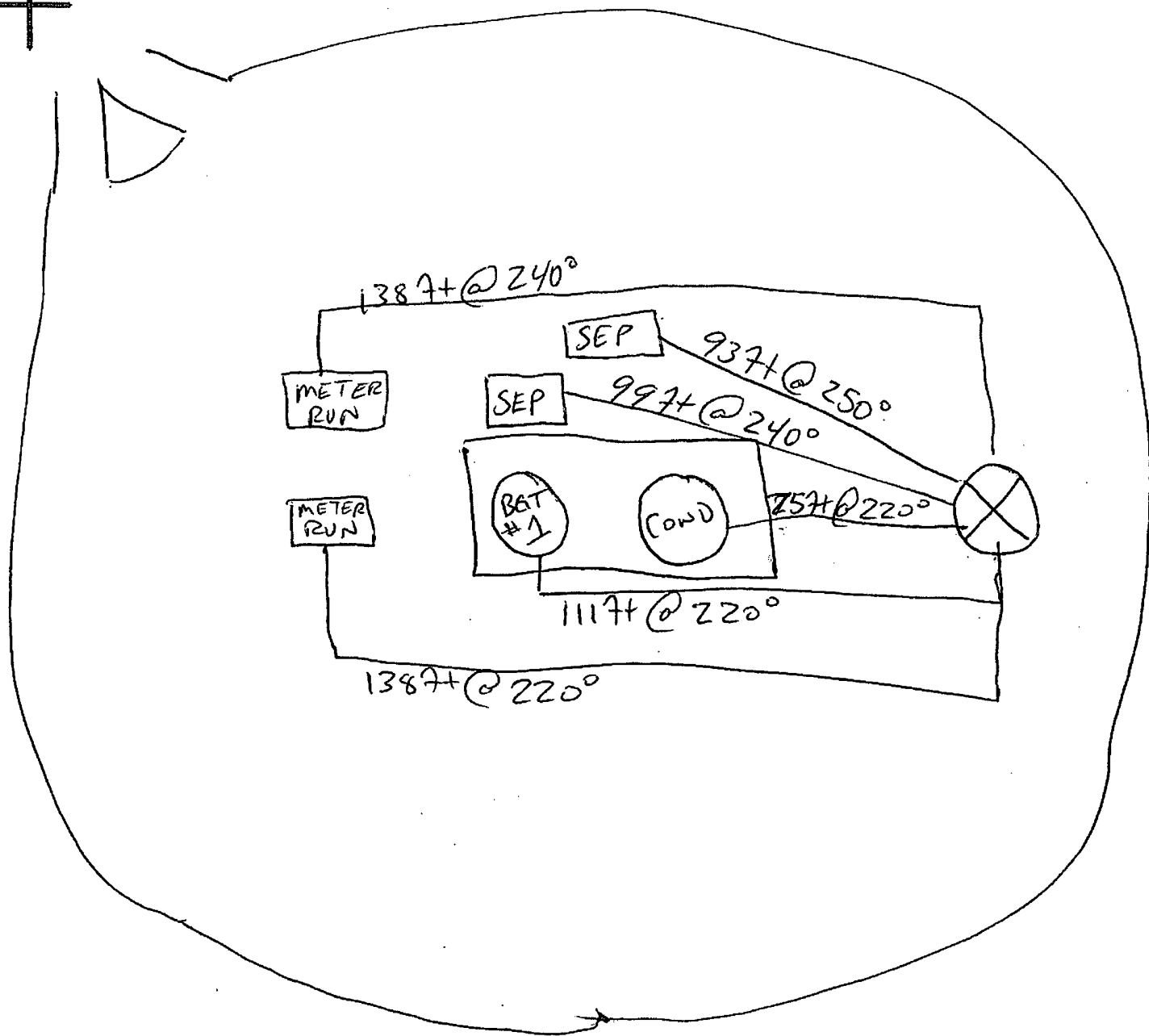
- Above-Ground Tank #1: Manufacturer: American Tank & Steel
- Serial #: 949 DOM: 6-56 Size 100 bbl
 - If N/A – Dimensions: Diameter _____ Height _____
- Material: Steel X Galvanized _____ Fiberglass _____
- Contents: Produced Water _____ Condensate X (State # NA) Recycled Oil _____
- Secondary Containment: Yes X No _____ 61-10896

- Above-Ground Tank #2: Manufacturer: _____
- Serial #: _____ DOM: _____ Size _____ bbl
 - If N/A – Dimensions: Diameter _____ Height _____
- Material: Steel _____ Galvanized _____ Fiberglass _____
- Contents: Produced Water _____ Condensate _____ (State # _____) Recycled Oil _____
- Secondary Containment: Yes _____ No _____

- Above-Ground Tank #3: Manufacturer: _____
- Serial #: _____ DOM: _____ Size _____ bbl
 - If N/A – Dimensions: Diameter _____ Height _____
- Material: Steel _____ Galvanized _____ Fiberglass _____
- Contents: Produced Water _____ Condensate _____ (State # _____) Recycled Oil _____
- Secondary Containment: Yes _____ No _____

Well Schematic

NORTH



Schematic Key:

Separator

SEP

Artificial Lift

AL

Condensate Tank

COND

Compressor

COM

Meter Run

METER RUN

Dehydrator

DEH

Well Head



Water Tank

WATER

Measure any distance 1000ft or less of the following:

• From wellhead to any continuous flowing or significant water course. NA

• From below-grade tanks to any permanent residence, school, church, hospital, etc. NA

Chevron Midcontinent, LP
BGT Permit Siting Criteria Summary Sheet
Rincon Unit #85

- Groundwater is estimated to be 33 feet below the bottom of the BGT. This was calculated using information from the cathodic well located on the well site. The top of casing elevation for the cathodic well is 6,756 feet and the depth to groundwater is recorded as 50 feet; see the *attached Data Sheet for Deep Ground Bed Cathodic Protection Wells*. (Depth to groundwater for water wells is measured from the top of casing so that all wells are labeled from a common point of interest.) This gives a groundwater elevation of 6706 feet. The topographic map indicates the site elevation to be 6,744 feet. The BGT is buried five (5) feet below ground surface which gives a bottom of the BGT elevation of 6,739 feet. The difference between the BGT bottom elevation and groundwater elevation is 33 feet.
- The below-grade tank is not within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake. The nearest continuously flowing watercourse is the San Juan River estimated to be 16 miles northwest of the BGT. The nearest lake is Navajo Lake estimated to be 13 miles northwest of the BGT. The nearest watercourse is an insignificant, un-named ephemeral wash estimated to be 1600 feet southwest of the BGT; see attached *Topographic Map*. (The red dot on the topographic map indicates the location of the BGT). Cuervo lakebed is located approximately 1.09 miles south of the well site.
- The below-grade tank is not within 300 feet of a permanent residence, school, hospital, institution, or church in existence at the time of initial application; see the attached *Aerial Map*. (The red dot on the aerial map indicates the location of the BGT.) There are no permanent residences, schools, hospitals, institutions or churches within the mapped area of the *Aerial Map*. The nearest residence is 7.5 miles southwest of the BGT. The nearest school, hospital, institution, or church is at least 18 miles northwest of the BGT.
- The BGT is not within 500 feet of a private, domestic fresh water well or spring used by less than five households for domestic or stock watering purposes. The BGT is located within 1000 feet of a fresh water well. The nearest fresh water well is estimated to be 175 meters (576 feet) northwest of the BGT; see attached *NMOSE Water Column/Average Depth to Water Report* and *Topographic Map*. The water well is determined to be used for stock watering purposes because it is located in an isolated area - the nearest household is approximately 7.5 miles to the southwest. There are no freshwater springs within the mapped area of the attached *Topographic Map*.
- The below-grade tank is not within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended; see the attached *Municipal Boundary Map*. The closest boundary is the Bloomfield Municipal Boundary located approximately 24 miles northwest of the site. (The Bloomfield City Limits are colored purple and the BGT is indicated by a red circle on the *Municipal Boundary Map*.)
- The below-grade tank is not within 500 feet of a wetland; see the attached *Topographic Map* and *U.S. Fish and Wildlife Service National Wetlands Inventory Map*. Any wetlands on the topographic map are noted in dark blue. The nearest wetland area is identified as a freshwater pond and is estimated to be 700 feet northeast of the BGT.
- The below-grade tank is not within an area overlying a subsurface mine; see the attached *NM EMNRD-Mining and Mineral Division Map*. The nearest mine is an aggregate mine located approximately 29 miles northwest of the BGT.
- The below-grade tank is not within an unstable area; see the attached *USGS Geologic Map* and *USGS Karst Map*. The site is indicated on the maps by a red square. The nearest Karst Feature is approximately 45 miles southeast of the site and is shown on the *USGS Karst Map*. The underlying geology is comprised of the San Jose Formation, a Tertiary formation composed of shale, siltstone and sandstone.
- The well site is outside of any known 100 year floodplains as evidenced on the attached *FIRM Flood Insurance Rate Map*. (Any floodplains are indicated by blue dotted hatching on the map.)

