

## APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage  
Application qualifies for administrative approval? ☐ Yes ☒ No

II. OPERATOR: Sundown Energy, LP (OGRID-232611)  
ADDRESS: 13455 Noel Road, Suite 2000 Dallas, Texas 75240  
CONTACT PARTY: Ross Pearson PHONE: (214) 368-6100

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 ☒ 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:

  - Proposed average and maximum daily rate and volume of fluids to be injected;
  - Whether the system is open or closed;
  - Proposed average and maximum injection pressure;
  - Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and;
  - 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: Ross Pearson TITLE: Area Production Manager  
SIGNATURE: Ross Pearson DATE: 7/16/13  
E-MAIL ADDRESS: rpearson@sundownenergy.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:

**DISTRIBUTION:** Original and one copy to Santa Fe with one copy to the appropriate District Office



### 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.**

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**NOTICE:** Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.



C-108 Application  
Sundown Energy, LP

Arco 28 State Well No. 1  
API No. 30-025-29340  
660' FNL & 660' FEL (Unit A)

Arco 28 State No. 2  
API No. 30-025-29526  
330' FNL & 1650' FEL (Unit B)

Both in Section 28, T-18S, R-35E, NMPM  
Lea County, New Mexico

- I. The purpose of the application is to request approval to re-enter the plugged and abandoned Arco 28 State Wells No. 1 & 2 and convert these wells to Queen water injection wells within the proposed Reeves Queen Unit Waterflood Project which will initially comprise the SE/4 SE/4 of Section 21, SW/4 of Section 22, NW/4 of Section 27 and the NE/4 of Section 28, all in Township 18 South, Range 35 East, NMPM, Lea County, New Mexico.
- II. Sundown Energy, LP ("Sundown")  
13455 Noel Road  
Suite 2000  
Dallas, Texas 75240  
Contact Party: Ross Pearson (214) 368-6100
- III. Injection well data sheets and wellbore schematic diagrams showing the current and proposed wellbore configurations are attached.
- IV. This is not an expansion of an existing project.
- V. Attached is a map that identifies all wells/leases within a 2-mile radius of the proposed injection wells and a map that identifies the ½ mile "Area of Review" ("AOR") for both injection wells.
- VI. AOR well data is attached. Well construction data is included for all existing wells within the AOR. Also included are wellbore diagrams for each PA'd well within the AOR. An examination of the well completion and plugging data indicates that all AOR wells are adequately cased, cemented and/or plugged and abandoned in order to preclude the movement of fluid from the injection zone into any fresh water aquifers.
- VII.
  1. The average injection rate is anticipated to be approximately 500 BWPD. The maximum rate will be approximately 1,000 BWPD. If the average or maximum rates increase in the future, the Division will be notified.
  2. This will be a closed system.



3. Sundown will initially inject water into the subject wells at a surface pressure that is in compliance with the Division's limit of 0.2 psi/ft., or approximately 894 psi. The maximum surface injection pressure is anticipated to be approximately 2,200 psi. If a surface injection pressure above 894 psi is necessary, Sundown will conduct step rate injection tests to determine the fracture pressure of the Queen formation in this area.
4. Produced water from the Devonian and Queen formations will be injected into the subject wells. Attached is a Devonian produced water analysis from Paladin Energy Corporation's South Vacuum Well No. 5 and a Queen produced water analysis from Sundown's Lea 403 State Well No. 2. Also attached is a compatibility test indicating that slight scaling may result from combining Devonian and Queen produced water.
5. Injection is to occur into a formation that is oil productive.

VIII.   Geologic Series:           Guadalupian  
         Geologic Formation:       Queen  
         Thickness:               16 Feet  
         Lithology:               Sandstone  
         USDW's:                 Ogallala is present at a maximum depth of  
                                     approximately 156 feet according to attached data  
                                     obtained from the New Mexico State Engineer's  
                                     Office. The average depth to water in this area is  
                                     approximately 73-76 feet.

- IX.     No stimulation of the wells is planned
- X.     Logs were filed at the time of drilling.
- XI.    Attached is a fresh water analysis obtained from a fresh water well located within one-mile of the proposed injection wells.
- XII.   Affirmative statement is enclosed.
- XIII.  Proof of Notice is enclosed.



## INJECTION WELL DATA SHEET

OPERATOR: Sundown Energy, LP

WELL NAME & NUMBER: Arco 28 State No. 1 (API No. 30-025-29340)

WELL LOCATION: 660' FNL & 660' FEL A 28 18 South 35 East  
FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGE

### WELLBORE SCHEMATIC

*See Attached Wellbore Schematic*

### WELL CONSTRUCTION DATA

#### Surface Casing

Hole Size: 17 1/2" Casing Size: 13 3/8" @ 490'  
Cemented with: 475 Sx. or                      ft<sup>3</sup>  
Top of Cement: Surface Method Determined: Circulated

#### Intermediate Casing

Hole Size: 11" Casing Size: 8 5/8" @ 3,910'  
Cemented with: 1700 Sx. or                      ft<sup>3</sup>  
Top of Cement: Surface Method Determined: Circulated

#### Production Casing

Hole Size: 7 7/8" Casing Size: 4 1/2" @ 4,652'  
Cement with: 480 Sx. or                      ft<sup>3</sup>  
Top of Cement: 1,750' Method Determined: T.S.  
Total Depth: 10,300' PBTD: 4,652'

#### Injection Interval

Perforated Interval -4,472'-4,488'



## INJECTION WELL DATA SHEET

Tubing Size: 2 3/8" 4.7# J-55

Lining Material: Internally Plastic Coated

Type of Packer: Baker AD-1 Injection Packer

Packer Setting Depth: 4,422' or within 100' of the uppermost injection perforations

Other Type of Tubing/Casing Seal (if applicable): None

### Additional Data

1. Is this a new well drilled for injection:                      Yes           X           No

If no, for what purpose was the well originally drilled: Well was drilled in 1985 to test deep formations, and was subsequently completed as a producing well in the Queen interval.

2. Name of the Injection Formation: Queen

3. Name of Field or Pool (if applicable): Reeves-Queen Pool (Oil-52070)

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.

None

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

Within the proposed waterflood project area in Sections 22 & 27, T-18S, R-35E: South Vacuum-Bone Spring Pool (8,000'-9,000'); South Vacuum-Devonian (11,000'-12,000'); South Vacuum-McKee (Gas) Pool (13,000'-14,000')



## Current Wellbore Configuration

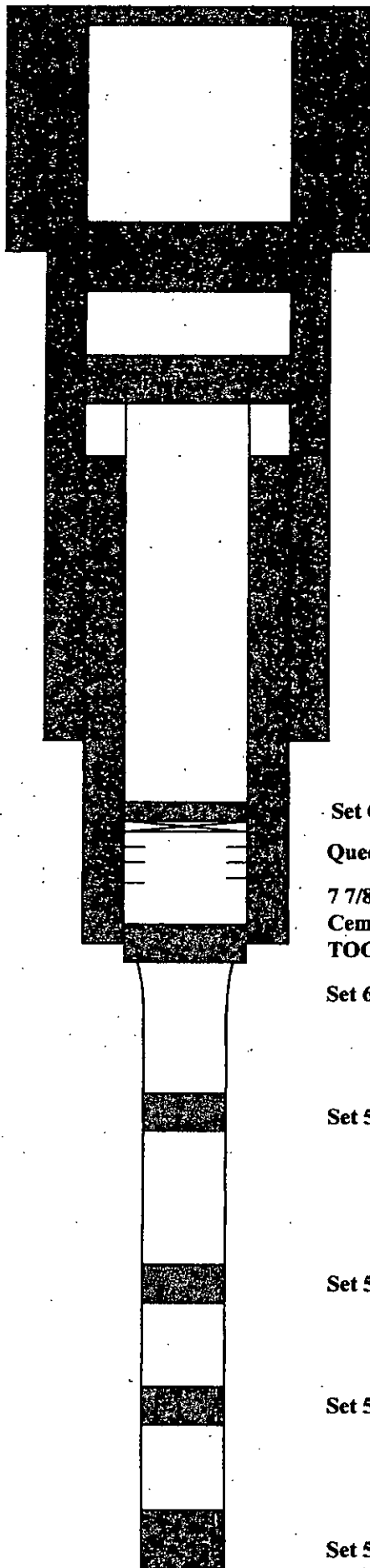
Sundown Energy, LP

Arco 28 State No. 1

API No. 30-025-29340

660' FNL & 660' FEL (Unit A)

Section 28, T-18 South, R-35 East, NMPM



10 Sx. surface

17 1/2" Hole; Set 13 3/8" J-55 Csg @ 490'  
Cemented w/475 Sx.  
Cement circulated to surface

Set 40 sx. cement plug 341'-525'

Cut & pulled 4 1/2" casing @ 1,375'  
Set 25 sx. cement stub plug 1,290'-1,425'

TOC @ 1,750' by T.S.

