

ABOVE THIS LINE FOR DIVISION USE ONLY

**NEW MEXICO OIL CONSERVATION DIVISION**  
 - Engineering Bureau -  
 1220 South St. Francis Drive, Santa Fe, NM 87505



REC'D OGD

2013 NOV -8 A 10:15

**ADMINISTRATIVE APPLICATION CHECKLIST**

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

**Application Acronyms:**

- [NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]**
- [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]**
- [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]**
- [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]**
- [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]**
- [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]**

[1] **TYPE OF APPLICATION - Check Those Which Apply for [A]**

- [A] Location - Spacing Unit - Simultaneous Dedication  
 NSL  NSP  SD

Check One Only for [B] or [C]

- [B] Commingling - Storage - Measurement  
 DHC  CTB  PLC  PC  OLS  OLM

- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  
 WFX  PMX  SWD  IPI  EOR  PPR  
 Central Bisti SWD 161  
 30-045-31606  
 SWD-913

- [D] Other: Specify SWD-913 & SWD-913-A

[2] **NOTIFICATION REQUIRED TO: - Check Those Which Apply, or Does Not Apply**

- [A]  Working, Royalty or Overriding Royalty Interest Owners
- [B]  Offset Operators, Leaseholders or Surface Owner
- [C]  Application is One Which Requires Published Legal Notice
- [D]  Notification and/or Concurrent Approval by BLM or SLO  
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E]  For all of the above, Proof of Notification or Publication is Attached, and/or,
- [F]  Waivers are Attached

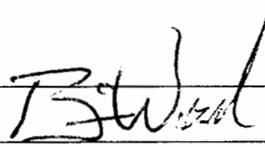
[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Brian Wood		Consultant	11-7-13
Print or Type Name	Signature	Title	Date
		brian@permitswest.com	
		e-mail Address	

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: \_\_\_\_\_ Secondary Recovery \_\_\_\_\_ Pressure Maintenance XXX Disposal \_\_\_\_\_ Storage  
Application qualifies for administrative approval? \_\_\_\_\_ Yes \_\_\_\_\_ No
- II. OPERATOR: ELM RIDGE EXPLORATION COMPANY, LLC  
ADDRESS: P. O. BOX 156, BLOOMFIELD, NM 87413  
CONTACT PARTY: BRIAN WOOD (PERMITS WEST, INC.) PHONE: 505 466-8120
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.  
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? \_\_\_\_\_ Yes XXX No  
If yes, give the Division order number authorizing the project: \_\_\_\_\_
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
- |  |                                     |
|--|-------------------------------------|
|  | <b><u>Central Bisti SWD 161</u></b> |
| 1. Proposed average and maximum daily rate and volume of fluids to be injected;  | <b><u>30-045-31606</u></b>          |
| 2. Whether the system is open or closed;   | <b><u>SWD-913</u></b>               |
| 3. Proposed average and maximum injection pressure;  |                                     |
| 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,   |                                     |
| 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.). |                                     |
- \*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- \*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- \*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- NAME: BRIAN WOOD  TITLE: CONSULTANT  
SIGNATURE: \_\_\_\_\_ DATE: NOV. 5, 2013  
E-MAIL ADDRESS: brian@permitswest.com
- \* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: \_\_\_\_\_

### III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

### XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.



**INJECTION WELL DATA SHEET**

Tubing Size: 3-1/2" Lining Material: PLASTIC

Type of Packer: ARROW SET DB OR ITS EQUIVALENT

Packer Setting Depth: 6,685' OR DEEPER

Other Type of Tubing/Casing Seal (if applicable): \_\_\_\_\_

Additional Data

1. Is this a new well drilled for injection? XXX Yes        No

If no, for what purpose was the well originally drilled? \_\_\_\_\_

\_\_\_\_\_

2. Name of the Injection Formation: ENTRADA

3. Name of Field or Pool (if applicable): SWD; ENTRADA (96436)

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. \_\_\_\_\_

NOT YET PERFORATED IN ANY ZONE

\_\_\_\_\_

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: \_\_\_\_\_

OVER: FRUITLAND (789'), PICTURE CLIFF (1,117'), & GALLUP (4,566')

UNDER: NONE IN THE AREA OF REVIEW

\_\_\_\_\_

\_\_\_\_\_

ELM RIDGE EXPLORATION COMPANY, LLC  
CENTRAL BISTI SWD #161  
1067' FNL & 2286' FEL  
SEC. 16, T. 25 N., R. 12 W.  
SAN JUAN COUNTY, NEW MEXICO

PAGE 1

30-045-31606

- I. Purpose is water disposal in the Entrada from 6,785' to 6,940'.
  
- II. Operator: Elm Ridge Exploration Company, LLC  
Operator phone number: (505) 632-3476  
Operator address: P. O. Box 156, Bloomfield, NM 87413  
Contact: Brian Wood (Permits West, Inc.)  
Phone: (505) 466-8120
  
- III. A. (1) Lease: NM State Land Office lease E-6597-2  
Lease Size: 640 acres  
Lease Area: all Section 16, T. 25 N., R. 12 W.  
Closest Lease Line: 1,067'  
Well Name & Number: Central Bisti SWD #161  
Well Location: 1067' FNL and 2286' FEL Sec. 16, T. 25 N., R. 12 W.  
(see Exhibit A)
  
- A. (2) Spud date was February 17, 2005. No injection has occurred to date. Surface casing (9-5/8", 36#, J-55) was set at 416' in a 12-1/4" hole and cemented to the surface with ≈230 sacks standard cement. Twelve barrels were circulated to the surface. Pressure tested to 1,500 psi. Witnessed by Darell Davis of NMOCD. Production casing (7", 23#, N-80) was set at 7,106' in a 7,112' deep 8-3/4" hole and cemented to the surface. Lead with slurry of 800 sacks 50/50/standard poz and circulated 70 barrels to the surface. Tailed with 450 sacks 65/35 standard poz and circulated 40 barrels to the surface. Pressure tested to 1,500 psi. Mechanical integrity of the casing was assured by hydraulically pressure testing both strings to 1,500 psi.
  
- A. (3) Tubing will be 3-1/2" 9.3# N-80 plastic lined injection string. It will be set at ≥6,685' (disposal interval will be 6,785' to 6,940').

- A. (4) Arrow Set Model DB packer or its equivalent will be set at  $\geq 6,685'$  (which will be  $\approx 100'$  above top perforation of  $6,785'$ ).
- B. (1) Disposal zone will be the Entrada sandstone. Fracture gradient is expected to be a normal  $\approx 0.70$  psi per foot.
- B. (2) Disposal interval will be  $6,785'$  to  $6,940'$ . Interval will be perforated ( $0.43''$ ) with four shots per foot.
- B. (3) Well has been drilled, but not yet perforated. It will be for the exclusive use by Elm Ridge and for the sole purpose of water disposal from present and future Elm Ridge wells. Water analyses from Elm Ridge wells in the Fruitland coal and Gallup sandstone are attached.
- B. (4) Well bore will be perforated from  $6,785'$  to  $6,940'$ .
- B. (5) Top of the Entrada is at  $6,781'$ . Oil is produced elsewhere in the San Juan Basin from the Entrada. Closest Entrada production is 50 miles southeast in the Ojo Encino Entrada Pool. Bottom of the closest overlying actual productive formation (Gallup) is at  $\approx 4,885'$ . There will be a  $\approx 1,900'$  interval between the highest injection perforation and the bottom of the Gallup. Bottom of the closest overlying potentially productive formation (Dakota) is at  $\approx 5,900'$ . There will be a  $\approx 885'$  interval between the highest injection perforation and the bottom of the Dakota. There is no underlying productive formation within at least a dozen miles.

IV. This is not an expansion of an existing injection project. (Elm Ridge has a water flood in the Central Bisti Unit, but it is in the Lower Gallup - not the Entrada.)

**ELM RIDGE EXPLORATION COMPANY, LLC  
CENTRAL BISTI SWD #161  
1067' FNL & 2286' FEL  
SEC. 16, T. 25 N., R. 12 W.  
SAN JUAN COUNTY, NEW MEXICO**

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V. A map (See Exhibit B) is attached showing all 13 well bores (7 P & A + 4 oil + 2 gas) within a half-mile radius (= area of review). The wells within the area of review are summarized on the next page.

OPERATOR	WELL	T. 25 N., R. 12 W.	ZONE	TD	STATUS	DISTANCE	API 30-045
Elm Ridge	CBU 69	NWNE Sec. 16	Gallup	4885	Oil Well	107'	-05424
Elm Ridge	CBU 40	NENW Sec. 16	Gallup	4860	P & A	1,005'	-05445
Elm Ridge	CBU 38	NENE Sec. 16	Gallup	5150	Oil Well	1,198'	-05423
Hixon	Kelly State 1	NENE Sec. 16	Picture Cliff	1330	P & A	1,198'	-22383
Elm Ridge	Bisti Coal 16-1	SWNE Sec. 16	Fruitland	1265	Gas Well	1,284'	-27763
Elm Ridge	CBU 44	SENE Sec. 16	Gallup	4897	P & A	1,365'	-05394
Elm Ridge	CBU 36	SWSE Sec. 9	Gallup	4930	P & A	1,397'	-05448
Elm Ridge	CBU 71	SESE Sec. 9	Gallup	4880	Oil Well	1,905'	-05447
Elm Ridge	CBU 35	SESW Sec. 9	Gallup	5011	P & A	2,002'	-05458
Elm Ridge	CBU 96	SENE Sec. 16	Gallup	4960	Oil Well	2,041'	-25871
Hixon	CBU 41	NWNW Sec. 16	Gallup	4900	P & A	2,369'	-05432
Hixon	CBU 47	NESW Sec. 16	Gallup	4880	P & A	2,452'	-05367
Elm Ridge	Bisti Coal 16-2	NESW Sec. 16	Fruitland	1265	Gas Well	2,508'	-27764

There are 182 (112 P & A + 66 oil or gas + 3 water injection + 1 water) wells within a two-mile radius (see Exhibit C).