HYDROGEOLOGIC REPORT

Rincon Unit #85 Hydrogeologic Report

Topography and Surface Hydrology

The Rincon Unit #85 well site is located in what is considered the Colorado River Basin, within the Gould Pass, Rio Arriba County, New Mexico, United States Geological Survey (USGS) 7.5-minute Quadrangle Map approximately 24 miles to the southeast of the Bloomfield, New Mexico, municipal boundary; see attached *Municipal Boundary Map*. The nearest municipality in Rio Arriba County is Dulce, New Mexico, approximately 35 miles northeast of the site. The largest, continuously flowing streams of the Colorado River Basin are the Animas and San Juan Rivers. The San Juan River is the closest continuously flowing waterway to the site and is approximately 16 miles northwest of the site. Most stream channels within the Colorado River Basin are ephemeral, with some being intermittent (Stone et al., 1983). The tributaries of the San Juan River that contribute large quantities of water during precipitation events are Canyon Largo, Gallegos Canyon, Chaco River, and the La Plata River. The nearest wash is approximately 1,600 feet southwest of the below grade tank and is an insignificant, un-named wash that is a second order tributary to the Cuervo Canyon wash. The general topographic slope of the site is to the southwest toward the nearest wash approximately 1,600 feet southwest of the well site, which flows into a second order tributary of the Cuervo Canyon wash approximately 1.25 miles southwest of the well site. Storm water runoff flows off of the Rincon Unit #85 well site toward the southwest and then follows storm water channels toward the nearest wash. The nearest significant watercourse is the Cuervo Canyon wash which is approximately 1.25 miles to the southwest of the well site. The Cuervo Canyon wash is an ephemeral wash that only exists during periods of heavy precipitation and is a second order tributary to the San Juan River; see attached *Topographic Map*.

Wetland areas can be found to the north, east, and south of the well site. The nearest wetland area to the Rincon Unit #85 well site is approximately 700 feet northeast of the BGT. These wetland areas are identified as freshwater ponds in accordance with the attached *U.S. Fish and Wildlife Service National Wetlands Inventory Map*. The nearest identified 100 year flood zone is approximately one (1) mile to the south of the well site within Zone A of the first order tributary of Cuervo Canyon wash; see attached *Firm Flood Insurance Rate Map*.

Residential areas are mostly within the San Juan River Valley to the north and within the Bloomfield City Municipal Boundaries. The closest permanent residence is approximately 7.5 miles to the southwest of the Rincon Unit #85 well site. The nearest school is located in Blanco, New Mexico located 18 miles northwest of the Rincon Unit #85. All other schools, churches and institutions are all located within the Blanco and Bloomfield City Municipal Boundaries. The closest hospital is located within Farmington, New Mexico, approximately 15 miles west of Bloomfield.

The only mining activities identified are to the northwest of the Rincon Unit #85. The mining activities are Aggregate and Stone Mines and the nearest mine is approximately 29 miles northwest of the well site. No mines were identified within the map boundary; see attached *NM EMNRD – Mining and Mineral Division Map*.

Soil

The San Juan Basin contains a wide range of soil types, with the northwest part of the basin, including the bulk of the drainage area of the Chaco and San Juan Rivers, characterized by light-colored, cool, desertic soil types. The higher elevations bordering the basin are characterized by moderately dark to dark mountain soils, and the area in between the two zones being characterized by dark-colored, western plateau soils. The majority of the soils within the basin are of alluvial valley fill and consist of gravel, sand, silt, and clay (Stone et al., 1983). The soil type in the area of the Rincon Unit #85 well site is the Vessilla-Menefee-Orlie complex. This soil is characterized by moderate organic material and high permeability. The unit consists of slope alluvium over residuum weathered from sandstone. The unit is low to moderately steep and ranges between one (1) and 30 percent sloping grade. It is a well drained soil with a very low available water capacity. The depth to paralithic bedrock is between 10 and 20 inches. The underlying bedrock is mainly weathered sandstone and shale with visible outcrops along the canyon rim to the west of the well site. The unit is found between the elevations of 6,100 feet and 7,200 feet. Mean annual precipitation is between 13 to 16 inches per year (*Natural Resources Conservation Service Soil Survey*).

Geology and Groundwater Hydrology

The area geology is comprised of mostly sandstone, mudstone, and siltstone. Karst features are formed by the dissolution of soluble rocks, such as limestone and dolomite, and can be characterized by springs, caves, and sinkholes. The nearest documented Karst features are approximately 45 miles southeast of the well site in accordance with a search of Karst features conducted from the *New Mexico Institute of Mining and Technological Petroleum Recovery Research Center Webb Mapping Portal*. The information used to create the Karst feature search was compiled using data from the *United States Geological Survey (USGS) Digital Engineering Aspects of Karst Map web site*. The identified Karst features consist of fissures, tubes and caves generally less than 1,000 feet long, 50 feet or less vertical extent, in moderately to steeply dipping beds of carbonate rock.

Most water supplies in the San Juan Basin are from groundwater that is accessed through wells completed within the surficial valley-fill deposits of Quaternary age and sandstones of Tertiary, Cretaceous, Jurassic, and Triassic age. The Rincon Unit #85 well site lies in the San Jose Formation Aquifer which dips at 7 degrees to the north-east (Frenzel, 1983). The San Jose Formation ranges from less than 200 feet in the west and south to nearly 2,700 feet in the basin center between Cuba and Gobernador (Frenzel, 1983).