11" Hole; Set 8 5/8" K-55 csg @ 3,910'  
Cemented w/1700 sx.  
Cement circulated to surface

Set CIBP @ 4,400' w/25 sx. cement on top

Queen Perforations: 4,472'-4,488'

7 7/8" Hole; Set 4 1/2" K-55 csg @ 4,652'  
Cemented w/480 sx.  
TOC @ 1,750 by T.S.

Set 60 Sx. cement plug @ 4,652'-4,743'

Set 50 Sx. cement plug @ 5,542'

Set 55 Sx. cement plug @ 7,114'

Set 55 Sx. cement plug @ 8,784'

Set 55 Sx. cement plug @ 9,865'

T.D. 10,300'

Drilled: 7/1985

Plugged: 5/1997



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SANTA FE		
FILE		
U.S.G.S.		
LAND OFFICE		
OPERATOR		

# NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103  
Supersedes Old  
C-102 and C-103  
Effective 1-1-65

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b> <small>(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT -" (FORM C-101) FOR SUCH PROPOSALS.)</small>		5a. Indicate Type of Lease State <input checked="" type="checkbox"/> Fee <input type="checkbox"/>
1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>		5. State Oil & Gas Lease No.
2. Name of Operator Tamarack Petroleum Company, Inc.		7. Unit Agreement Name
3. Address of Operator P. O. Box 2046, Midland, TX 79702		8. Farm or Lease Name Arco "28" State
4. Location of Well UNIT LETTER <u>A</u> <u>660</u> FEET FROM THE <u>North</u> LINE AND <u>660</u> FEET FROM THE <u>East</u> LINE, SECTION <u>28</u> TOWNSHIP <u>18S</u> RANGE <u>38E</u> NMPM.		9. Well No. #1
15. Elevation (Show whether DF, RT, GR, etc.) 3910.7 GR		10. Field and Pool, or Wildcat South Vacuum
12. County Lea		

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data			
NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/> TEMPORARILY ABANDON <input type="checkbox"/> PULL OR ALTER CASING <input type="checkbox"/> OTHER <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/> CHANGE PLANS <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/> COMMENCE DRILLING OPNS. <input checked="" type="checkbox"/> CASING TEST AND CEMENT JOB <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/> PLUG AND ABANDONMENT <input type="checkbox"/>

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103.

- Spud 7-23-85. Drilled 17 1/2" hole to 490'.
- Ran 12 jts 13 3/8" 54.50# J-55 casing. Set at 490' on 7-24-85.
- Cemented to surface with 475 sks Class C 2% CaCl<sub>2</sub> circulated 60 sks to surface.
- Nippled up Shaffer Series 900 Type E BOPE and tested to 2000#.
- Drill 11" hole from 490 to 3910.
- Ran 93 jts. 8 5/8" 24 & 32# K-55 casing to 3910' on 7-28-85.
- Cement w/1500 sks Halliburton Lite 1/4# Flocele 15# salt & 200 sks Class C 2% CaCl<sub>2</sub>. Circulated 125 sacks.
- Nipple up Shaffer Series 900 Type E BOPE and tested to 2500#.
- Drill 7 7/8" hole from 3910' to 10,300'. Ran open hole logs 8-23-85.
- Pump 55 sks Class H Neat at 9865'. Pump 55 sks Class H Neat at 8784'. Pump 55 sacks Class H Neat at 7114'. Pump 50 sks Class C Neat at 5542'. Pump 60 sks Class C Neat at 4743'. Tag top of plug at 4602'. Dress off with 7 7/8" bit to 4652.
- Ran 124 jts 4 1/2 10.50# K-55 casing to 4652' on 8-25-85.
- Cemented w/480 sks Class C 1/4# Flocele, 5# salt 0.3% Halad 9. Top of cement 1750 by temp.
- Tested casing to 2500#, Released rig 8-26-85.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED Randy H. McIlroy TITLE Engineering Manager DATE 9-11-85

ORIGINAL SIGNED BY DISTRICT ENGINEER  
 APPROVED BY DISTRICT ENGINEER TITLE DISTRICT ENGINEER DATE   
 CONDITIONS OF APPROVAL, IF ANY:



Submit 3 Copies  
to Appropriate  
District Office

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-103  
Revised 1-1-89

DISTRICT I  
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II  
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

WELL API NO.	30-025-29340
5. Indicate Type of Lease	STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No.	01-A-28-18S-35E
7. Lease Name or Unit Agreement Name	ARCO "28" State
8. Well No.	1
9. Pool name or Wildcat	Reeves (Queen)

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)	
1. Type of Well: OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>	
2. Name of Operator Tamarack Petroleum Co., Inc.	
3. Address of Operator 500 W. Texas, Suite 1485 - Midland, TX 79701	
4. Well Location Unit Letter <u>A</u> : <u>660</u> Foot From The <u>North</u> Line and <u>660</u> Foot From The <u>East</u> Line Section <u>28</u> Township <u>18S</u> Range <u>35E</u> NMPM <u>Lea</u> County <u></u>	
10. Elevation (Show whether DF, RKB, RT, GR, etc.)	

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data	
NOTICE OF INTENTION TO:	SUBSEQUENT REPORT OF:
PERFORM REMEDIAL WORK <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>
OTHER: <input type="checkbox"/>	PLUG AND ABANDONMENT <input checked="" type="checkbox"/>
	CASING TEST AND CEMENT JOB <input type="checkbox"/>
	OTHER: <input type="checkbox"/>

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

5/7/97 Set 4 1/2" CIBP @ 4400'.  
5/7/97 Cap CIBP w. 25 sks cement.  
5/8/97 Cut 4-1/2" casing @ 1375'.  
5/9/97 Spot 25 sks cement @ 1425'. Tag @ 1290'.  
5/9/97 Spot 40 sks cement @ 525'. Tag @ 341'.  
5/10/97 Spot 10 sks cement from 30' to surface.

5/12/97 Set dry hole marker Per BDC

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

SIGNATURE Charley D. Gregg TITLE President DATE 5/13/97  
TYPE OR PRINT NAME Charley Gregg - SNG Well P&A Services, LLC TELEPHONE NO.