The three water injection wells are over a mile away, are water flood wells in the Bisti Lower Gallup, and are in Elm Ridge's Central Bisti Unit (CBU). Those three wells are:

- CBU 57 (API 30-045-05528) 660 FSL & 1980 FEL 5-25n-12w
- CBU 63 (API # 30-045-05486) 1980 FNL & 660 FWL 8-25n-12w
- CBU 88 (API # 30-045-25913) 380 FNL & 1650 FEL 8-25n-12w

Maps showing all leases (State, Navajo allotted, or BLM) within a half-mile (see Exhibit D) and all leases (State, Navajo allotted, or BLM) within two miles (see Exhibit E) are attached. Details on the leases within a half-mile are:

T. 25 N., R. 12 W.	TYPE LEASE	LEASE #	ENTRADA LESSEE(S)
SW4 Sec. 9	Navajo Allotted	14-20-603-326	Central Resources
SE4 Sec. 9	Navajo Allotted	14-20-603-1228	ConocoPhillips
W2SW4 Sec. 10 & W2NW4 Sec. 15	BLM	NM 070322A	ConocoPhillips
all Sec. 16	State	EO-6597-2	ConocoPhillips & Energen

**ELM RIDGE EXPLORATION COMPANY, LLC  
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**30-045-31606**

VI. Thirteen wells are within a half-mile. None penetrated the Entrada.

OPERATOR	WELL	T. 25 N., R. 12 W.	ZONE	TD	STATUS	DISTANCE	API 30-045
Elm Ridge	CBU 69	NWNE Sec. 16	Gallup	4885	Oil Well	107'	-05424
Elm Ridge	CBU 40	NENW Sec. 16	Gallup	4860	P & A	1,005'	-05445
Elm Ridge	CBU 38	NENE Sec. 16	Gallup	5150	Oil Well	1,198'	-05423
Hixon	Kelly State 1	NENE Sec. 16	Picture Cliff	1330	P & A	1,198'	-22383
Elm Ridge	Bisti Coal 16-1	SWNE Sec. 16	Fruitland	1265	Gas Well	1,284'	-27763
Elm Ridge	CBU 44	SENE Sec. 16	Gallup	4897	P & A	1,365'	-05394
Elm Ridge	CBU 36	SWSE Sec. 9	Gallup	4930	P & A	1,397'	-05448
Elm Ridge	CBU 71	SESE Sec. 9	Gallup	4880	Oil Well	1,905'	-05447
Elm Ridge	CBU 35	SESW Sec. 9	Gallup	5011	P & A	2,002'	-05458
Elm Ridge	CBU 96	SENE Sec. 16	Gallup	4960	Oil Well	2,041'	-25871
Hixon	CBU 41	NWNW Sec. 16	Gallup	4900	P & A	2,369'	-05432
Hixon	CBU 47	NESW Sec. 16	Gallup	4880	P & A	2,452'	-05367
Elm Ridge	Bisti Coal 16-2	NESW Sec. 16	Fruitland	1265	Gas Well	2,508'	-27764

- VII. 1. Average injection rate = 1,000 bwpd. Maximum rate = 2,000 bwpd.  
2. System will initially be open (water will be trucked). A pipeline will be laid at a later date. Facilities will include six 300 barrel water tanks, 2 filtration units, 2 injection pumps, and a 30' x 40' building.  
3. Average injection pressure = 1,200 psi Maximum pressure = 1,357 psi  
4. Water source will be present and future Elm Ridge wells in the San Juan Basin. Water analyses (Exhibit F) are attached. A summary follows.

Parameter	Fruitland	Gallup	Gallup	Entrada
bicarbonates	752.6	497.7	389.6	5612
calcium	258.7	517.4	239.5	176
carbonates				40
chlorides	5970.1	12736.3	13173.7	2200
H2S	0	0	0	
iron	0	0	5	0
magnesium	495.7	41	873.1	15
pH	7.5	7.8	7.4	8.4
potassium	160	100	150	200
resistivity	0.45	0.75	0.62	0.89
sodium	2919.8	7069.4	6760.6	4165
sulfates	0	0	0	2000
specific gravity	1.005	1.005	1.002	1.005
TDS	10557.4	21332.65	21592.05	14408

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5. The Entrada has not been proven productive within two miles of the proposed well. In general, Entrada water near recharge zones (basin fringe) has a specific conductance of <1,500  $\mu$ mhos. Entrada water from deeper parts of the basin has a specific conductance of >10,000  $\mu$ mhos. Stone et al in Hydrogeology and water resources of San Juan Basin, New Mexico wrote, "Generally, however, water from the Entrada is not suitable for drinking, especially in deeper parts of the basin." Summaries of analyses of Entrada produced water follow. The samples (see Exhibit G) are from Dome's Santa Fe 20 #1 (30-045-22291) in SW4NE4 20-21n-8w ( $\approx$ 31 miles southeast) and Merrion's Eagle Mesa #1 (30-043-20175) in SW4SW4 12-19n-4w ( $\approx$ 60 miles southeast).

<u>Parameter</u>	<u>Santa Fe 20 #1</u>	<u>Eagle Mesa #1</u>
Bicarbonate	2546 mg/l	1220 mg/l
Calcium	27 mg/l	160 mg/l
Chloride	903 mg/l	1773 mg/l
Iron	0.9 mg/l	0 mg/l
Magnesium	8 mg/l	49 mg/l
pH	7.73	7.32
Sodium	3228 mg/l	3726 mg/l
Sulfate	4400 mg/l	5000 mg/l
Specific Gravity	1.009	1.010
Total Dissolved Solids	11,114 mg/l	11,928 mg/l

VIII. The Entrada sandstone is very porous and permeable æolian sandstone. It produces oil elsewhere in the basin (e.g., Eagle Mesa, Leggs, Media, Ojo Encino, Papers Wash, Snake Eyes Fields). It is over 331' thick in the well bore. Logged well bore formation tops are:

Nacimiento Formation: 0'  
Fruitland Formation: 789'  
Pictured Cliffs Sandstone: 1,117'  
Lewis Shale: 1,270'  
Chacra Sandstone: 1,445'  
Cliff house Sandstone: 1,855'  
Menefee Formation: 2,520'

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Point Lookout Sandstone: 3,559'  
Mancos Shale: 3,792'  
Gallup: 4,566'  
Greenhorn: 5,464'  
Dakota: 5,519'  
Entrada: 6,781'  
Total Depth: 7,112' (still in Entrada)

One water is well within a 2-mile radius. It is >8,000' southeast and 40' deep. Depth to water is 8'. The well bore is in the Nacimiento Formation. No existing underground drinking water sources are below the Entrada within a 2-mile radius. There is over a mile of vertical separation between the bottom of the lowest existing underground water source and the top of the Entrada.

IX. The well will be stimulated with  $\approx$ 150,000 pounds 20/40 Ottawa sand with Ambormax gel.

X. CNL/FDC, IES logs will be run. Copies will then be provided to the NMOCD.

XI. There are no water wells within two miles that penetrate the Entrada. The only water well within 2 miles is 40' deep.

XII. Elm Ridge is not aware of any geologic or engineering data that may indicate the Entrada is in hydrologic connection with any underground sources of water. There is 6,741' of vertical separation and at least three shale zones (Kirtland, Lewis, and Menefee) between the top (6,781') of the Entrada and the bottom (40') of the closest water well. Closest Quaternary fault is >70 miles east in the Rio Grande Valley (Exhibit H). At least 53 saltwater disposal and 2 injection wells have been drilled into the Entrada.

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XIII. Notice (this application) has been sent (Exhibit I) to the surface owner (Giant Mid-Continent Inc.), and Entrada lease right holders (Central Resources, ConocoPhillips, Energen), and lessors (BLM, Farmington Indian Minerals Office, and NM State Land Office) within a half-mile. A legal ad (see Exhibit J) was published on October 31, 2013.