The San Jose Formation (Tsj) is the youngest Tertiary unit in the San Juan Basin and was named by Simpson (1948, p. 277-283). It is of early Eocene age and as early as 1875 was correlated with the Wasatch Formation in Wyoming. The San Jose is the surface formation in the eastern two-thirds of the San Juan Basin. Although largely exposed in New Mexico, the San Jose also straddles the New Mexico/Colorado State boundaries. It outcrops in its west, south and northeast boundaries in a broad, and in some places irregular, southeasterly trending band in the Blanco Canyon to Largo Canyon area. On the east side, it rises structurally and outcrops in a narrow band along the west face of the Nacimiento Uplift forming the eastern boundary of the San Juan Basin. There are several smaller, isolated remnants of the San Jose Formation west of the central exposure. The San Jose has eroded deeply in some areas and because of differential resistance to erosion of its various sandstone and shale units, produces a large thickness variance and in some places formation of very rugged topographic expression (Baltz, 1967, p. 45). In some places it erodes to horseshoe-shaped badlands and massive cliffs. The San Jose overlays the nonresistant slope-forming Nacimiento Formation (Tn). Thickness of the San Jose ranges from less than 200' at the outcrop on the west and south sides to almost 2700 feet in the the Basin center (Stone, et al, p. 25). The thickness is 1300' or less on the southern part of the Tapicitos Plateau where the San Jose structurally rises and its upper beds are eroded. In the Largo Plains area (Largo Canyon) which marks the western exposure of the preserved San Jose, more than half of the Formation was removed by erosion (Baltz, p. 46). The San Jose Formation contact is that of an angular unconformity surface with the underlying Paleocene-age Nacimiento Formation near the Nacimiento Uplift, but is slightly disconformable to conformable in the Basin center (Stone, et al, p. 25). The San Jose Formation is comprised of four identifiable rock facies (in ascending order) called the Cuba Mesa, the Regina, the Llaves and the Tapicitos Members. These four members are only present in the far eastern part of the basin (Brimhall, 1973, p. 198). Within the preserved area, only the Cuba Mesa and Regina are widespread throughout the basin. The oldest Member of the San Jose is the Cuba Mesa (150-800 feet thick), which is largely a massive cliff-forming buff and yellow, rusty-weathering cross-bedded arkosic coarse-grained sandstone with lenticular reddish, green and gray shale beds (Baltz, p. 46). The Cuba Mesa is overlain in the southern two-thirds of the area by drab-colored variegated shale and interbedded soft to hard sandstones known as the Regina Member (100 to 1700 feet thick) and overlain in the northern one-third by a thick sequence of sandstone called the Llaves (50 to 1300 feet thick) which in turn intertongues and grades southward into the Regina. In the northeastern part of the area, the upper Llaves Member grades southward and westward into the red silty mudstones, siltstones and interbedded poorly consolidated sandstones of the Tapicitos Member (120-500 feet thick) (Stone, et al, p. 25).

The nearest registered water well determined by a radius search of 2000 meters (1.24 miles) from the center of the BGT on the Rincon Unit #85 well site is approximately 175 meters (576 feet) northwest of the BGT with a depth of groundwater of 500 feet below the top of casing; see attached *New Mexico Office of the State Engineer Water Column/Average Depth to Water Report* and *Topographic Map*. Groundwater is estimated to be 33 feet below the bottom of the BGT. This was calculated using information from the cathodic well located on the well site. The top of casing elevation for the cathodic well is 6,756 feet and the depth to groundwater is recorded as 50 feet; see the attached *Data Sheet for Deep Ground Bed Cathodic Protection Wells*. This gives a groundwater elevation of 6,706 feet. The topographic map indicates the site elevation to be 6,744 feet. The BGT is buried approximately five (5)

feet below the surface elevation giving the bottom of the BGT an elevation of approximately 6,739 feet. The difference between the BGT bottom elevation and groundwater elevation is 33 feet.

Resources

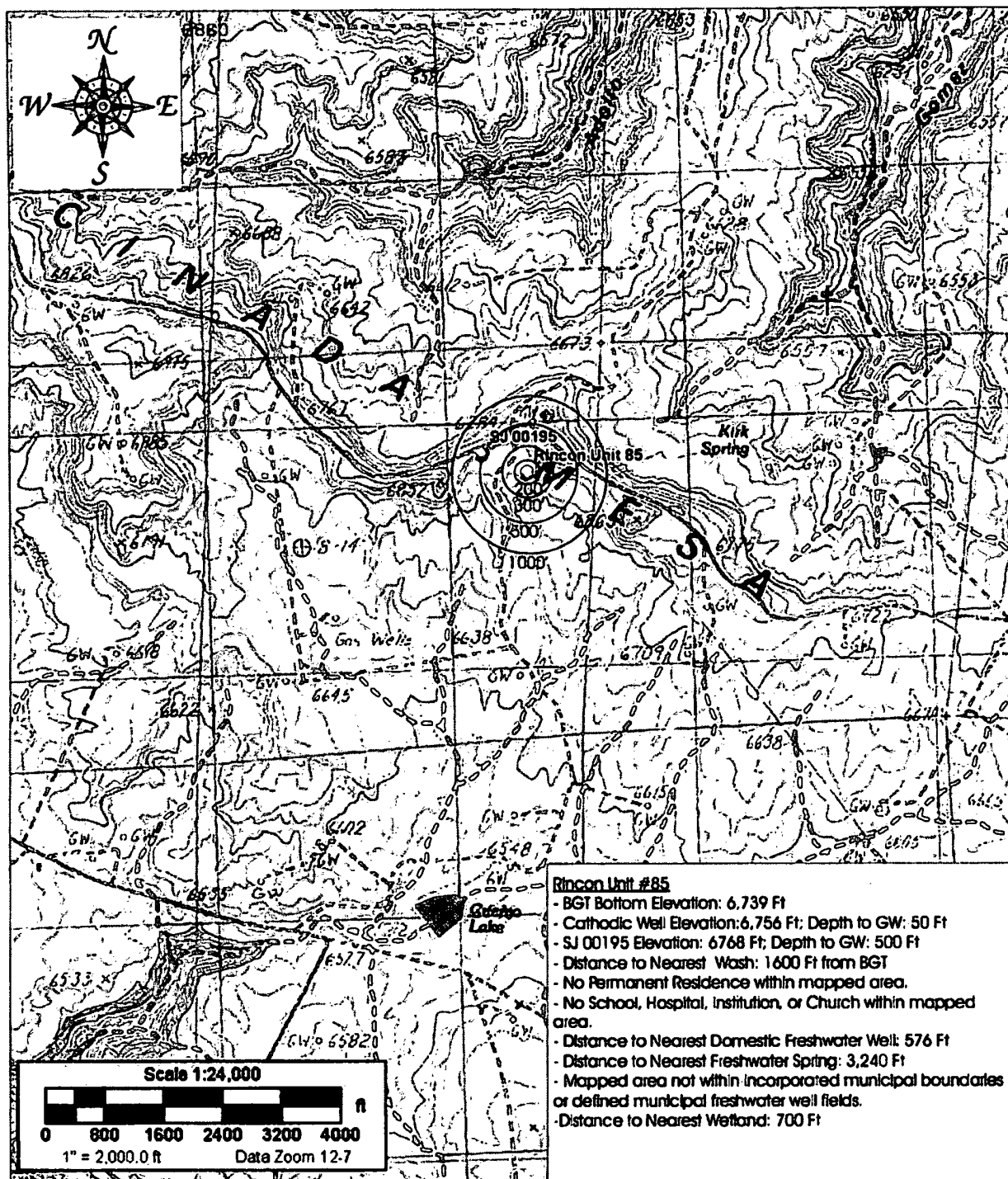
New Mexico Office of the State Engineer (NMOSE) New Mexico Water Right Reporting System (iWaters database)