(THIS SPACE FOR STATE USE)

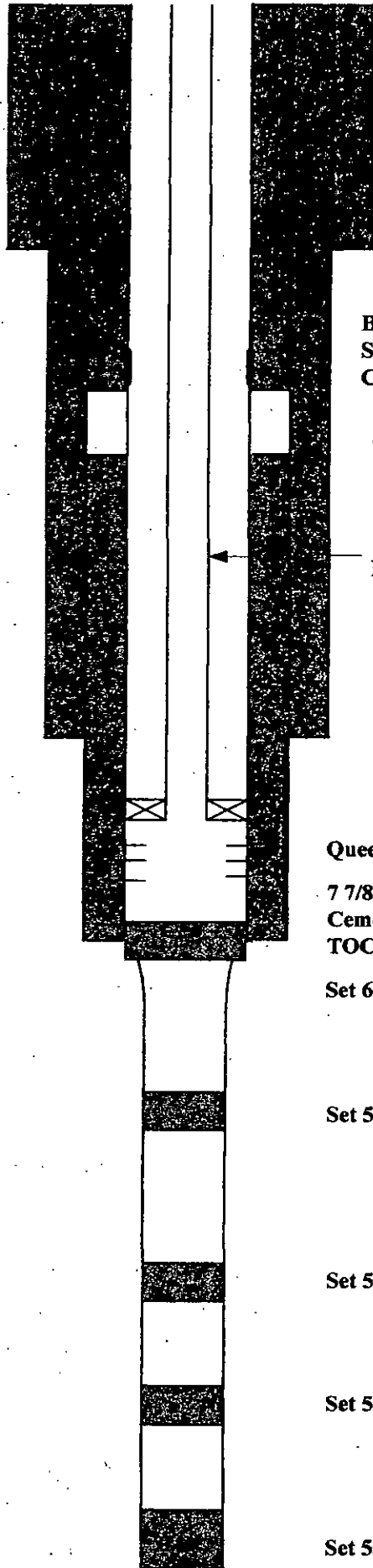
OIL & GAS INSPECTOR

APPROVED BY [Signature] TITLE Inspector DATE 5/13/97  
CONDITIONS OF APPROVAL, IF ANY:



## Proposed Wellbore Configuration

Sundown Energy, LP  
Arco 28 State No. 1  
API No. 30-025-29340  
660' FNL & 660' FEL (Unit A)  
Section 28, T-18 South, R-35 East, NMPM



17 1/2" Hole; Set 13 3/8" J-55 Csg @ 490'  
Cemented w/475 Sx.  
Cement circulated to surface

Drilled: 7/1985

Bowen casing bowl/patch w/cementing ports  
Set 4 1/2" 10.5# J-55 tieback casing @ 1,375'.  
Cement with sufficient cement to circulate to surface.

TOC @ 1,750' by T.S.

2 3/8" 4.7 # J-55 IPC tubing set in a  
Baker AD-1 Packer @ 4,422'

11" Hole; Set 8 5/8" K-55 csg @ 3,910'  
Cemented w/1700 sx.  
Cement circulated to surface

Queen Perforations: 4,472'-4,488'

7 7/8" Hole; Set 4 1/2" K-55 csg @ 4,652'  
Cemented w/480 sx.  
TOC @ 1,750 by T.S.

Set 60 Sx. cement plug @ 4,652'-4,743'

Set 50 Sx. cement plug @ 5,542'

Set 55 Sx. cement plug @ 7,114'

Set 55 Sx. cement plug @ 8,784'

Set 55 Sx. cement plug @ 9,865'

T.D. 10,300'



## INJECTION WELL DATA SHEET

OPERATOR: Sundown Energy, LP

WELL NAME & NUMBER: Arco 28 State No. 2 (API No. 30-025-29526)

WELL LOCATION: 330' FNL & 1650' FEL      B      28      18 South      35 East  
FOOTAGE LOCATION      UNIT LETTER      SECTION      TOWNSHIP      RANGE

### WELLBORE SCHEMATIC

*See Attached Wellbore Schematic*

### WELL CONSTRUCTION DATA

#### Surface Casing

Hole Size: 11"      Casing Size: 8 5/8" @ 475'  
Cemented with: 300 Sx.      or \_\_\_\_\_ ft<sup>3</sup>  
Top of Cement: Surface      Method Determined: Circulated

#### Intermediate Casing

Hole Size: \_\_\_\_\_      Casing Size: \_\_\_\_\_  
Cemented with: \_\_\_\_\_      or \_\_\_\_\_ ft<sup>3</sup>  
Top of Cement: \_\_\_\_\_      Method Determined: \_\_\_\_\_

#### Production Casing

Hole Size: 7 7/8"      Casing Size: 4 1/2" @ 4,559'  
Cement with: 1250 Sx.      or \_\_\_\_\_ ft<sup>3</sup>  
Top of Cement: Surface      Method Determined: Circulated  
Total Depth: 4,560'

#### Injection Interval

Perforated Interval -4,480'-4,483'



## INJECTION WELL DATA SHEET

Tubing Size: 2 3/8" 4.7# J-55 Lining Material: Internally Plastic Coated

Type of Packer: Baker AD-1 injection packer

Packer Setting Depth: 4,430' or within 100' of the uppermost injection perforations

Other Type of Tubing/Casing Seal (if applicable): None

### Additional Data

1. Is this a new well drilled for injection:                      Yes       X       No

If no, for what purpose was the well originally drilled: Well was drilled in 1985 as a producing well in the Queen interval.

2. Name of the Injection Formation: Queen

3. Name of Field or Pool (if applicable): Reeves-Queen Pool (Oil-52070)

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.

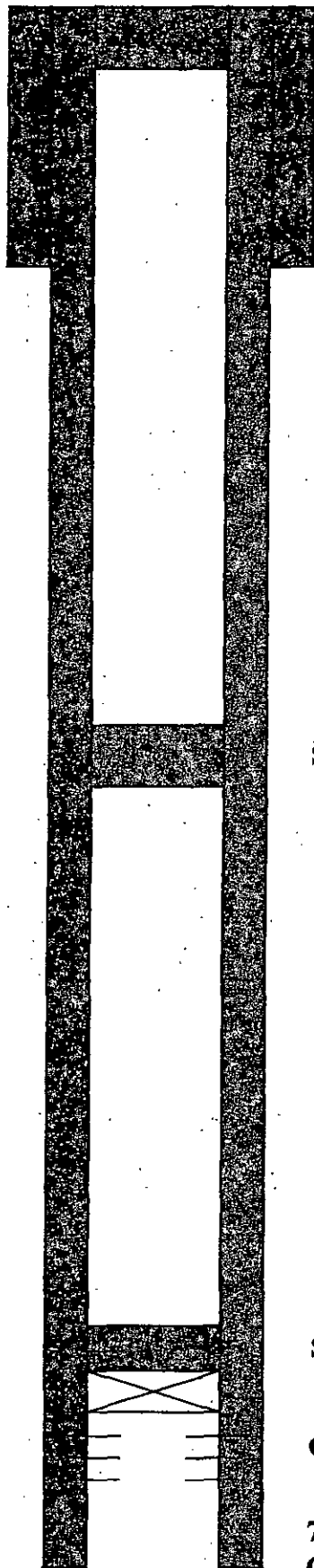
None

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

Within the proposed waterflood project area in Sections 22 & 27, T-18S, R-35E: South Vacuum-Bone Spring Pool (8,000'-9,000'); South Vacuum-Devonian (11,000'-12,000'); South Vacuum-McKee (Gas) Pool (13,000'-14,000')



## Current Wellbore Configuration



Set 25 sx. cement  
plug 147'-Surface

11" Hole; Set 8 5/8" K-55 csg. @ 475'  
Cemented w/300 sx.  
Cement circulated to surface

**Drilled: 12/1985**  
**Plugged: 5/1997**

Set 25 sx. cement plug 1,620'-1,760'

Set CIBP @ 4,400' w/25 sx. cement on top

Queen Perforations: 4,480'-4,483'

7 7/8" Hole; Set 4 1/2" K-55 csg. @ 4,559'  
Cemented w/1250 Sx.  
Cement circulated to surface.

**T.D. 4,560'**

**Sundown Energy, LP**  
**Arco 28 State No. 2**  
**API No. 30-025-29526**  
**330' FNL & 1650' FEL, Unit B**  
**Section 28, T-18S, R-35E**



Submit 3 Copies  
to Appropriate  
District Office

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-103  
Revised 1-1-89

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DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

WELL API NO. 30-025-29526
5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No. 02-B-28-18S-35E
7. Lease Name or Unit Agreement Name ARCO "28" State
8. Well No. 2
9. Pool name or Wildcat Reeves (Queen)

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)	
1. Type of Well: OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>	
2. Name of Operator Tamarack Petroleum Co., Inc.	
3. Address of Operator 500 W. Texas, Suite 1485 Midland, TX 79701	
4. Well Location Unit Letter <u>B</u> : <u>1650</u> Feet From The <u>East</u> Line and <u>330</u> Feet From The <u>North</u> Line Section <u>28</u> Township <u>18S</u> Range <u>35 E</u> NMMPM Lea County	
10. Elevation (Show whether DP, RKB, RT, GR, etc.)	