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

State of New Mexico  
Environ. Minerals & Natural Resources Department

Form C-102  
Revised February 21, 1994  
Instructions on back  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

DISTRICT II  
P.O. Drawer DD, Arlanza, N.M. 88211-0719

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

AMENDED REPORT

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

DISTRICT IV  
P.O. Box 2088, Santa Fe, NM 87504 2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> A1# Number <b>30-045-</b>	<sup>2</sup> Pool Code <b>-96436</b>	<sup>3</sup> Pool Name <b>SWD - ENTRADA</b>
<sup>4</sup> Property Code <b>32166</b>	<sup>5</sup> Property Name <b>CENTRAL BISTI UNIT WDW</b>	
<sup>6</sup> OGRID No. <b>149052</b>	<sup>7</sup> Operator Name <b>ELM RIDGE RESOURCES, INC.</b>	
	<sup>8</sup> Well Number <b>161</b>	<sup>9</sup> Elevation <b>6233</b>

<sup>10</sup> Surface Location

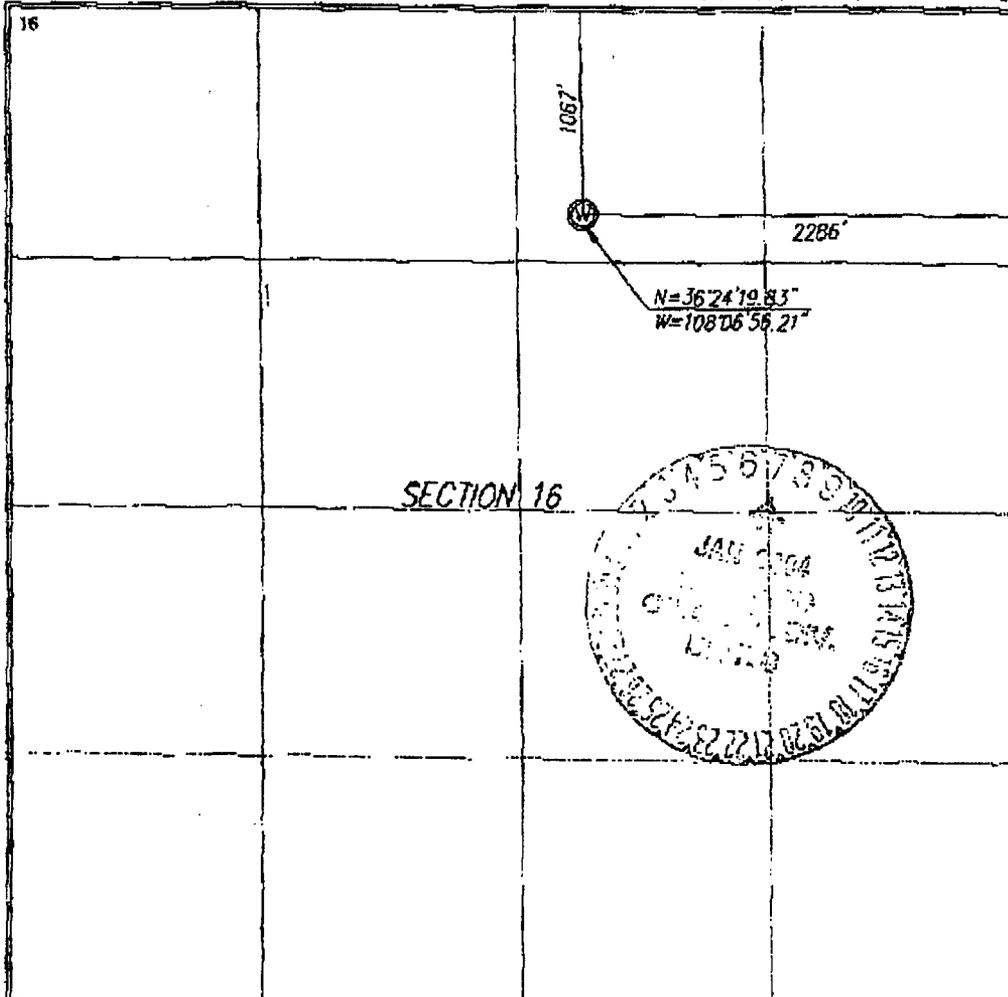
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
	16	25N	12W	B	1067	NORTH	2286	EAST	SAN JUAN

<sup>11</sup> 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

<sup>12</sup> Dedicated Acres	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No

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



<sup>17</sup> OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

*Brian Wood*

Signature **BRIAN WOOD**

Printed Name **CONSULTANT**

Title **JAN. 3, 2004**

Date

<sup>18</sup> SURVEYOR CERTIFICATION

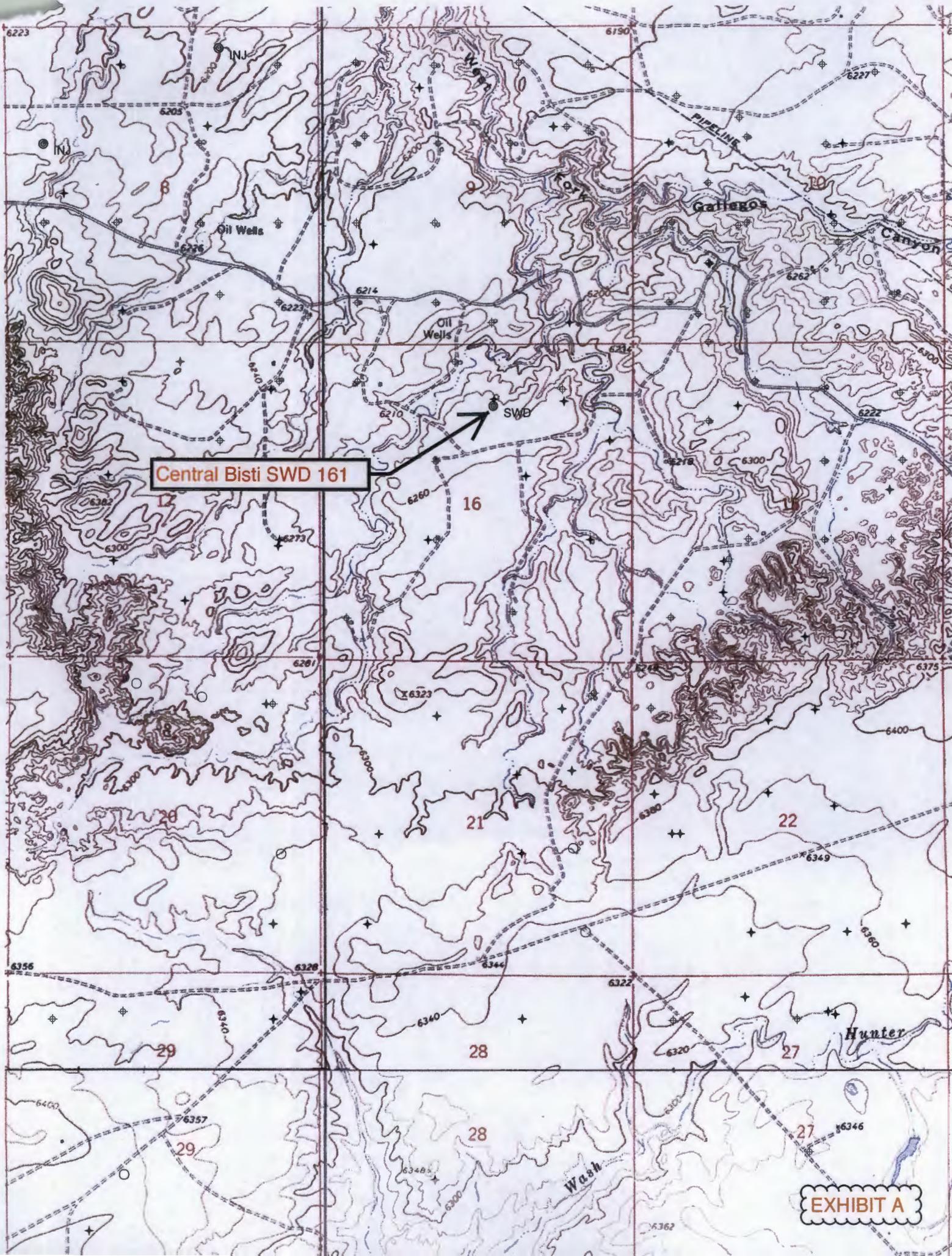
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief

**APRIL 8, 2002** **EXHIBIT A**

Date of Survey  
Signature and Seal of Surveyor

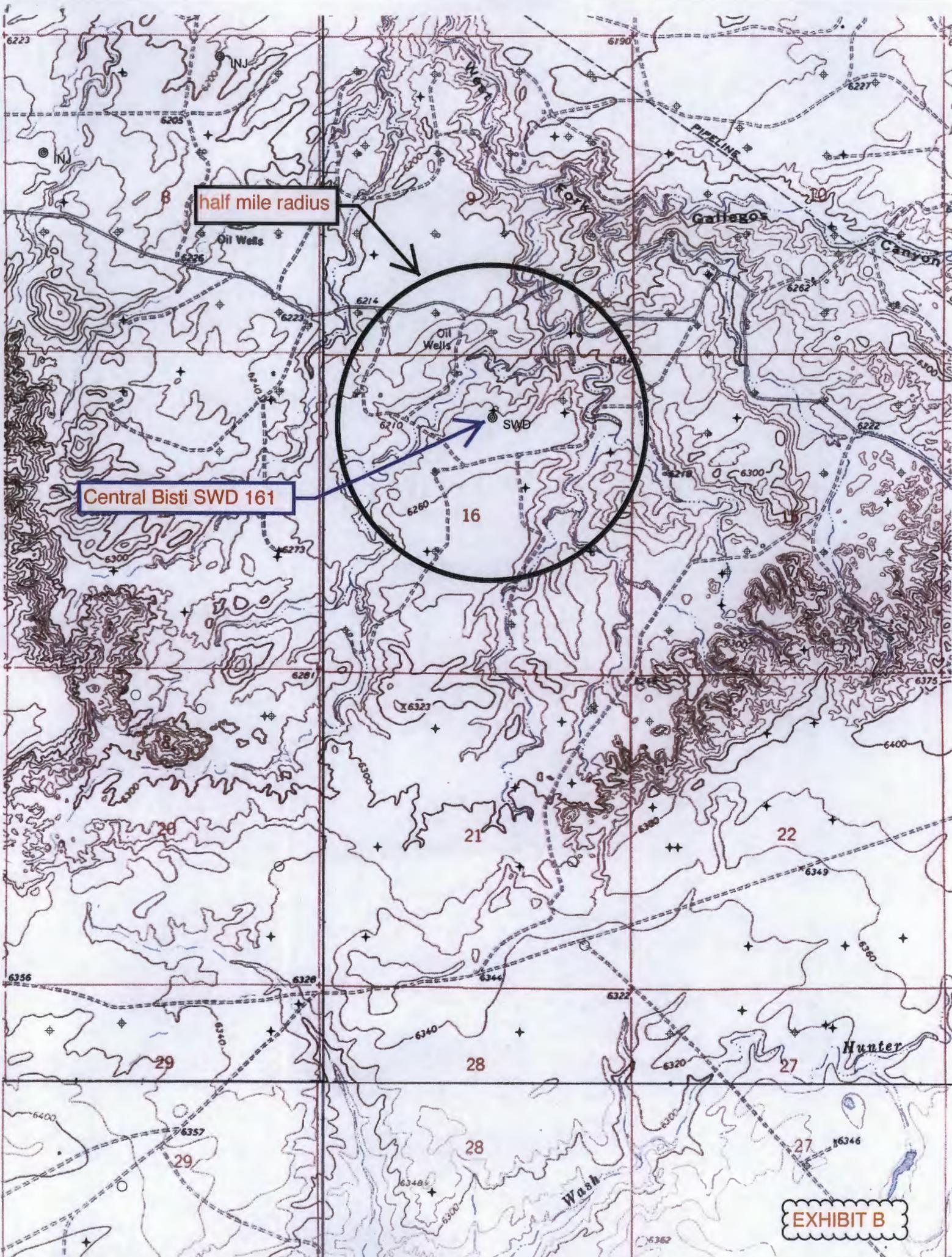


*Edgar L. Risenhoop*  
Certificate No. **N.M. 5971**



Central Bisti SWD 161

EXHIBIT A



half mile radius

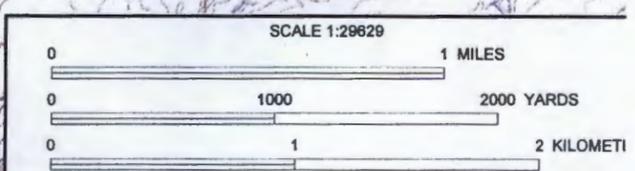
Central Bisti SWD 161

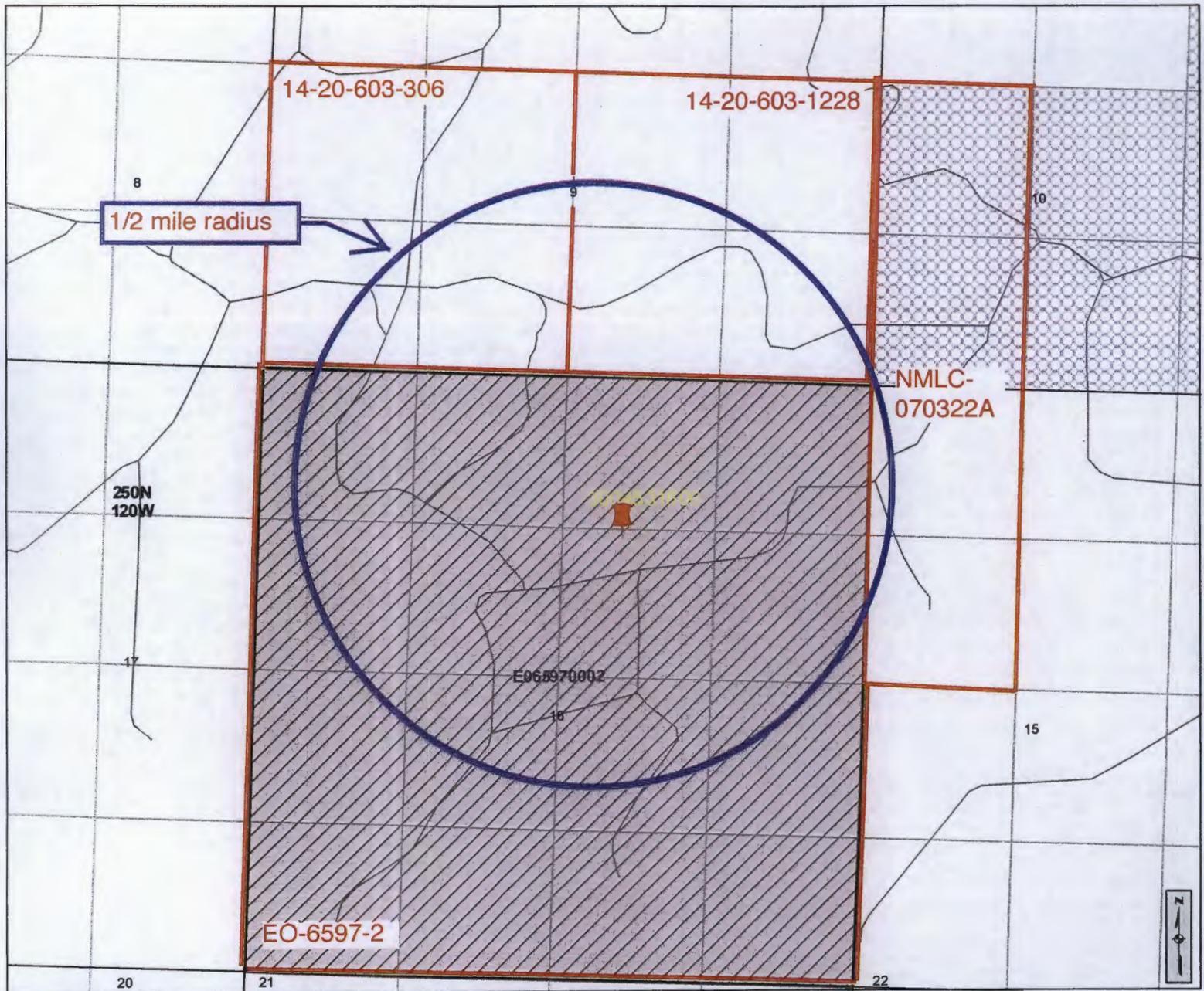
EXHIBIT B

Central Bisti SWD 161

2 mile radius

EXHIBIT C



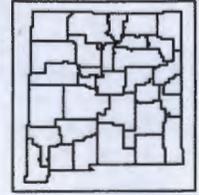


- Cartographic Features**
- County Boundaries
  - County Seats
  - City, Town or Village
  - SLO District Offices
  - SLO District Boundary
  - Hwy Mileposts
  - Interstate
  - NM Hwy
  - US Hwy
  - Local Road
  - Continental Divide
- Federal Minerals Ownership**
- All Minerals
  - Coal Only
  - Oil and Gas Only
  - Oil, Gas and Coal Only
  - Other Minerals
- State Trust Lands**
- Surface Estate
  - Subsurface Estate
  - Surface and Subsurface Estate
- State Leases**
- Oil and Gas Leases
  - Agricultural Leases
  - Commercial Leases
  - Minerals Leases
  - Not Available for Oil and Gas Leasing
  - Oil and Gas Leasing Influenced by Restriction
- Oil and Gas Related Features**
- Oil and Gas Unit Boundary
  - Participating Areas in Units
  - Geologic Regions
  - Volcanic Vents
  - NMOC Order R-111-P
  - Potash Enclave Outline
- NMOC Oil and Gas Wells**
- CO<sub>2</sub>
  - Injection
  - Oil
  - Water
  - Gas
  - Miscellaneous
  - Salt Water Disposal
  - DA or PA

**New Mexico State Land Office**  
**Oil, Gas and Minerals**  
 00.03 0.07 0.14 0.21 0.28  
 Miles  
 Universal Transverse Mercator Projection, Zone 13  
 1983 North American Datum

**EXHIBIT D**

The New Mexico State Land Office assumes no responsibility or liability for, or in connection with, the accuracy, reliability or use of the information provided here, in State Land Office data layers or any other data layer.  
 Land Office Geographic Information Center  
 logic@sls.state.nm.us



Created On: 10/29/2013 11:27:15 AM

www.nmstatelands.org

**Cartographic Features**

- County Boundaries
- County Seats
- City, Town or Village
- SLO District Offices
- SLO District Boundary
- Hwy Mileposts
- Interstate
- NM Hwy
- Local Road
- US Hwy
- Continental Divide

**Federal Minerals Ownership**

- All Minerals
- Coal Only
- Oil and Gas Only
- Oil, Gas and Coal Only
- Other Minerals