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

Natural Resources Conservation Service Soil Survey web page

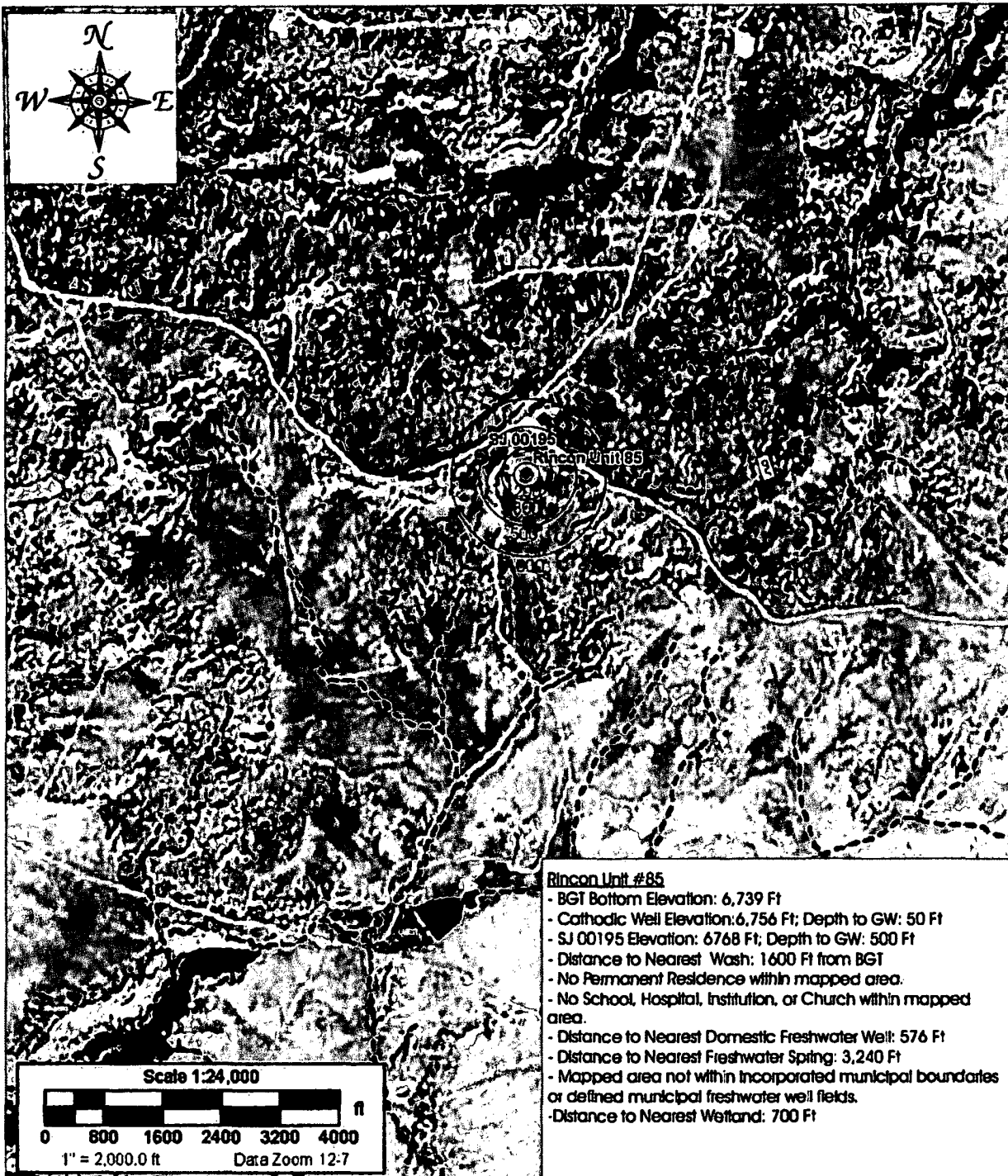
New Mexico Institute of Mining and Technological Petroleum Recovery Research Center Webb Mapping Portal

SITING CRITERIA COMPLIANCE DEMONSTRATIONS



Source: USGS 7.5-minute Quadrangle Map - Gould Pass, Rio Arriba County, New Mexico

<p>LEGEND</p> <ul style="list-style-type: none"> ○ Below Grade Tank ○ Water Well ● Wetland Area ⊙ Spring or Seep --- Ephemeral Wash 	<p>envirotech ENVIRONMENTAL SCIENTISTS & ENGINEERS</p> <p>5796 U.S. HIGHWAY 64 Farmington, New Mexico 87401 505.632.0615</p>	<p>Topographic Map Chevron North America Rincon Unit #85 Section 15, Township 27 N, Range 07 W Rio Arriba County, New Mexico</p>
<p>PROJECT Number: 92270-0999 Date Drawn: 8/15/12</p>		<p>DRAWN BY: Christopher Arigo</p> <p>PROJECT MANAGER: Greg Crabtree</p>



Source: USGS 7.5-minute Quadrangle Map - Gould Pass, Rio Arriba County, New Mexico

<p>LEGEND</p> <ul style="list-style-type: none"> ● Below Grade Tank ● Water Well ● Wetland Area ⊕ Spring or Seep --- Ephemeral Wash 	<p>envirotech ENVIRONMENTAL SCIENTISTS & ENGINEERS</p> <p>5796 U.S. HIGHWAY 64 Farmington, New Mexico 87401 505.632.0615</p>	<p>Aerial Map Chevron North America Rincon Unit #85 Section 15, Township 27 N, Range 07 W Rio Arriba County, New Mexico</p>	
<p>PROJECT Number: 92270-0999 Date Drawn: 8/15/12</p>		<p>DRAWN BY: Christopher Arigo</p>	<p>PROJECT MANAGER: Greg Crabtree</p>

85-30039-07072

184-30-039-07088

**DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)**

Operator Union Oil Company of California Location: Unit Sec. 15 Twp 27N Rng 7WName of Well/Wells or Pipeline Serviced Rincon 85 PC/MV Rincon #184 DKElevation 6756' Completion Date 9/22/1965 Total Depth 560' Land Type* FCasing, Sizes, Types & Depths NoneIf Casing is cemented, show amounts & types used None

If Cement or Bentonite Plugs have been placed, show depths & amounts used
None

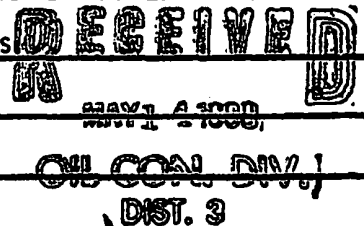
Depths & thickness of water zones with description of water when possible:
Fresh, Clear, Salty, Sulphur, Etc. 50' to 65' 15' thick
155' to 165' 10' thick