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data	
NOTICE OF INTENTION TO:	SUBSEQUENT REPORT OF:
PERFORM REMEDIAL WORK <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>
OTHER: <input type="checkbox"/>	PLUG AND ABANDONMENT <input checked="" type="checkbox"/>
	CASING TEST AND CEMENT JOB <input type="checkbox"/>
	OTHER: <input type="checkbox"/>

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

5/6/97 Set 4 1/2" CIBP @ 4400'. Cap w/25 sks cement.  
5/6/97 Spot 25 sks cement @ 1760' to 1620'.  
5/6/97 Spot 25 sks cement from 147' to surface.

5/12/97 set Dry Hole marker per GDC

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

SIGNATURE Charley D. Gregg TITLE President DATE 5/13/97

TYPE OR PRINT NAME Charley Gregg - SNG Well P&A Services, LLC TELEPHONE NO. \_\_\_\_\_

(This space for use by)

APPROVED BY [Signature] TITLE Inspector DATE 5/17/97

CONDITIONS OF APPROVAL, IF ANY:

IC

60



## Proposed Wellbore Configuration

Sundown Energy, LP  
Arco 28 State No. 2  
API No. 30-025-29526  
330' FNL & 1650' FEL, Unit B  
Section 28, T-18S, R-35E

11" Hole; Set 8 5/8" K-55 csg. @ 475'  
Cemented w/300 sx.  
Cement circulated to surface

Drilled: 12/1985

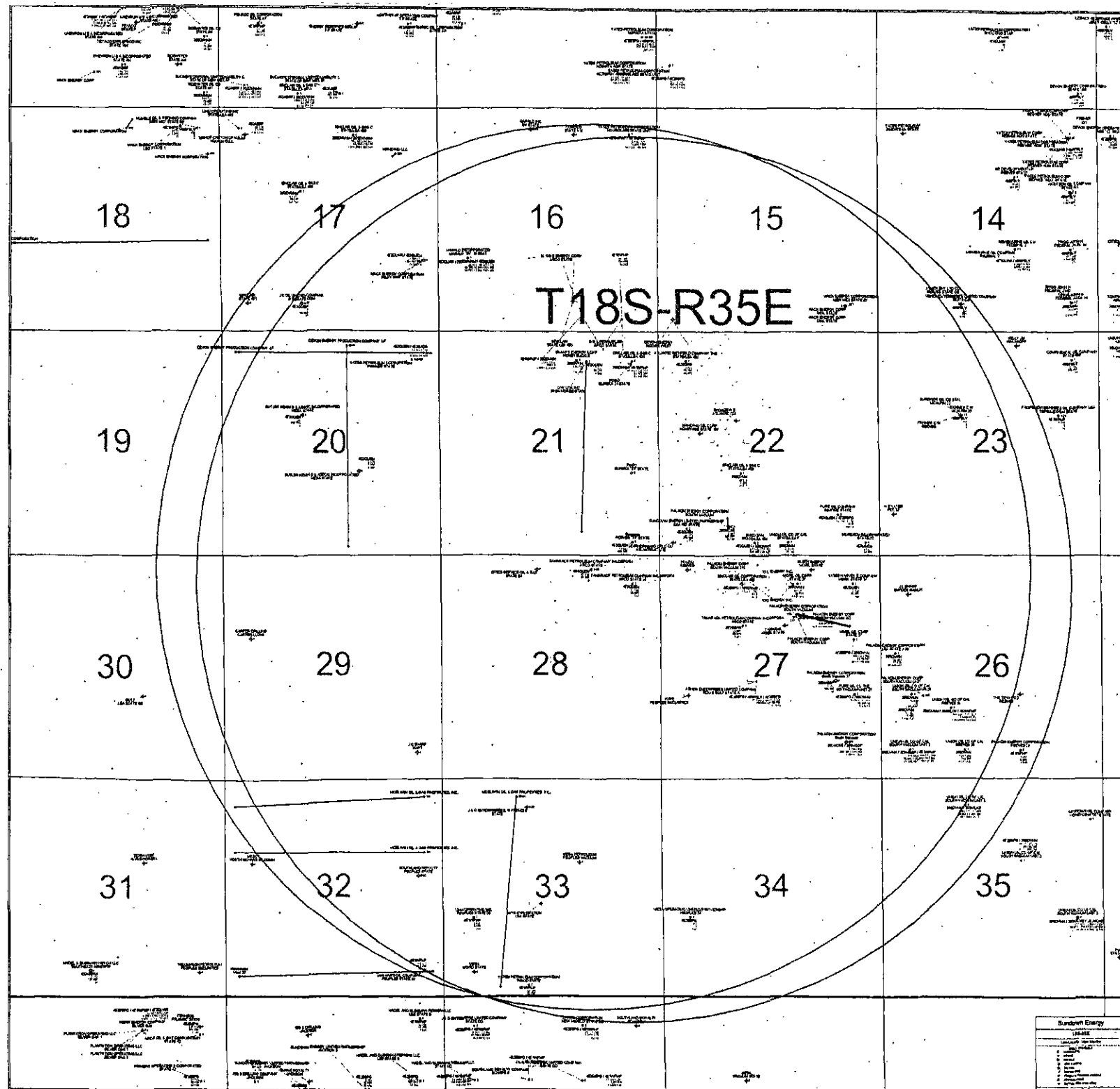
2 3/8" 4.7# J-55 IPC tubing set in a  
Baker AD-1 packer @ 4,430'

Queen Perforations: 4,480'-4,483'

7 7/8" Hole; Set 4 1/2" K-55 csg. @ 4,559'  
Cemented w/1250 Sx.  
Cement circulated to surface.

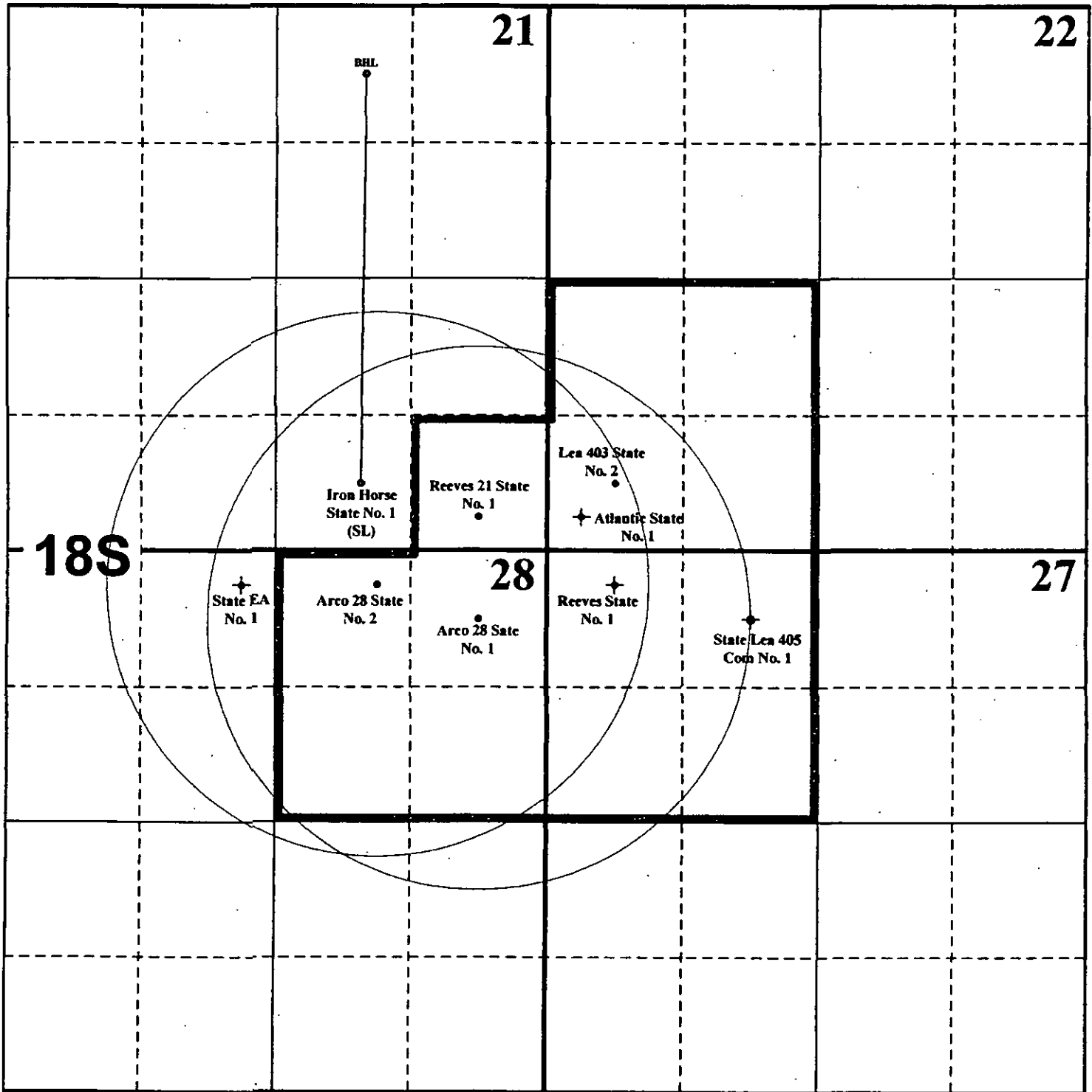
T.D. 4,560'