**State Trust Lands**

- Surface Estate
- Subsurface Estate
- Surface and Subsurface Estate

**State Leases**

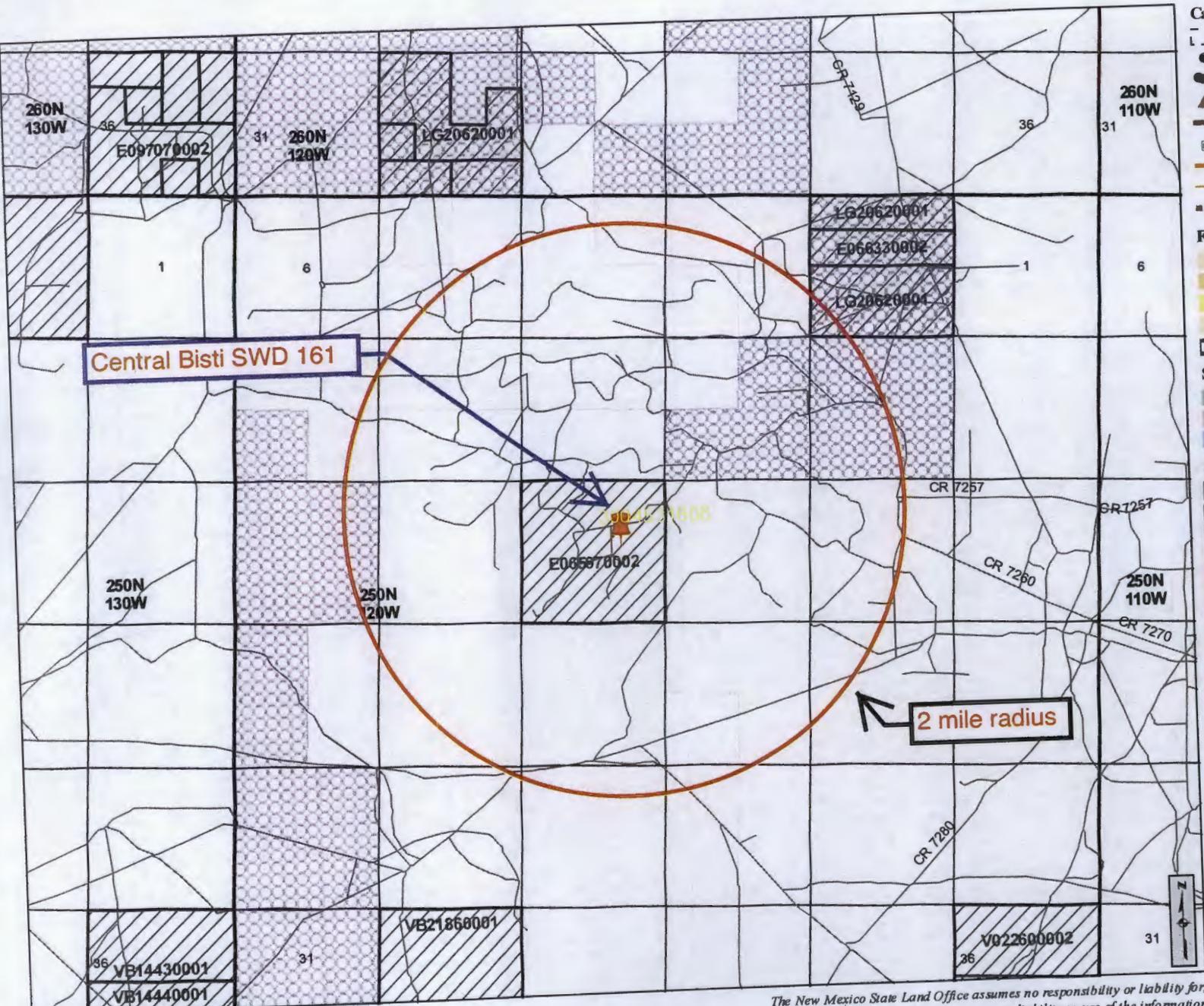
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- Agricultural Leases
- Commercial Leases
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- Not Available for Oil and Gas Leasing
- Oil and Gas Leasing Influenced by Restriction

**Oil and Gas Related Features**

- Oil and Gas Unit Boundary
- Participating Areas in Units
- Geologic Regions
- Volcanic Vents
- NMOC Order R-111-P Potash Enclave Outline

**NMOC Oil and Gas Wells**

- CO<sub>2</sub>
- Gas
- Injection
- Miscellaneous
- Oil
- Salt Water Disposal
- Water
- DA or PA



**New Mexico State Land Office**  
**Oil, Gas and Minerals**

0 0.15 0.3 0.6 0.9 1.2 Miles

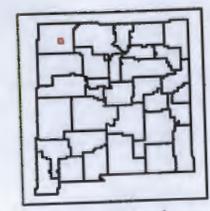
Universal Transverse Mercator Projection, Zone 13  
 1983 North American Datum

**EXHIBIT E**

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Land Office Geographic Information Center  
 logic@slo.state.nm.us

Created On: 10/29/2013 2:04:57 PM



www.nmstatelands.org



**American Energy Services**

Water Analysis Results Sheet

Farmington NM

708 S. Tucker

Phone:(505)325-4192

Fax:(505)564-3524

Zip:87401

Operator:	Elm Ridge	Date:	October 15, 2002
Well :	B.C. 28-1	District:	Farmington
Formation:	Coal	Requested by:	Tim Duggan
County:	San Juan	Technician:	Mike Brown
Depth:	1200	Source:	Well

**PHYSICAL AND CHEMICAL DETERMINATION**

SPECIFIC GRAVITY: 1.005 AT 67 Degrees F.			
pH:	7.5	SULFATES:	0 ppm
IRON:	0 ppm	CALCIUM:	258.7 ppm
H2S:	0 ppm	BICARBONATES:	752.6 ppm
MAGNESIUM:	495.7 ppm	RESISTIVITY:	0.45 ohm/meter
		CHLORIDES:	5970.1 ppm
		SODIUM :	2918.8 ppm
		POTASSIUM:	160.0 ppm
		TDS:	10557.4 ppm

CaCO3 Scale Tendency = Remote

CaSO4 Scale Tendency = Remote

REMARKS:

Data contained in this document is based on the best information & most current test procedures and materials available. No liability is expressed or implied.

EXHIBIT F



### American Energy Services

Water Analysis Results Sheet

Farmington NM

708 S. Tucker

Phone:(505)325-4192

Fax:(505)564-3524

Zip:87401

Operator:	Elm Ridge	Date:	October 15, 2002
Well :	C.T.B.	District:	Farmington
Formation:	Gallup	Requested by:	Tim Duggan
County:	San Juan	Technician:	Mike Brown
Depth:		4800 Source:	Well

#### PHYSICAL AND CHEMICAL DETERMINATION

SPECIFIC GRAVITY:	1.005	AT 67 Degrees F.	
pH:	7.8		SULFATES: 0 ppm
IRON:	0	ppm	CALCIUM: 517.4 ppm
H2S:	0	ppm	BICARBONATES: 497.7 ppm
			RESISTIVITY: 0.75 ohm/meter
			CHLORIDES: 12736.3 ppm
			SODIUM : 7069.4 ppm
MAGNESIUM:	411.0	ppm	POTASSIUM: 100.0 ppm
			TDS: 21332.65 ppm

CaCO3 Scale Tendency = Remote

CaSO4 Scale Tendency = Remote

REMARKS:

Data contained in this document is based on the best information & most current test procedures and materials available. No liability is expressed or implied.

EXHIBIT F



**American Energy Services**  
Water Analysis Results Sheet  
Farmington NM  
708 S. Tucker  
Phone: (505) 325-4192  
Fax: (505) 564-3524  
Zip: 87401

Operator:	Elm Ridge	Date:	October 15, 2002
Well :	<del>Joe Hixon #1</del> Joe Hixon #1	District:	Farmington
Formation:	NWA <del>AD</del> SESW 22-25w-12w	Requested by:	Tim Duggan
County:	San Juan	Technician:	Mike Brown
Depth:	4800	Source:	Well

**PHYSICAL AND CHEMICAL DETERMINATION**

SPECIFIC GRAVITY:	1.002	AT 67 Degrees F.	
pH:	7.4		SULFATES: 0 ppm
IRON:	5	ppm	CALCIUM: 239.5 ppm
H2S:	0	ppm	BICARBONATES: 389.6 ppm
			RESISTIVITY: 0.62 ohm/meter
			CHLORIDES: 13173.7 ppm
			SODIUM: 6760.6 ppm
MAGNESIUM:	873.1	ppm	POTASSIUM: 150.0 ppm
			TDS: 21592.05 ppm

CaCO3 Scale Tendency = Remote

CaSO4 Scale Tendency = Remote

REMARKS:

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EXHIBIT F

# HALLIBURTON

## Water Analysis Report

30-045 33217  
F-11-24n-11w

To: Dugan Production Date: 11/10/2005  
Submitted by: Halliburton Energy Services Date Rec: 11/10/2005  
Attention: Darrin Steed Report #: FLMM5A44  
Well Name: Herry Monster #3 SWD Formation: Entrada/SWD

Specific Gravity	1.005	
pH	8.4	
Resistivity	0.89	@ 70° F
Iron (Fe)	0	Mg / L
Potassium (K)	200	Mg / L
Sodium (Na)	4165	Mg / L
Calcium (Ca)	176	Mg / L
Magnesium (Mg)	15	Mg / L
Chlorides (Cl)	2200	Mg / L
Sulfates (SO4)	2000	Mg / L
Carbonates (CO3)	40	Mg / L
Bicarbonates (HCO3)	5612	Mg / L
Total Dissolved Solids	14408	Mg / L

Respectfully: Bill Loughridge  
Title: Senior Scientist  
Location: Farmington, NM

EXHIBIT F

NOTICE: This report is limited to the described sample tested. Any person using or relying on this report agrees that Halliburton shall not be liable for any loss or damage whether due to act or omission resulting from such report or its use.