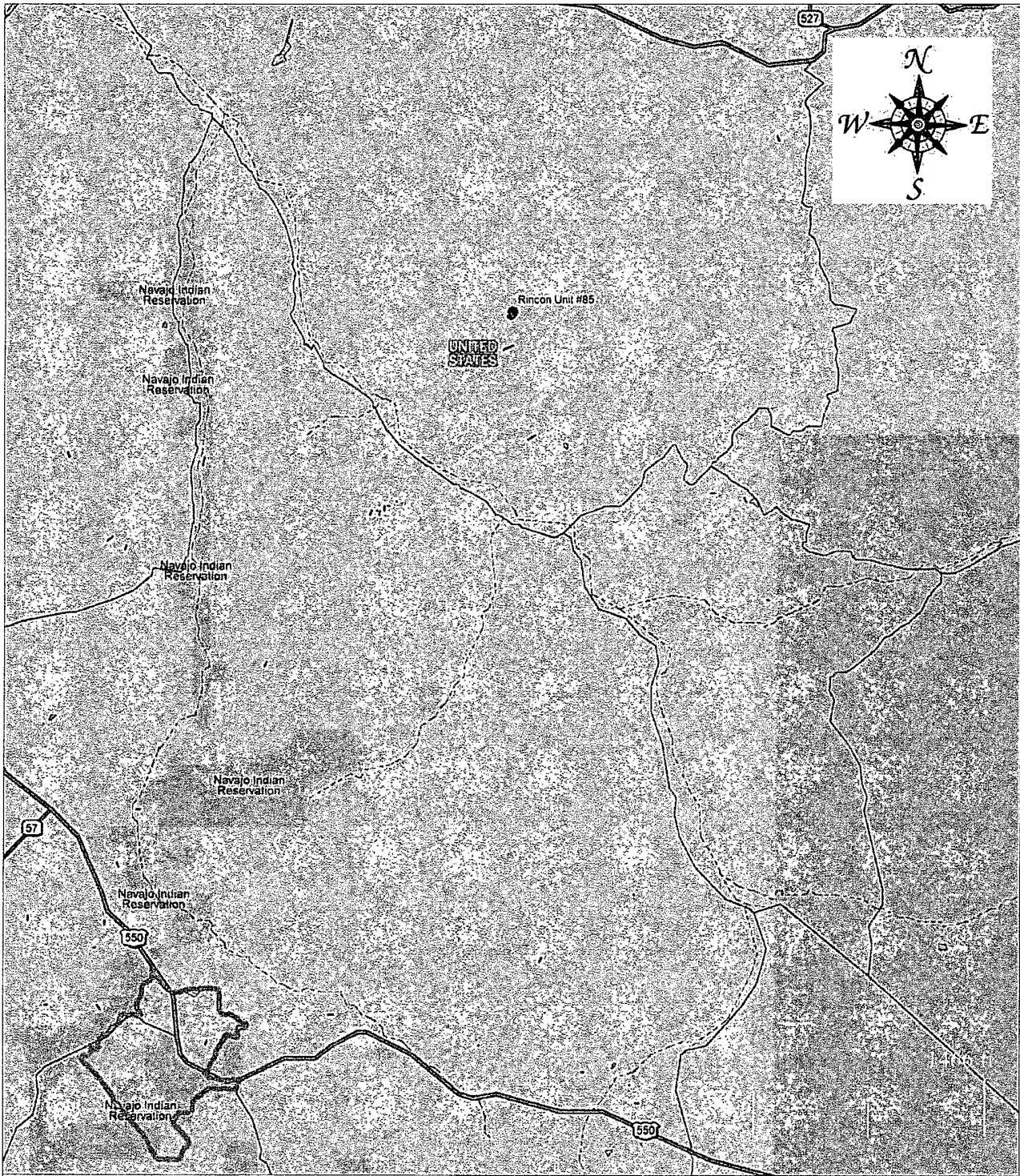
Depths gas encountered: NAType & amount of coke breeze used: type unknown 7140 lbsDepths anodes placed: 160' to 320'Depths vent pipes placed: 170'Vent pipe perforations: ?

Remarks: El Paso Natural Gas Co. was the operator at the time this ground bed was installed.
First ground bed installed at this location

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.





Source: Delorme Topo USA 6.0

LEGEND

- Below Grade Tank
- City Boundary



5796 U.S. HIGHWAY 64
Farmington, New Mexico 87401
505.632.0615

Municipality Map

Chevron North America

Rincon Unit #85

Section 15, Township 27 N, Range 7 W
Rio Arriba County, New Mexico

PROJECT Number: 92270-0999 Date Drawn: 08/28/12

DRAWN BY:
Torie Thompson

PROJECT MANAGER:
Greg Crabtree



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the
POD suffix indicates the
POD has been replaced
& no longer serves a
water right file.)

(R=POD has
been replaced,
O=orphaned,
C=the file is
closed)

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Code	Subbasin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
SJ 00195			SJ	2	15	27N	07W		271133	4051089*	175	1633	500	1133	