35E



● Proposed Injection Well

⊙ Producing Well

⊕ PA'd Well

— Proposed Secondary  
Recovery Unit Area

**Sundown Energy, LP**  
**Reeves Queen Unit Waterflood**  
**1/2 Mile AOR Map**

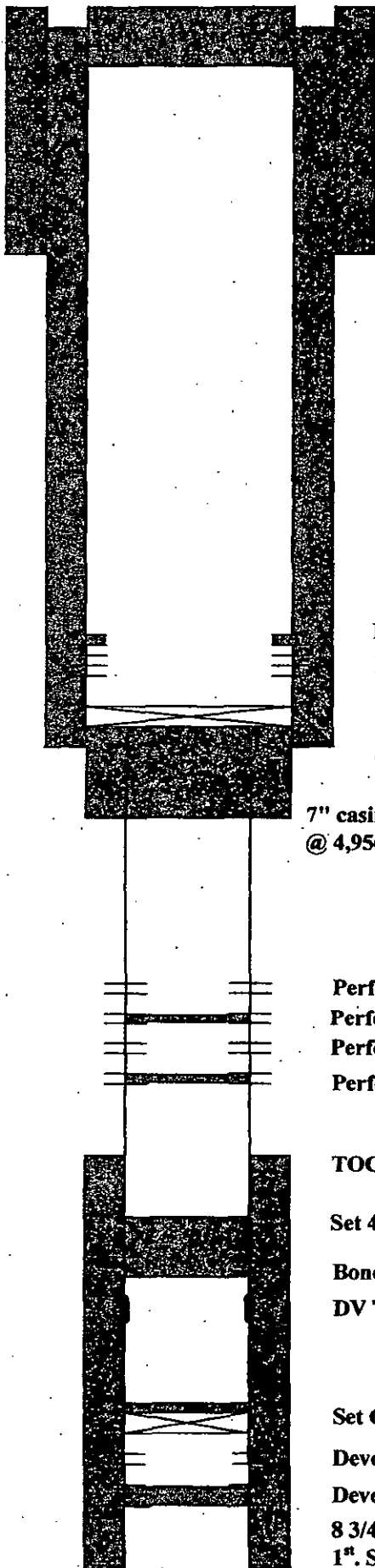


**SUNDOWN ENERGY, LP**  
**FORM C-108: AREA OF REVIEW WELL DATA**  
**REEVES QUEEN UNIT WATERFLOOD PROJECT**

30-025-30514	Sundown Energy, LP	Reeves 21 State	1	P	Active	330'	S	860'	E	P	21	18S	35E	May-89	4,685'	14 3/4"	11 3/4"	1,781'	950'	Surface	Circ.	11"	8 5/8"	3,052'	600'	Surface	Circ.	4,480'-4,476' Perf.	5 1/2" csg. stage cemented. 1st-550' ex.					
																					7 7/8"	5 1/2"	4,565'	1010'	1,417'	Calc.	Queen	2nd-450' ex. DV Tool @ 3,118'						
30-025-37442	Pogo Producing Co. LLC	Eureka 21 State	2	P	ND	1980'	S	660'	E	I	21	18S	35E	APD Expired 1/1/08. Well Never Drilled																				
30-025-38193	Oxy USA, Inc.	Iron Horse State	1	P	Active	660'	S	1830'	E	O	21	18S	35E	Dec-08	8,220'	17 1/2"	13 3/8"	528'	450'	Surface	Circ.	12 1/4"	9 5/8"	3,150'	1,100'	Surface	Circ.	4,777'-8,077'	Total Depth: 8,220' MD. 4,462' TVD.					
					BHL	4611'	S	1777'	E	B	21	18S	35E		MD.							7 7/8"	5 1/2"	8,200'	1050'	3,520'	CBL	Queen						
30-025-03127	Sundown Energy, LP	Lee 403 State	2	P	Active	650'	S	660'	W	M	22	18S	35E	May-58	11,978'	17 1/4"	13 3/8"	332'	400'	Surface	Circ.	12 1/4"	9 5/8"	4,000'	1,850'	460'	Well File	4,432'-4,450' Perf.	Well Drilled to 11,978' in 1958 & PA'd					
1958-Well plugged: 25 Sx-11,913-11,978' 30 Sx-8,321'-8,400' 100 Sx-7,100'-7,276' 25 Sx-7,066'-7,134' 25 Sx-3,934'-4,000' Cut & Pulled 9 5/8" @ 440' 25 Sx-445'-475' 25 Sx-270'-332' Well Re-entered in 1990 & drilled to 4,600'. Set 4 1/2" casing @ 4,567' & cemented w/1280' ex. Queen Completion																																		
30-025-23480	Leatherwood Drilling Co.	Atlantic State	1	Dry	PA	330'	S	330'	W	M	22	18S	35E	Apr-70	4,975'	12"	8 5/8"	378'	275'	Surface	Circ.								Dry Hole. PA Schematic Attached.					
30-025-03145	Pride Energy Company	State Lee 405 Com	1	P	PA	660'	N	1960'	W	C	27	18S	35E	Dec-67	11,783'	16 1/2"	13 3/8"	325'	400'	Surface	Circ.	12 1/4"	9 5/8"	4990'	1900'	30'	Well File		PA Schematic Attached.					
																					8 3/4"	7"	11,783'	300'	8,090'	Well File								
30-025-30550	Hondo Oil & Gas Co.	Reeves State	1	Dry	PA	330'	N	660'	W	D	27	18S	35E	Mar-89	5,590'	12 1/4"	8 5/8"	458'	300'	Surface	Circ.	7 7/8"	5 1/2"	1,865'	450'	595'	Well File		Dry Hole. PA Schematic Attached.					
30-025-30315	Oxy USA, Inc.	State "EA"	1	Dry	PA	330'	N	2310'	W	C	28	18S	35E	Mar-88	4,780'	12 1/4"	8 5/8"	378'	275'	Surface	Circ.								Dry Hole. PA Schematic Attached					



**Pride Energy Company**  
**State Lea 405 Com No. 1**  
**API No. 30-025-03145**  
**660' FNL & 1980' FWL (Unit C)**  
**Section 27, T-18 South, R-35 East, NMPPM**



25 Sx. surface

15 1/2" Hole; Set 13 3/8" Csg @ 325'  
 Cemented w/400 Sx.  
 Cement circulated to Surface

**Drilled: 12/1957**  
**Plugged: 1/1971**

Perforations 4,652'-4,777' Squeezed w/200 sx.  
 Perforations 4,753'-4,843'

12 1/4" Hole; Set 9 5/8" Csg @ 4,990'  
 Cemented w/1900 sx.  
 TOC @ 31' by Well File

7" casing cut & pulled @ 5,100'. Cement retainer  
 @ 4,956'. Set 25 Sx. cement plug 4,990'-5,100'

Perforations 6,134'-6,151'  
 Perforations 6,334'-6,340' squeezed w/75 sx.  
 Perforations 6,368'-6,374'  
 Perforations @ 6,494 squeezed w/75 sx.