**CORE LABORATORIES, INC.**  
*Petroleum Reservoir Engineering*  
**DALLAS, TEXAS**  
**WATER ANALYSIS**

RECEIVED

MAR 25 1977

Minerals Management Inc.

30-045-22291

G-20-21n-8w

File WA - 5

Company Dome Petroleum Corp. Well Name Sante Fe 20 No. 1 Sample No. SS-2

Formation \_\_\_\_\_ Depth \_\_\_\_\_ Sampled From \_\_\_\_\_

Location Sec 20 T 21N R 8W Field \_\_\_\_\_ County San Juan State N.M.

Date Sampled 3-9-77 Date Analyzed 3-13-77 Engineer RGC

Total Dissolved Solids 11,114.5 mg/L

Sp. Gr. 1.009 @ 70 °F.

Resistivity 1.0 ohm-meters @ 70 °F.

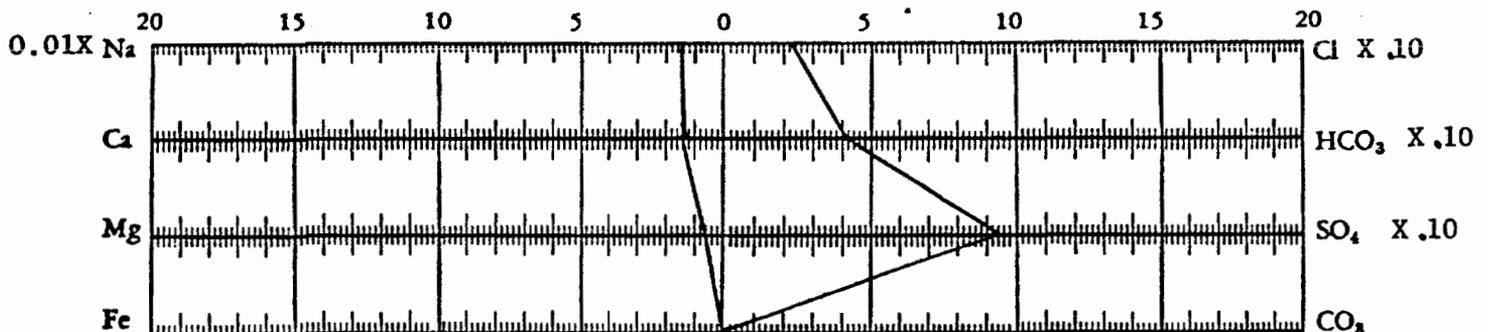
Hydrogen Sulfide Present

pH 7.73

Constituents	meq/L	mg/L
Sodium	<u>140.44</u>	<u>3228.7</u>
Calcium	<u>1.35</u>	<u>27.0</u>
Magnesium	<u>0.73</u>	<u>8.9</u>
Iron	<u>0.03</u>	<u>0.9</u>
Barium	<u>ND</u>	<u>ND</u>

Constituents	meq/L	mg/L
Chloride	<u>25.47</u>	<u>903.0</u>
Bicarbonate	<u>41.73</u>	<u>2546.0</u>
Sulfate	<u>91.61</u>	<u>4400.0</u>
Carbonate	<u>ND</u>	<u>ND*</u>
Hydroxide	<u>ND</u>	<u>ND</u>

\*ND = Less than 0.1 mg/L



Scale: meq/L

All analyses except iron determination performed on a filtered sample.

EXHIBIT G

THE WESTERN COMPANY OF NORTH AMERICA

API WATER ANALYSIS

Company: MERRION	W.C.N.A. Sample No.: S106995
Field: 30-043-20175	Legal Description:
Well: #1	Lease or Unit: EAGLE MESA
Depth: M-12-19n-4w	Water.B/D:
Formation: ENTRADA?	Sampling Point:
State:	Sampled By: STEVE DUNN
County:	Date Sampled: 05/03/95
	Type of Water(Produced,Supply, ect.): PROD.

PROPERTIES

pH: 7.32	Iron, Fe(total): 0
Specific Gravity: 1.010	Sulfide as H2S: 0
Resistivity (ohm-meter): .81	Total Hardness:
Temperature: 64F	(see below)

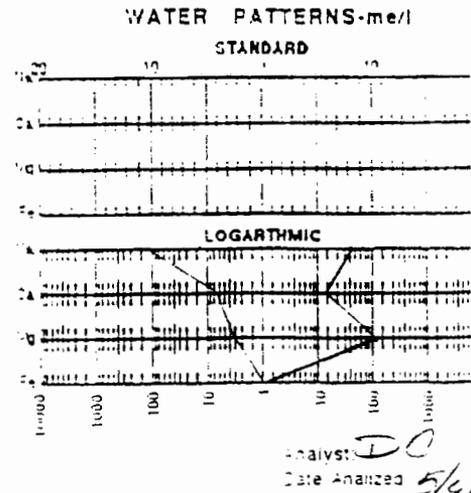
D I S S O L V E D SOLIDS

CATIONS	mg/l	me/l		
Sodium, Na:	3726	: 162	Sample(ml):	1.0 ml of EDTA: .40
Calcium, Ca:	160	: 8	Sample(ml):	1.0 ml of EDTA: .20
Magnesium, Mg:	49	: 4		
Barium, Ba:	N/A	: N/A		
Potassium, K:		:		
ANIONS	mg/l	me/l		
Chloride, Cl:	1773	: 50	Sample(ml):	1.0 ml of AgNO3: .10
Sulfate, SO4:	5000	: 104	Sample(ml):	1.0 ml of H2SO4:
Carbonate, CO3:		:	Sample(ml):	1.0 ml of H2SO4: .20
Bicarbonate, HCO3:	1220	: 20		
Total Dissolved Solids (calculated):	11928		Sample(ml):	1.0 ml of EDTA: .60
Total Hardness:	600			

REMARKS AND RECOMMENDATIONS:

ENTRADA WATER

EXHIBIT G





Central Bisti SWD 161

closest Quaternary fault

EXHIBIT H

Google earth

Imagery Date: 4/9/2013 lat 36.405499° lon -106.115678° elev 6323 ft eye alt 14530 mi

Survey

Space

**PERMITS WEST, INC.**  
 PROVIDING PERMITS for LAND USERS  
 37 Verano Loop, Santa Fe, New Mexico 87508 (505) 466-8120

November 2, 2013

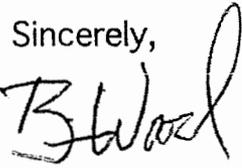
Giant Mid-Continent, Inc.  
 c/o Western Refining  
 1250 W. Washington St., Suite 101  
 Tempe, AZ 85281

Elm Ridge Exploration Company, LLC is applying (see attached application) to activate its Central Bisti SWD #161 water disposal well. As required by New Mexico Oil Conservation Division Rules, I am notifying you of the following proposed water disposal well. This letter is a notice only. No action is needed unless you have questions or objections.

Well Name: Central Bisti SWD #161                      Total Depth: 7,112'  
Proposed Disposal Zone: Entrada (from 6,785' to 6,940')  
Location: 1067' FNL & 2286' FEL Sec. 16, T. 25 N., R. 12 W.,  
 San Juan County, NM on NM State Land Office lease EO-6597-0002  
Approximate Location: ≈22 air miles south-southwest of Bloomfield, NM  
Applicant Name: Elm Ridge Exploration Company, LLC (505) 632-3476  
Applicant's Address: P. O. Box 156, Bloomfield, NM 87413

Submittal Information: Application for a water disposal well will be filed with the NM Oil Conservation Division (NMOCD). If you have an objection, or wish to request a hearing, then it must be filed with the NMOCD within 15 days of receipt of this letter. The NMOCD address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely,  
  
 Brian Wood

7013 0600 0000 5879 2589

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<b>Total Postage &amp; Fees</b>	<b>\$ 7.12</b>

SAN JUAN COUNTY, NM 87503  
 NOV - 6 2013

Sent To: Giant

Street, Apt. No., or PO Box No.  
 City, State, ZIP+4

PS Form 3800, August 2006 See Reverse for Instructions

EXHIBIT I

November 2, 2013

BLM  
 6251 College Blvd.  
 Farmington, NM 87402

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Please call me if you have any questions.

Sincerely,

*Brian Wood*  
 Brian Wood

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 7.17

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 NOV - 6 2013  
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 USPS

Sent To: **BLM**

Street, Apt. No., or PO Box No.  
 City, State, ZIP+4

EXHIBIT 1

November 2, 2013

FIMO  
 6251 College Blvd.  
 Farmington, NM 87402

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Please call me if you have any questions.

Sincerely,

*Brian Wood*  
 Brian Wood

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Total Postage & Fees	\$ 7.17

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Sent To: **FIMO**

Street, Apt. No., or PO Box No.  
 City, State, ZIP+4

PS Form 3800, August 2006

November 2, 2013

NM State Land Office  
 P. O. Box 1148  
 Santa Fe, NM 87504-1148

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 San Juan County, NM on NM State Land Office lease EO-6597-0002  
Approximate Location: ≈22 air miles south-southwest of Bloomfield, NM  
Applicant Name: Elm Ridge Exploration Company, LLC (505) 632-3476  
Applicant's Address: P. O. Box 156, Bloomfield, NM 87413

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Please call me if you have any questions.