Average Depth to Water: 500 feet

Minimum Depth: 500 feet

Maximum Depth: 500 feet

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 271285.63

Northing (Y): 4051002.21

Radius: 2000

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

8/14/12 2:32 PM

Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER

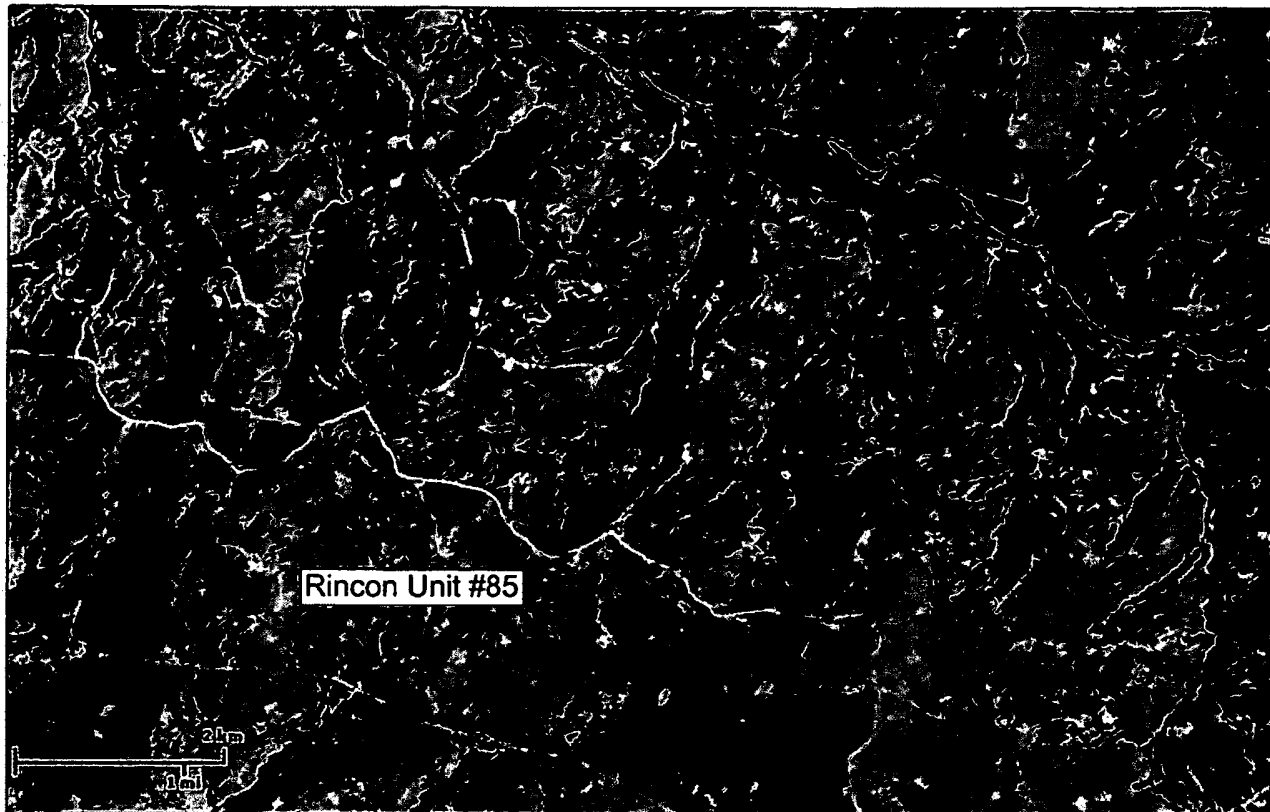


U.S. Fish and Wildlife Service









National Wetlands Inventory

Chevron North
America / Rincon
Unit #85

Aug 14, 2012



Wetlands

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

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

MMQonline Public Version

NM EMNRD - Mining and Mineral Division Map
Chevron North America / Rincon Unit #85

Mines, Mills & Quarries Commodity Groups

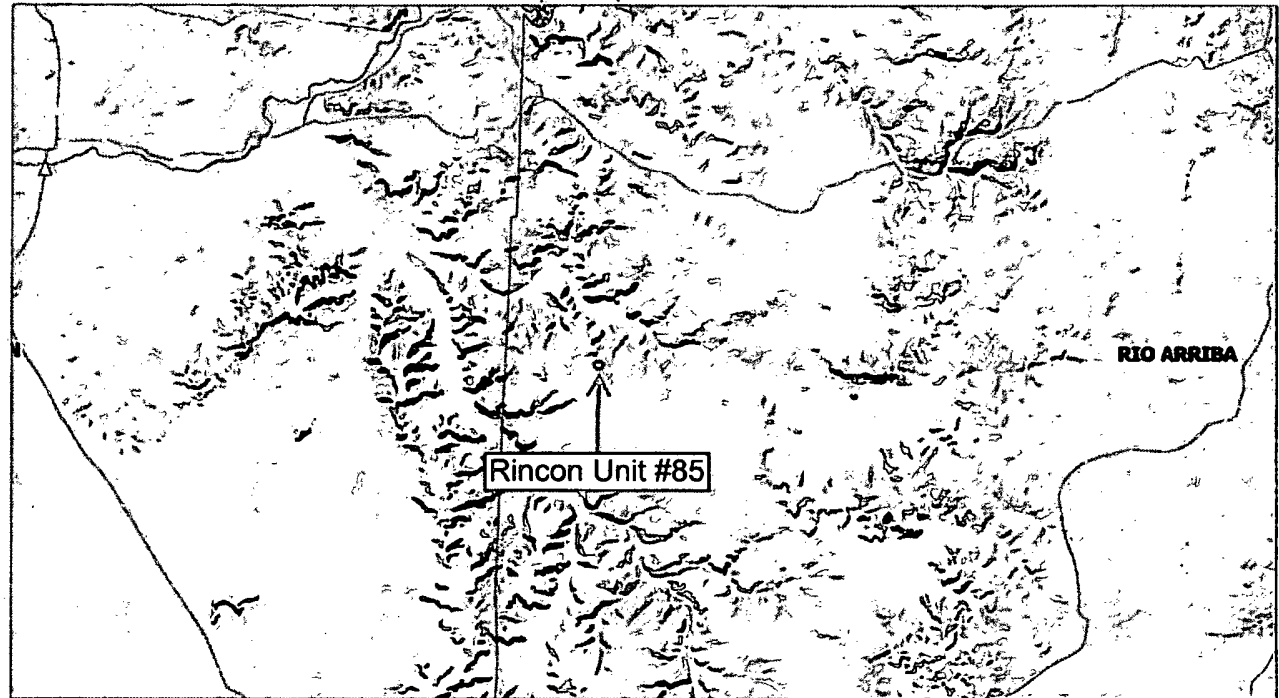
- ▲ Aggregate & Stone Mines
- ◆ Coal Mines
- ☆ Industrial Minerals Mines
- ▽ Industrial Minerals Mills
- ☐ Metal Mines and Mill Concentrate
- ▣ Potash Mines & Refineries
- ⊠ Smelters & Refinery Ops.
- ✱ Uranium Mines
- ⊙ Uranium Mills