TOC @ 8,090' (Well File)

Set 40 sx. cement plug 8,450'-8,681'

Bone Spring Perforations: 8,649'-8,681'  
 DV Tool @ 8,812'

Set CIBP @ 11,602 w/6' cement on top  
 Devonian Perforations: 11,686'-11,722'  
 Devonian Perforations: 11,769'-11,774'. Squeezed w/ 125 Sx.  
 8 3/4" Hole; Set 7" Csg. @ 11,783'  
 1<sup>st</sup>. Stage-150 Sx. 2<sup>nd</sup> Stage-150 Sx.  
 DV Tool @ 8,812' TOC @ 8,090' by Well File

T.D. 11,783"



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# NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103  
Supersedes Old  
C-102 and C-103  
Effective 1-1-65

5a. Indicate Type of Lease	
State <input checked="" type="checkbox"/>	Fee <input type="checkbox"/>
5. State Oil & Gas Lease No. <b>E-1635</b>	
7. Unit Agreement Name	
8. Form or Lease Name <b>State "405"</b>	
9. Well No. <b>1</b>	
10. Field and Pool, or Wildcat <b>Field Wildcat</b>	
12. County <b>Lea</b>	

**SUNDRY NOTICES AND REPORTS ON WELLS**  
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT -" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>
2. Name of Operator <b>WILLIAM G. MCCOY</b>
3. Address of Operator <b>P.O. Box 1352, Roswell, New Mexico 88201</b>
4. Location of Well UNIT LETTER <b>C</b> <b>660</b> FEET FROM THE <b>North</b> LINE AND <b>1980</b> FEET FROM THE <b>West</b> LINE, SECTION <b>27</b> TOWNSHIP <b>18-S</b> RANGE <b>35-E</b> N.M.P.M.
15. Elevation (Show whether DF, RT, CR, etc.) <b>3893' GL</b>

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input checked="" type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER <input type="checkbox"/>	CASING TEST AND CEMENT JOB <input type="checkbox"/>	OTHER <input type="checkbox"/>

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Well plugged and abandoned on verbal permission from Mr. Joe Ramey on January 16, 1971. 25 sx plug from 5100' to 4990'. Retainer at 4956'. 25 sx plug at surface. Erected dry hole marker. Cleaned location. Well ready for inspection.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED <u>W.B. McCoy</u>	TITLE <u>Operator</u>	DATE <u>2/11/71</u>
APPROVED BY <u>John W. Ramey</u>	TITLE <u>Geologist</u>	DATE <u>MAY 6 1971</u>
CONDITIONS OF APPROVAL, IF ANY:		



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OPERATOR	

# NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103  
Supersedes Old  
C-102 and C-103  
Effective 1-1-65

5a. Indicate Type of Lease State <input checked="" type="checkbox"/> Fee <input type="checkbox"/>
5. State Oil & Gas Lease No. E-1635
7. Unit Agreement Name
8. Farm or Lease Name State "405"
9. Well No. 1
10. Field and Pool, or Wildcat Field Wildcat
12. County Lea

**SUNDRY NOTICES AND REPORTS ON WELLS**  
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>
2. Name of Operator WILLIAM G. MCCOY
3. Address of Operator P. O. BOX 1352, ROSWELL, NEW MEXICO 88201
4. Location of Well UNIT LETTER C 660 FEET FROM THE North LINE AND 1980 FEET FROM The West LINE, SECTION 27 TOWNSHIP 18-S RANGE 35-E NMPM.
15. Elevation (Show whether DF, RT, GR, etc.) 3893' GL

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:	SUBSEQUENT REPORT OF:
PERFORM REMEDIAL WORK <input type="checkbox"/>	REMEDIAL WORK <input checked="" type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	CASING TEST AND CEMENT JOB <input type="checkbox"/>
OTHER <input type="checkbox"/>	OTHER <input type="checkbox"/>
PLUG AND ABANDON <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
CHANGE PLANS <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1703.

Operations to re-work commenced with verbal approval from Mr. Runyan on December 7, 1970. 7" casing run and set on old casing at 5100'. Perforated 6494'. Squeezed 75 sx cement. Perforated 6334-40', 6368-74'. Acidized with 2500 gals. Swabbed slight show gas and drilling mud. Squeezed 75 sx at 6334-40'. Perforated 6134-40', 6145-51'. Attempted to acidize. Well communicated. Pulled 7" casing. Set 25 sx plug at 5100' and 4990'. Set retainer at 4956'. Perforated 4652-54', 4670-72', 4753-55', 4775-77'. Attempted to acidize. Perforations communicated. Squeezed with 50 sx. Tested perforations. Still communication. Squeezed 150 sx. Drilled out. Perforated 4753-55, 4775-77. Attempted to acidize perforations. Perforations communicated. Perforated 4834-36, 4841-43'. Attempted to acidize. Perforations communicated. Prep. to P&A.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED <u>W. G. McCoy</u>	TITLE <u>Operator</u>	DATE <u>2/11/71</u>
APPROVED BY <u>[Signature]</u>	TITLE <u>Supervisor</u>	DATE <u>FEB 15 1971</u>
CONDITIONS OF APPROVAL, IF ANY:		



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NEW MEXICO OIL CONSERVATION COMMISSION

SEP 9 11 25 AM '65

Form C-103  
Supersedes Old  
C-102 and C-103  
Effective 1-4-65

5a. Indicate Type of Lease  
State ☒ Fee ☐

5. State Oil & Gas Lease No.

**E-1495**

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR.  
USE "APPLICATION FOR PERMIT -" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/> <b>Plug and Abandon</b>	7. Unit Agreement Name
2. Name of Operator <b>Sinclair Oil &amp; Gas Company</b>	8. Farm or Lease Name <b>State Les 405</b>
3. Address of Operator <b>P. O. Box 1920, Hobbs, New Mexico</b>	9. Well No. <b>1</b>
4. Location of Well UNIT LETTER <b>C</b> <b>660</b> FEET FROM THE <b>North</b> LINE AND <b>1980</b> FEET FROM THE <b>West</b> LINE, SECTION <b>27</b> TOWNSHIP <b>18S</b> RANGE <b>35E</b> NMPM.	10. Field and Pool, or Wildcat <b>South Texas Bone Springs</b>
15. Elevation (Show whether DF, RT, GR, etc.) <b>3893' GR</b>	12. County <b>Les</b>

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

SUBSEQUENT REPORT OF:

PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input checked="" type="checkbox"/>
FULL OR ALTER CASING <input type="checkbox"/>	OTHER <input type="checkbox"/>	CASING TEST AND CEMENT JOBS <input type="checkbox"/>	

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1703.