Sincerely,



Brian Wood

EXHIBIT 1

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SENT TO: SC OUSPS

SPC Form 3811, Rev. 10/10

November 2, 2013

ConocoPhillips Co.  
 1080 Plaza Office Bldg.  
 Bartlesville OK 74004

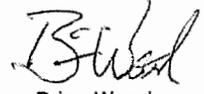
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Sincerely,



Brian Wood

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<b>Total Postage &amp; Fees</b>	<b>\$ 7.17</b>

Postmark: SAN JUAN COUNTY, NEW MEXICO 87505 NOV - 6 2013

SENT TO: ConocoPhillips

SPC Form 3811, Rev. 10/10

November 2, 2013

Central Resources, Inc.  
 1775 Sherman St., Suite 2600  
 Denver, CO 80203

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Please call me if you have any questions.

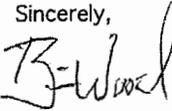
Sincerely,  
  
 Brian Wood

EXHIBIT 1

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Sent To: Central Resources

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PS Form 3800, August 2009

November 2, 2013

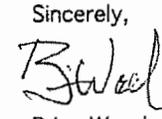
Energen Resources Corporation  
 605 Richard Arrington Blvd. North  
 Birmingham AL 35203

Elm Ridge Exploration Company, LLC is applying (see attached application) to activate its Central Bisti SWD #161 water disposal well. As required by New Mexico Oil Conservation Division Rules, I am notifying you of the following proposed water disposal well. This letter is a notice only. No action is needed unless you have questions or objections.

Well Name: Central Bisti SWD #161      Total Depth: 7,112'  
Proposed Disposal Zone: Entrada (from 6,785' to 6,940')  
Location: 1067' FNL & 2286' FEL Sec. 16, T. 25 N., R. 12 W.,  
 San Juan County, NM on NM State Land Office lease EO-6597-0002  
Approximate Location: ≈22 air miles south-southwest of Bloomfield, NM  
Applicant Name: Elm Ridge Exploration Company, LLC (505) 632-3476  
Applicant's Address: P. O. Box 156, Bloomfield, NM 87413

Submittal Information: Application for a water disposal well will be filed with the NM Oil Conservation Division (NMOCD). If you have an objection, or wish to request a hearing, then it must be filed with the NMOCD within 15 days of receipt of this letter. The NMOCD address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely,  
  
 Brian Wood

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PS Form 3800, August 2009

**AFFIDAVIT OF PUBLICATION**

**COPY OF PUBLICATION**

**Ad No. 69609**

**STATE OF NEW MEXICO  
County of San Juan:**

JOHN ELCHERT, being duly sworn says:  
That HE is the PUBLISHER of THE DAILY  
TIMES, a daily newspaper of general  
circulation published in English at Farmington,  
said county and state, and that the hereto  
attached Legal Notice was published in a  
regular and entire issue of the said DAILY  
TIMES, a daily newspaper duly qualified for  
the purpose within the meaning of Chapter  
167 of the 1937 Session Laws of the State of  
New Mexico for publication and appeared in  
the Internet at The Daily Times web site on  
the following day(s):

Elm Ridge Exploration  
Company, LLC, is ap-  
plying for a saltwater  
disposal well. The  
Central Bisti SWD 161  
will dispose into the  
Entrada from 6,785'  
to 6,940'. It is located  
17 miles west of Blan-  
co Trading Post at  
1067 FNL & 2286 FEL  
Sec. 16, T. 25 N., R. 12  
W., San Juan County.  
Maximum disposal  
rate will be 2,000  
bwpd. Maximum in-  
jection pressure will  
be 1,357 psi. Interest-  
ed parties must file  
objections or requests  
for hearing with the  
NM Oil Conservation  
Division, 1220 South  
Saint Francis Dr., San-  
ta Fe, NM 87505 with-  
in 15 days. Additional  
information can be  
obtained by contact-  
ing: Brian Wood, Per-  
mits West, Inc., 37  
Verano Loop, Santa  
Fe, NM 87508. Phone  
number is (505) 466-  
8120.  
Legal No. 69609 pub-  
lished in The Daily  
Times on Oct. 31, 2013

Thursday, October 31, 2013

And the cost of the publication is \$45.50

  
\_\_\_\_\_

ON 11/3/13 JOHN ELCHERT  
appeared before me, whom I know personally  
to be the person who signed the above  
document.

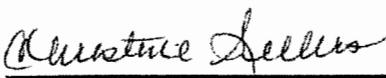
  
\_\_\_\_\_



EXHIBIT J



**C-108 Review Checklist:** Received 11/08/13 Add. Request: — Reply Date: — Suspended: — [Ver 12]

PERMIT TYPE: WFX / PMX / SWD Number: 913-B Permit Date: 02/24/14 Legacy Permits/Orders: SWD-913  
SWD-913-A

Well No. 161 Well Name(s): Central Bisti, SWD

API: 30-0 45-31606 Spud Date: 02/17/2005 New or Old: New (UIC Class II Primacy 03/07/1982)

Footages 1067 FNL / 2286 FEL Lot — or Unit B Sec 16 Tsp 25N Rge 12W County San Juan

General Location: South of Gallegos Canyon / Bisti Oil Field Pool: SWD: Entrada Pool No.: 96436

BLM 100K Map: Toodlena Operator: Elm Ridge Exploration Co OGRID: 149052 Contact: Brian Wood / Permits West

COMPLIANCE RULE 5.9: Inactive Wells: 7 Total Wells: 818 Fincl Assur: OK Compl. Order? No IS 5.9 OK? Date: 02/24/14

WELL FILE REVIEWED  Current Status: Well constructed but perms not completed

WELL DIAGRAMS: NEW: Proposed  or RE-ENTER: Before Conv.  After Conv.  Logs in Imaging: HR Ind. / Density - Navton

Planned Rehab Work to Well: \* Casing portion completed - well not perforated before loss of authority

Well Construction Details:	Sizes (in) Borehole / Pipe	Setting Depths (ft)	Cement Sx or Cf	Cement Top and Determination Method
Planned <input type="checkbox"/> or Existing <input type="checkbox"/> Conductor	—	—	—	—
Planned <input type="checkbox"/> or Existing <input checked="" type="checkbox"/> Surface	12 1/4 / 9 5/8	0 to 416	230	Cir to surface
Planned <input type="checkbox"/> or Existing <input checked="" type="checkbox"/> Interm/Prod	8 3/4 / 7	0 to 7106	800 + 450	Cir to surface
Planned <input type="checkbox"/> or Existing <input type="checkbox"/> Prod/Interm	—	—	—	—
Planned <input type="checkbox"/> or Existing <input type="checkbox"/> Liner/Prod	—	—	—	—
Planned <input checked="" type="checkbox"/> or Existing <input type="checkbox"/> OH (PERF)	8 3/4 / 7	6785 - 6940		

Injection Stratigraphic Units:	Depths (ft)	Injection or Confining Units	Tops?
Adjacent Unit: Litho. Struc. Por.	—	Greenhorn	5464
Confining Unit: Litho. Struc. Por.	+4	Dakota	3519
Proposed Inj Interval TOP:	6785	Entrada SS	6781
Proposed Inj Interval BOTTOM:	6940	—	7112
Confining Unit: Litho. Struc. Por.	—	Chinle Gp	—
Adjacent Unit: Litho. Struc. Por.	—	—	—

Completion/Operation Details:	
Drilled TD	7112 PBDT 7106
NEW TD	— NEW PBDT —
NEW Open Hole	<input type="checkbox"/> or NEW Perfs <input checked="" type="checkbox"/>
Tubing Size	3 1/2 in. Inter Coated? <input checked="" type="checkbox"/> Yes
Proposed Packer Depth	6685 ft
Min. Packer Depth	6685 (100-ft limit)
Proposed Max. Surface Press.	1357 psi
Admin. Inj. Press.	1357 (0.2 psi per ft)

**AOR: Hydrologic and Geologic Information**

POTASH: R-111-P NA Noticed? NA BLM Sec Ord NA WIPP NA Noticed? NA SALADO: T: NA B: NA CLIFF HOUSE 1855

FRESH WATER: Aquifer Shallow Max Depth >100' 1-Mile Wells?  FW Analysis NA HYDRO AFFIRM STAT By Qualified Person

Disposal Fluid: Formation Source(s) alluvial & Nonaments (shallow) Analysis? Yes On Lease  Operator Only  or Commercial

Disposal Interval: Inject Rate (Avg/Max BWPD): 1000/2000 Protectable Waters?: Unknown CAPITAN REEF: thru  adj  NA

HC Potential: Producing Interval? No Formerly Producing? No Method: Logs/DST/P&A/Other Well info 2-Mile Radius Pool Map

AOR Wells: 1/2-M Radius Map? Yes Well List? Yes Total No. Wells Penetrating Interval: 0 Horizontals? 0

Penetrating Wells: No. Active Wells 0 Num Repairs? — on which well(s)? — Diagrams? NA

Penetrating Wells: No. P&A Wells 0 Num Repairs? — on which well(s)? — Diagrams? NA

NOTICE: Newspaper Date 10/31/2013 Mineral Owner SLC Surface Owner BLM / Navajo N. Date 11/2/13

RULE 26.7(A): Identified Tracts? Yes Affected Persons: Giant / Conoco Phillips / Energen / Central Resources N. Date 11/2/13

Permit Conditions: Issues: None

Add Permit Cond: None



New Mexico Energy, Minerals and Natural Resources Department

**Bill Richardson**  
Governor

Joanna Prukop  
Cabinet Secretary  
Reese Fullerton  
Deputy Cabinet Secretary

Mark Fesmire  
Division Director  
Oil Conservation Division



**Administrative Order SWD-913-A**  
**July 10, 2008**

APPLICATION OF ELM RIDGE EXPLORATION COMPANY, LLC FOR PRODUCED  
WATER DISPOSAL, SAN JUAN COUNTY, NEW MEXICO

**ADMINISTRATIVE ORDER  
OF THE OIL CONSERVATION DIVISION**

Under the provisions of Rule 701(B), Elm Ridge Exploration Company, LLC (OGRID No. 149052) made application to the New Mexico Oil Conservation Division for permission to utilize for produced water disposal its Central Bisti SWD Well No. 161 (API No. 30-045-31606) located 1067 feet from the North line and 2286 feet from the East line of Section 16, Township 25 North, Range 12 West, NMPM, San Juan County, New Mexico.