Population

- Cities - major

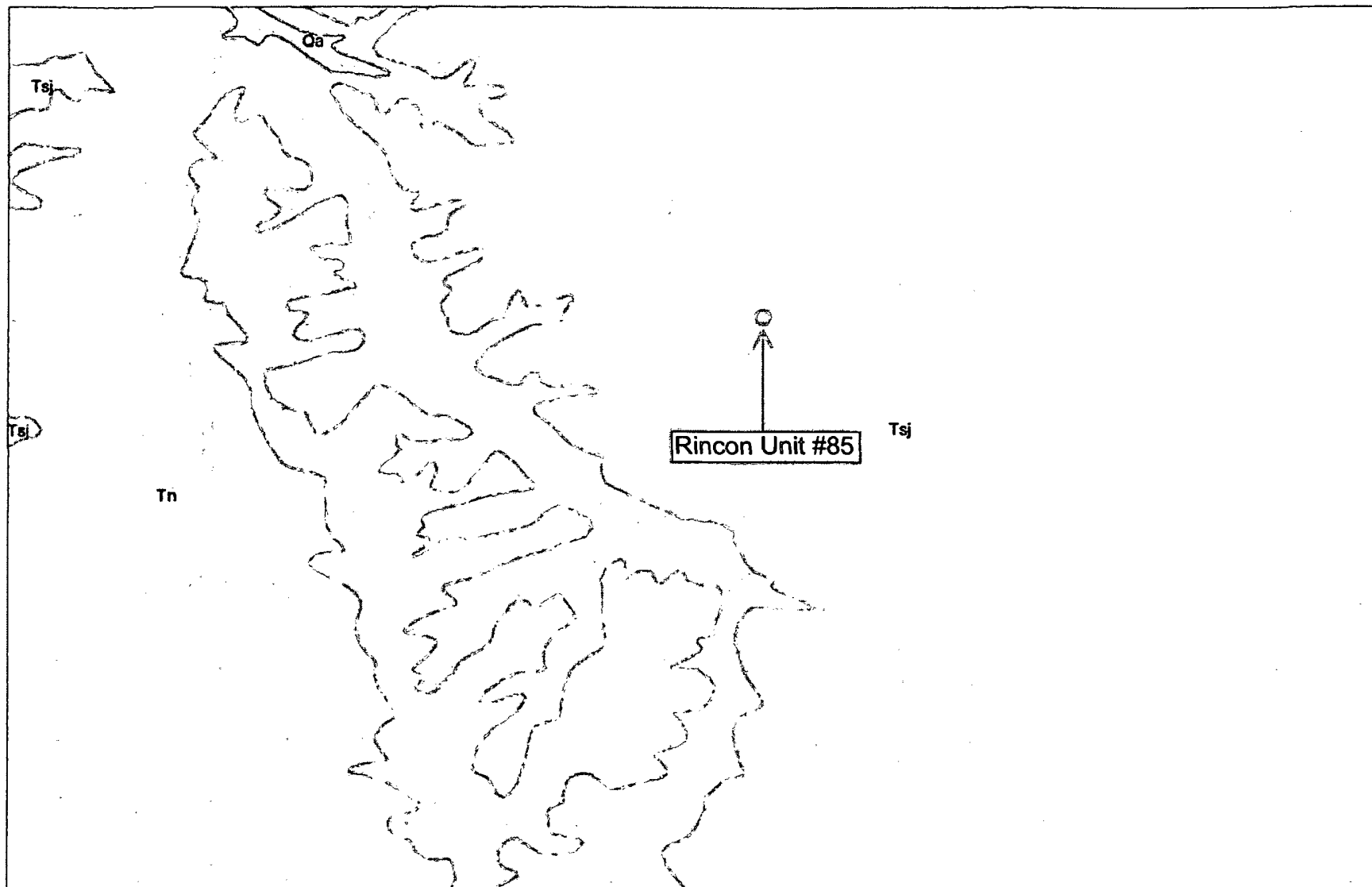
Transportation

- +—+—+— Railways
- Interstate Highways
- Major Roads

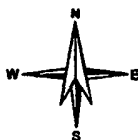


SCALE 1 : 500,000





0 2 4mi



Petroleum Recovery
Research Center

USGS Geologic Map

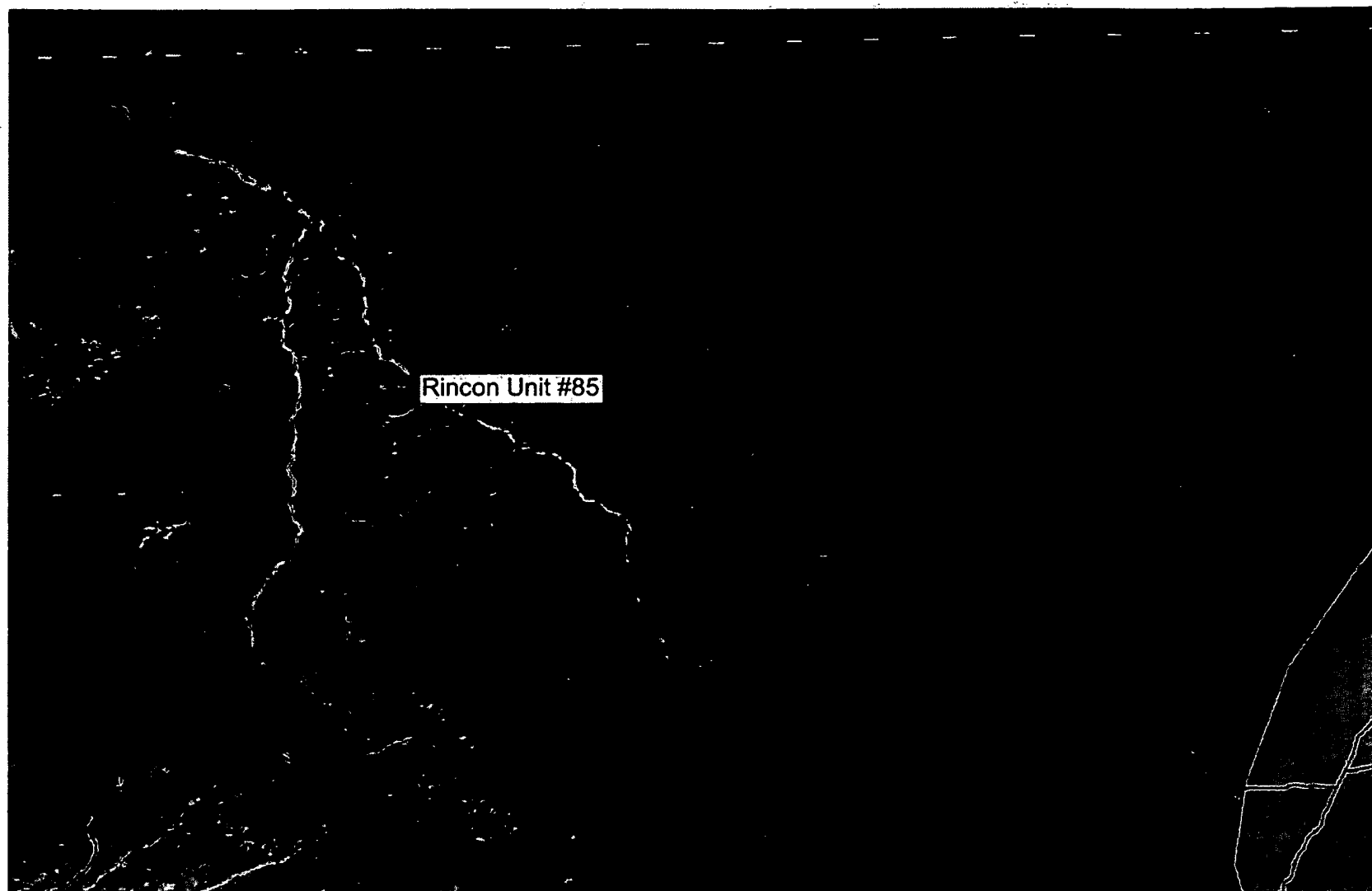
Figure:

Chevron North America/Rincon Unit 85

08/14/2012

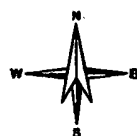
USGS Geologic Map Legend

- ☐ Tnb, Basalt and andesite flows; Miocene
- ☐ Tn, Macimiento Formation
- ☐ Tnb, Basalt and andesite flows; Neogene
- ☐ Tnr, Tertiary-Silicic to intermediate volcanic rocks
- ☐ Tnv, Tertiary-Neogene volcanic rocks
- ☐ To, Tertiary-Ogallala Formation
- ☐ Toa, Tertiary-Ojo Alamo Formation
- ☐ Tos, Tertiary-sedimentary and volcanoclastic rocks
- ☐ Tpb, Basalt and andesite flows; Pliocene
- ☐ Tpc, Tertiary-Poison Canyon Formation
- ☐ Tps, Tertiary-Paleogene sedimentary units
- ☐ Tsf, Tertiary-Lower and Middle Santa Fe Group
- ☐ Tsj, Tertiary-San Jose Formation
- ☐ Tual, Tertiary-Upper Oligocene andesites and basaltic andesites
- ☐ Tuan, Tertiary-Lower Miocene and uppermost Oligocene basaltic andesites
- ☐ Tai, Tertiary-Miocene to Oligocene silicic to intermediate intrusive rocks; dikes, stocks, plugs, and diatremes
- ☐ Tuim, Upper and Middle Tertiary mafic intrusive rocks
- ☐ Turf, Tertiary-Upper Oligocene silicic (or felsic) flows and masses and associated pyroclastic rocks
- ☐ Turp, Tertiary-Upper Oligocene rhyolitic pyroclastic rocks
- ☐ Tus, Upper Tertiary sedimentary units
- ☐ Tuv, Tertiary-Volcanic and some volcanoclastic rocks; undifferentiated
- ☐ Tv, Middle Tertiary volcanic rocks; undifferentiated
- ☒ Water
- ☐ X, Precambrian-Lower Proterozoic rocks; undivided
- ☐ Xn, Precambrian-Lower Proterozoic metasedimentary rocks
- ☐ Xno, Precambrian-Lower Proterozoic metamorphic rocks; dominantly mafic
- ☐ Xns, Precambrian-Lower Proterozoic metasedimentary rocks
- ☐ Xnm, Precambrian-Lower Proterozoic metamorphic rocks, undivided
- ☐ Xp, Precambrian-Lower Proterozoic plutonic rocks
- ☐ Xmp, Precambrian-Middle and Lower Proterozoic plutonic rocks, undivided