**ID 11,783', FBID 8716'.**

**8-20-65 to 8-24-65. Spot 40 sacks cement 8450-8485' over Bone Springs Perfs. 8649-8681' and fill hole w/mud.**  
**8-25-65 to 8-31-65. Shoot and pull 5100' of 7"OD casing.**  
**9-1-65 to 9-3-65. Spot 60 sacks cement 4970-5120' over bottom of 9-5/8"OD cas @ 4990' and over top of 7"OD casing @ 5100'. Spot 10 sacks cement in cellar. Install regulation marker, clean and level location. Completed plugged and Abandoned 9-3-65.**

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED [Signature] TITLE **Superintendent** DATE **9-4-65**

APPROVED BY [Signature] TITLE \_\_\_\_\_ DATE \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY:

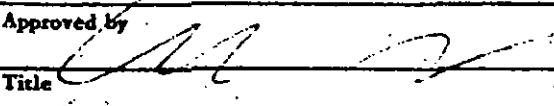
**Originals: OCC, Hobbs/ cc: Mr. R.E.O. cc: State Land Office, cc: file**



NUMBER OF COPIES RECEIVED DISTRIBUTION:		NEW MEXICO OIL CONSERVATION COMMISSION <b>MISCELLANEOUS REPORTS ON WELLS</b>			FORM C-103 (Rev 3-55)	
Name of Company <b>Sinclair Oil &amp; Gas Company</b>		Address <b>520 E Broadway, Hobbs, New Mexico</b>				
Lease <b>State Lea 405</b>	Well No. <b>1</b>	Unit Letter <b>C</b>	Section <b>27</b>	Township <b>18N</b>	Range <b>35E</b>	
Date Work Performed <b>see below</b>	Pool <b>South Vacuum Devonian</b>			County <b>Lea</b>		
THIS IS A REPORT OF: (Check appropriate block)						
<input type="checkbox"/> Beginning Drilling Operations <input type="checkbox"/> Casing Test and Cement Job <input type="checkbox"/> Other (Explain):						
<input type="checkbox"/> Plugging <input checked="" type="checkbox"/> Remedial Work						
Detailed account of work done, nature and quantity of materials used, and results obtained.						
<b>5-2-62 11738PB - moved in DDU (Southwestern Well Servicing-contractor). Pulled tubing.</b> <b>5-3-62 11596PB - Set cast iron bridge plug at 11602 w/6' cement on top and 7" casing below bridge plug filled w/heavy mud. Jet Perforated Bone Springs Zone 8649-64 &amp; 8668-81 w/52 1/2" holes. Ran 2-3/8" tbg &amp; packer to 8630.</b> <b>5-4-62 Acidized perfs 8649-81 w/3000 gals acid. Max Press 4600, Min Press 2600, inj rate 3.6 BPM, 10 min SIP 3000. Pulled Tbg &amp; Packer. Rerun 2-3/8" tbg &amp; packer to 8605 and placed well on pump.</b> <b>5-18-62 11596PB - Bone Springs Zone produced 92 bbls new 37.3 gravity oil and 44 bbls formation water in 24 hrs on potential test ending 6:00 AM 5-18-62. GOR 909 to 1. Recompleted in the Bone Springs Zone after plugging back from the Devonian Zone.</b>						
Witnessed by <b>V.R. BLACK</b>		Position <b>FOREMAN</b>		Company <b>SINCLAIR OIL &amp; GAS COMPANY</b>		
FILL IN BELOW FOR REMEDIAL WORK REPORTS ONLY						
ORIGINAL WELL DATA						
D F Elev. <b>3893</b>	T D <b>11783</b>	P B T D <b>11738PB</b>	Producing Interval <b>11686-11722</b>	Completion Date		
Tubing Diameter <b>2-3/8</b>	Tubing Depth <b>11257</b>	Oil String Diameter <b>7"</b>	Oil String Depth <b>11783</b>			
Perforated Interval(s) <b>11686-11722</b>						
Open Hole Interval <b>-</b>			Producing Formation(s) <b>Devonian</b>			
RESULTS OF WORKOVER						
Test	Date of Test	Oil Production BPD	Gas Production MCFPD	Water Production BPD	GOR Cubic feet/Bbl	Gas Well Potential MCFPD
Before Workover	<b>Devonian Zone 4/28/62</b>	<b>0</b>	<b>0</b>	<b>1200</b>	<b>0</b>	
After Workover	<b>Bone Spring Zone 5/18/62</b>	<b>92</b>	<b>84</b>	<b>44</b>	<b>909</b>	
OIL CONSERVATION COMMISSION				I hereby certify that the information given above is true and complete to the best of my knowledge.		
Approved by				Name		
Title				Position <b>Dist. Supt.</b>		
Date				Company <b>Sinclair Oil &amp; Gas Company</b>		

Orig&2cc: OCC; cc:HFD, JM, File



NUMBER OF COPIES RECEIVED DISTRIBUTION		<b>NEW MEXICO OIL CONSERVATION COMMISSION</b> <b>MISCELLANEOUS REPORTS ON WELLS</b> (Submit to appropriate District Office as per Conservation Rule 1106)			<b>FORM C-103</b> (Rev 3-55)	
Name of Company <b>Sinclair Oil &amp; Gas Company</b>		Address <b>520 East Broadway, Hobbs, New Mexico</b>				
Lease <b>State Lea 405</b>	Well No. <b>1</b>	Unit Letter <b>C</b>	Section <b>27</b>	Township <b>18S</b>	Range <b>35E</b>	
Date Work Performed <b>see below</b>	Pool <b>South Vacuum Devonian</b>			County <b>Lea</b>		
THIS IS A REPORT OF: (Check appropriate block)						
<input type="checkbox"/> Beginning Drilling Operations <input type="checkbox"/> Casing Test and Cement Job <input type="checkbox"/> Other (Explain):						
<input type="checkbox"/> Plugging <input checked="" type="checkbox"/> Remedial Work						
Detailed account of work done, nature and quantity of materials used, and results obtained.						
4-10-62 11781PBD-Devonian - moved in DDU, D.A. & S, contractor. Pulled tubing. Squeezed Devonian perfs 11769-11774 w/125 sks cement. Max. Press 6000#, reversed out 20 sks. 4-11-62 Jet perforated Devonian Zone 11686-11694, 11700-11708 & 11716-11722 w/2 holes per foot. 4-12-62 Ran 2" tbg and packer to 11470. Acidized perfs 11686-11722 w/6000 gals acid using 40 ball sealers. Max Press 5900#, Min Press 4000#, inj rate 2.3 BPM, 10" SIP 3800 #. 4-13-62 Swabbed and tested 198 bbls formation water and no oil in 10 hrs. 4-15-62 Pulled tbg, ran tbg and packer with casing pump to 5000'. 4-17-62 Pumped 600 bbls formation water and no oil. 4-23-62 Pumped 1200 bbls formation water and no oil. 4-28-62 On 24 hr potential test ending 6:00 AM 4-28-62, pumped 1200 bbls formation water and no oil, no show gas. Final Report. Well shut in preparing to plug back to Bone Springs Zone.						
Witnessed by <b>V.R. Black</b>		Position <b>Foreman</b>		Company <b>Sinclair Oil &amp; Gas Co.</b>		
FILL IN BELOW FOR REMEDIAL WORK REPORTS ONLY						
ORIGINAL WELL DATA						
D F Elev. <b>3893</b>	TD <b>11783</b>	PBTD <b>11781PB</b>	Producing Interval <b>11697-11781</b>	Completion Date <b>6/5/58</b>		
Tubing Diameter <b>2-3/8</b>	Tubing Depth <b>11257</b>	Oil String Diameter <b>7/8</b>	Oil String Depth <b>11783</b>			
Perforated Interval(s) <b>11769-11774</b>						
Open Hole Interval <b>none</b>			Producing Formation(s) <b>Devonian</b>			
RESULTS OF WORKOVER						
Test <b>Before Workover</b>	Date of Test <b>4-1-62</b>	Oil Production BPD <b>5</b>	Gas Production MCFPD <b>TEST</b>	Water Production BPD <b>225</b>	GOR Cubic feet/Bbl <b>TEST</b>	Gas Well Potential MCFPD
<b>After Workover</b>	<b>4/28/62</b>	<b>0</b>	<b>0</b>	<b>1200</b>	<b>0</b>	
OIL CONSERVATION COMMISSION				I hereby certify that the information given above is true and complete to the best of my knowledge.		
Approved by 				Name		
Title				Position <b>ASST DIST SUPT</b>		
Date				Company <b>Sinclair Oil &amp; Gas Company</b>		

Origination: OCC; cc:1 ,JM,File



**Hondo Oil & Gas Co.**  
**Reeves State No. 1**  
**API No. 30-025-30550**  
**330' FNL & 660' FWL, Unit D**  
**Section 27, T-18S, R-35E**  
**Type Well: Dry Hole**

**10 Sx. surface plug**

**12 1/4" Hole; 8 5/8" csg. set @ 458'**  
**Cemented w/300 sx.**  
**Cement circulated to surface**

**Drilled: 3/89**

**Plugged: 4/89**

**Perforated @ 592' & squeezed w/250 sx.**  
**Cement circulated to surface.**

**TOC @ 595' by T.S.**

**7 7/8" Hole. Set 5 1/2" Csg. @ 1,885'**  
**Cemented w/450 Sx.**  
**TOC @ 595' by T.S.**

**Set 60 Sx. cement plug 3,024'-3,124'**

**Set 50 Sx. cement plug 4,370'-4,470'**

**Set 40 Sx. cement plug 4,950'-5,050'**

**Drilled 7 7/8" Hole to T.D. @ 5,590'**

**T.D. 5,590'**



Submit 3 Copies  
to Appropriate  
District Office

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-103  
Revised 1-1-89

DISTRICT I  
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II  
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

WELL API NO.