**THE DIVISION DIRECTOR FINDS THAT:**

The application has been duly filed under the provisions of Rule 701(B) of the Division Rules. Satisfactory information has been provided that all offset operators and surface owners have been duly notified. The applicant has presented satisfactory evidence that all requirements prescribed in Rule 701 will be met and no objections have been received within the waiting period prescribed by said rule.

**IT IS THEREFORE ORDERED THAT:**

Elm Ridge Exploration Company, LLC ("operator") is hereby authorized to utilize its Central Bisti SWD Well No. 161 (API No. 30-045-31606) located 1067 feet from the North line and 2286 feet from the East line of Section 16, Township 25 North, Range 12 West, NMPM, San Juan County, New Mexico, in such manner as to permit the injection of produced water for disposal purposes into the Entrada formation through perforations from approximately 6,790 feet to approximately 6,940 feet and through plastic-lined tubing (or as required by the Aztec district office) set in a packer located within 100 feet of the top of the injection interval.



This approval is subject to the operator being in compliance with all other applicable Division rules, including but not limited to Division Rule 40.

IT IS FURTHER ORDERED THAT:

The operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

After installing injection tubing, the casing shall be pressure tested from the surface to the packer setting depth to assure the integrity of said casing.

The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge or an approved *leak detection device* in order to determine leakage in the casing, tubing, or packer.

The injection well or system shall be equipped with a *pressure limiting device* in workable condition which shall, at all times, limit surface injection pressure to the maximum allowable pressure for this well. The wellhead injection pressure on the well shall be limited to **no more than 1358 psi**.

The Director of the Division may authorize an increase in the maximum injection pressure upon a proper showing by the operator that such higher pressure would not result in migration of the injected fluid from the injection formation. Such proper showing should be supported by a valid step rate test run in accordance with procedures acceptable to the Division.

The operator shall notify the supervisor of the Aztec district office of the Division of the date and time of the installation of disposal equipment and of any mechanical integrity test so that the same may be inspected and witnessed.

The operator shall immediately notify the supervisor of the Aztec district office of the Division of the failure of the tubing, casing, or packer in said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

PROVIDED FURTHER THAT, jurisdiction is retained by the Division for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh water or (2) consistent with the requirements in this order, whereupon the Division may, after notice and hearing, or without notice and hearing in event of an emergency subject to NMSA 1978 Section 70-2-23, terminate the injection authority granted herein.

The operator shall provide written notice of the date of commencement of injection and the initial reservoir pressure to the Aztec district office of the Division.

The operator shall submit monthly reports of the disposal operations on Division

Form C-115, in accordance with Division Rules 706 and 1120.

The injection authority granted herein shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject well, provided however, the Division, upon written request by the operator mailed prior to the expiration date, may grant an extension thereof for good cause shown.

This order does not relieve the operator of responsibility should its operations cause any actual damage or threat of damage to protectable fresh water, human health or the environment; nor does it relieve the operator of responsibility for complying with applicable Division rules or other state, federal, or local laws or regulations.

  
MARK E. FESMIRE, P.E.  
Director

MEF/wvjj

cc: Oil Conservation Division – Aztec  
Bureau of Land Management – Farmington  
State Land Office – Oil, Gas, and Minerals Division



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**  
Governor  
**Joanna Prukop**  
Cabinet Secretary

**Lori Wrotenbery**  
Director  
Oil Conservation Division

*ADMINISTRATIVE ORDER SWD-913*

***APPLICATION OF ELM RIDGE RESOURCES, INC. FOR SALT WATER  
DISPOSAL, SAN JUAN COUNTY, NEW MEXICO.***

**ADMINISTRATIVE ORDER  
OF THE OIL CONSERVATION DIVISION**

Under the provisions of Rule 701(B), Elm Ridge Resources, Inc. made application to the New Mexico Oil Conservation Division on January 5, 2004, for permission to utilize for salt water disposal its proposed Central Bisti WDW Well No. 161 (API No. 30-045-31606) to be located 1,067 feet from the North line and 2,286 feet from the East line (Unit B) of Section 16, Township 25 North, Range 12 West, NMPM, San Juan County, New Mexico.

**THE DIVISION DIRECTOR FINDS THAT:**

- (1) The application has been duly filed under the provisions of Rule 701(B) of the Division Rules and Regulations;
- (2) Satisfactory information has been provided that all offset operators and surface owners have been duly notified;
- (3) The applicant has presented satisfactory evidence that all requirements prescribed in Rule 701 will be met; and
- (4) No objections have been received within the waiting period prescribed by rule.

**IT IS THEREFORE ORDERED THAT:**

Elm Ridge Resources, Inc. is hereby authorized to utilize its proposed Central Bisti WDW Well No. 161 (API No. 30-045-31606) to be located 1,067 feet from the North line and 2,286 feet from the East line (Unit B) of Section 16, Township 25 North, Range 12 West, NMPM, San Juan County, New Mexico, in such a manner as to permit the injection of produced water for disposal purposes into the Entrada formation from 6,910 feet to 6,990 feet, through 2 7/8 inch plastic-lined tubing set in a packer located at approximately 6,810 feet.

**IT IS FURTHER ORDERED THAT:**

The operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

After cementing, the operator shall provide proof of the cement top to the Aztec district office of the Division in the form of visual circulation, temperature survey, or cement bond log as applicable. The Entrada formation interval shall be logged with porosity and resistivity logs and swab tested after perforating. Results of the swab testing shall be reported to the Division and, if possible, water samples shall be obtained and supplied to the Division.

The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing, or packer.

The injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection well to **no more than 1,382 psi**.

The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the injection formations. Such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

The operator shall notify the supervisor of the Aztec district office of the Division of the date and time of the installation of disposal equipment and of any mechanical integrity test so that the same may be inspected and witnessed.

The operator shall immediately notify the supervisor of the Aztec district office of the Division of the failure of the tubing, casing, or packer in said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

**PROVIDED FURTHER THAT,** jurisdiction is retained by the Division for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh water or (2) consistent with the requirements in this order, whereupon the Division may, after notice and hearing, terminate the injection authority granted herein.

**The operator shall provide written notice of the date of commencement of injection to the Aztec district office of the Division. The operator shall submit monthly reports of the**

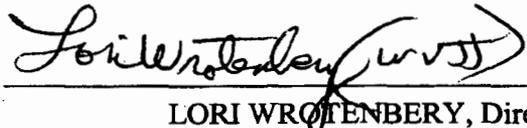
*Administrative Order SWD-913  
Elm Ridge Resources, Inc.  
February 4, 2004  
Page 3 of 3*

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disposal operations on Division Form C-120-A, in accordance with Rule Nos. 706 and 1120 of the Division Rules and Regulations.

The injection authority granted herein shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject well, provided however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

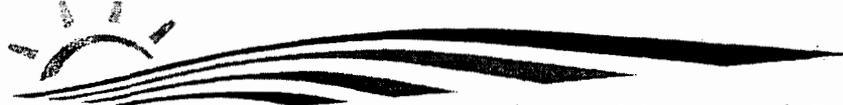
Approved at Santa Fe, New Mexico, on this 4th day of February 2004.



LORI WROTENBERY, Director

LW/wvjj

cc: Oil Conservation Division – Aztec  
State Land Office – Minerals Management Division



New Mexico Energy, Minerals and Natural Resources Department

**Susana Martinez**  
Governor

**John H. Bemis**  
Cabinet Secretary

**Brett F. Woods, Ph.D.**  
Deputy Cabinet Secretary

**Jami Bailey**  
Division Director  
Oil Conservation Division



February 17, 2012

Amy Mackey  
Elm Ridge Exploration Co, LLC  
20 CR 5060  
PO Box 156  
Bloomfield, NM 87413

**Re: Administrative Order SWD-913**

Central Bisti Unit SWD #161 (API No. 30-045-31606)  
1067 FNL, 2286 FEL (Unit B), Sec 16, T25N, R12W, NMPM, San Juan County  
Injection into the Entrada formation from 6,790 to 6,940 feet

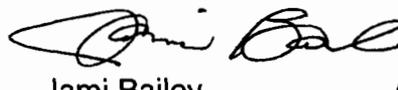
Your request on behalf of Elm Ridge for a second extension was received February 15, 2012.

SWD 913 was originally granted February 4, 2004. The extension SWD-913-A expired some 8 months ago on July 10, 2011.

The Division cannot extend an expired permit. Your request is therefore **denied**.

Elm Ridge Exploration Co, LLC can reapply for a new SWD at any time by submitting a new application and C-108.

Sincerely,



Jami Bailey  
Director

cc: Oil Conservation Division – Aztec  
API No. 30—45-31606