Rincon Unit #85

0 5 10mi



Petroleum Recovery
Research Center

USGS Karst Map

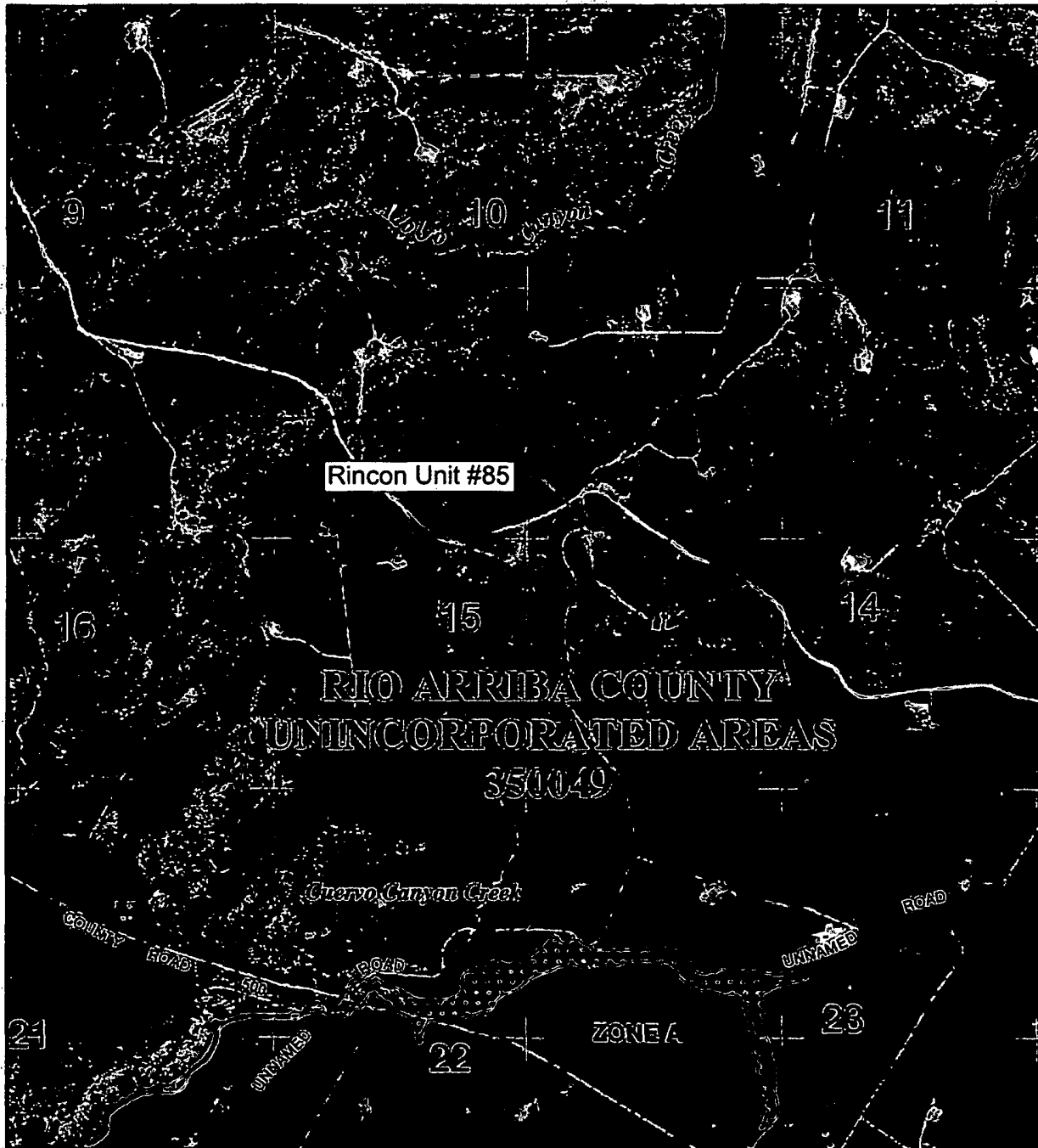
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Chevron North America/Rincon Unit #85

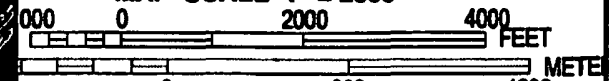
08/14/2012

USGS Karst Map Legend

- ☐ Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in metamorphosed limestone, dolostone, and marble
- ☐ Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in moderately to steeply dipping beds of carbonate rock
- ☐ Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in gently dipping to flat-lying beds of carbonate rock
- ☐ Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in gently dipping to flat-lying beds of carbonate rock beneath an overburden of
- ☐ Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in moderately to steeply dipping beds of gypsum
- ☐ Fissures, tubes, and caves over 1,000 ft (300 m) long; 50 ft (15 m) to over 250 ft (75 m) vertical extent; in gently dipping to flat-lying beds of gypsum
- ☐ Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in metamorphosed limestone, dolostone, and marble
- ☐ Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in crystalline, highly siliceous, intensely folded carbonate rock
- ☐ Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in moderately to steeply dipping beds of carbonate rock
- ☐ Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in gently dipping to flat-lying beds of carbonate rock
- ☐ Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in gently dipping to flat-lying beds of carbonate rock beneath an overburden of
- ☐ Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in moderately to steeply dipping beds of gypsum
- ☐ Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in gently dipping to flat-lying beds of gypsum
- ☐ Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in gently dipping to flat-lying beds of gypsum beneath an overburden of nongyps
- ☐ Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in carbonate zones in highly calcitic granite (Alaska only)
- ☐ Fissures, tubes, and caves generally absent; where present in small isolated areas, less than 50 ft (15 m) long; less than 50 ft (15 m) vertical extent; in crystalline, highly siliceous inter
- ☐ Fissures, tubes, and caves generally absent; where present in small isolated areas, less than 50 ft (15 m) long; less than 50 ft (15 m) vertical extent; in moderately to steeply dipping b
- ☐ Fissures, tubes, and caves generally absent; where present in small isolated areas, less than 50 ft (15 m) long; less than 50 ft (15 m) vertical extent; in gently dipping to flat-lying beds
- ☐ Fissures and voids present to a depth of 250 ft (75 m) or more in areas of subsidence from piping in thick, unconsolidated material
- ☐ Fissures and voids present to a depth of 50 ft (15 m) in areas of subsidence from piping in thick, unconsolidated material
- ☐ Fissures, tubes, and tunnels present to a depth of 250 ft (75 m) or more in lava
- ☐ Fissures, tubes, and tunnels present to a depth of 50 ft (15 m) in lava
- ☐ Transparent: no karst



MAP SCALE 1" = 2000'



PANEL 1225D

FIRM **FLOOD INSURANCE RATE MAP** **RIO ARRIBA COUNTY,** **NEW MEXICO** **AND INCORPORATED AREAS**

PANEL 1225 OF 3175

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
RIO ARRIBA COUNTY	350049	1225	D

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
35039C1225D

EFFECTIVE DATE
MARCH 15, 2012

Federal Emergency Management Agency

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