30-025-30530

5. Indicate Type of Lease

STATE ☒

FEE ☐

6. State Oil & Gas Lease No.

E-1635

7. Lease Name or Unit Agreement Name

Reeves State

8. Well No.

1

9. Pool name or Wildcat

Reeves Queen

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A  
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT"  
(FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well:

OIL  
WELL ☒

GAS  
WELL ☐

OTHER

2. Name of Operator

Hondo Oil & Gas Company

3. Address of Operator

P. O. Box 2208, Roswell, NM 88202

4. Well Location

Unit Letter D 330 Feet From The North Line and 660 Feet From The West Line

Section 27 Township 18S Range 35E NMFM Lea County

10. Elevation (Show whether DF, RKB, RT, GR, etc.)

3904' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐

PLUG AND ABANDON ☐

TEMPORARILY ABANDON ☐

CHANGE PLANS ☐

PULL OR ALTER CASING ☐

OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐

COMMENCE DRILLING OPNS. ☐ PLUG AND ABANDONMENT ☐

CASING TEST AND CEMENT JOB ☐

OTHER: Plugged back & ran casing ☒

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Drilled 7 7/8" hole to 5590' (TD). Reached TD 4/4/89. Spotted 40 sx. Class "C" plug from 5050-4950'. Spotted 50 sx. Class "C" plug from 4470-4370'. Spotted 60 sx. cement plug from 3124-3024'. Ran 43 jts. 5 1/2" 17# Lt&C J-55 casing. Float shoe @ 1885'. Set ECP @ 1837'. Set ECP @ 1786'. DV tool @ 1778' (PBTD). Ran 15 centralizers, every other joint. Cement with 350 sx. Class "C" w/2% CC + 100 sx. Thixset. Plug down @ 12:30 p.m. 4/5/89. Cement bridged and didn't circulate. Ran temperature survey. TOC @ 595'.

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

SIGNATURE E. L. Bateman Jr. TITLE Petroleum Engineer DATE 4/13/89

TYPE OR PRINT NAME TELEPHONE NO.

(This space for State Use)

ORIGINAL SIGNED BY JERRY SEXTON  
DISTRICT I SUPERVISOR

APPROVED BY TITLE DATE

CONDITIONS OF APPROVAL, IF ANY:

APR 18 1989



Submit 3 Copies  
to Appropriate  
District Office

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-103  
Revised 1-1-89

DISTRICT I  
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P.O. Drawer DD, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

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

WELL API NO. 30-025-30532
5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No. E-1635
7. Lease Name or Unit Agreement Name Reeves State
8. Well No. 1
9. Pool name or Wildcat Reeves Queen

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b> (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)	
1. Type of Well: OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>	
2. Name of Operator Hondo Oil & Gas Company	
3. Address of Operator P. O. Box 2208, Roswell, NM 88202	
4. Well Location Unit Letter <u>D</u> : <u>330</u> Feet From The <u>North</u> Line and <u>660</u> Feet From The <u>West</u> Line Section <u>27</u> Township <u>18S</u> Range <u>35E</u> NMPM <u>Lea</u> County	
10. Elevation (Show whether DF, RKB, RT, GR, etc.) 3904' GR	

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data	
<b>NOTICE OF INTENTION TO:</b>	<b>SUBSEQUENT REPORT OF:</b>
PERFORM REMEDIAL WORK <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>
OTHER: <input type="checkbox"/>	PLUG AND ABANDONMENT <input checked="" type="checkbox"/>
	CASING TEST AND CEMENT JOB <input type="checkbox"/>
	OTHER: <input type="checkbox"/>

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

4/11/89 Perforated 4 holes @ 592'. Squeezed with 250 sx.  
Class "C" neat. Circulated 10 sx. to surface.  
Installed dry hole marker.

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

SIGNATURE E. Z. Bostman Jr. TITLE Petroleum Engineer DATE 4/21/89

TYPE OR PRINT NAME

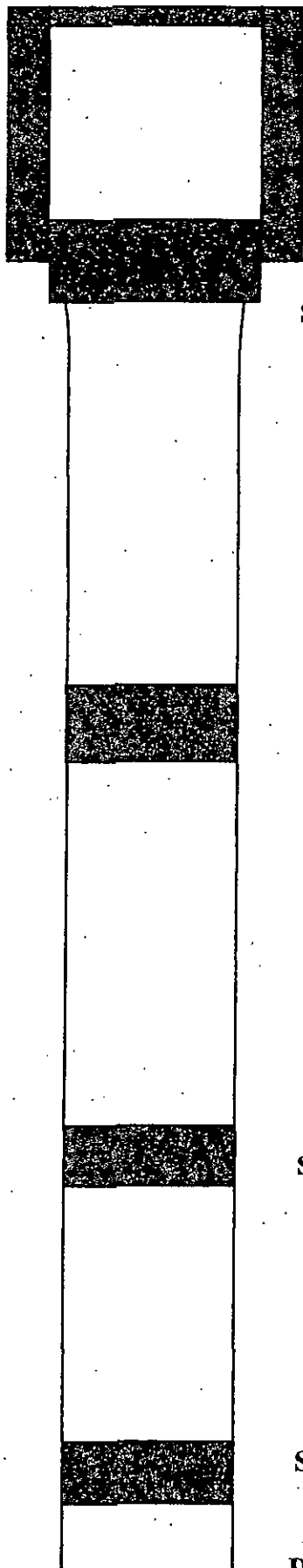
TELEPHONE NO.

(This space for State Use)

APPROVED [Signature] OIL & GAS INSPECTOR DATE JUL 21 1989

CONDITIONS OF APPROVAL, IF ANY:





10 Sx. surface plug

12 1/4" Hole; 8 5/8" csg. set @ 378'  
Cemented w/275 sx.  
Cement circulated to surface

Set 27 Sx. cement plug 328'-428'

Set 26 Sx. cement plug 1,800'-1,900' (Top of Salt)

Set 26 Sx. cement plug 3,100'-3,200' (Base of Salt)

Set 26 Sx. cement plug 4,416'-4,516'

Drilled 7 7/8" Hole to T.D. @ 4,780'

T.D. 4,780'

Oxy USA, Inc.  
State EA No. 1  
API No. 30-025-30315  
330' FNL & 2310' FWL, Unit C  
Section 28, T-18S, R-35E  
Type Well: Dry Hole

Drilled: 4/88

Plugged: 4/88



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FILE	
U.S.G.S.	
LAND OFFICE	
OPERATOR	

# NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103  
Supersedes Old  
C-102 and C-103  
Effective 1-4-85

50. Indicate Type of Lease
State <input checked="" type="checkbox"/> Fee <input type="checkbox"/>
51. State Oil & Gas Lease No.
A 4096

## SUNDRY NOTICES AND REPORTS ON WELLS

DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO OIL UP OR PLUG BACK TO A DIFFERENT RESERVOIR.  
USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>	7. Unit Agreement Name
2. Name of Operator	8. Term of Lease Name
OXY USA Inc.	State EA
3. Address of Operator	9. Well No.
P. O. Box 50250, Midland, TX 79710	1
4. Location of Well	10. Field and Pool, or Related
UNIT LETTER C 330 FEET FROM THE North LINE AND 2310 FEET FROM THE West LINE, SECTION 28 TOWNSHIP 18S RANGE 35E NMPM.	Reeves (Queen)
15. Elevation (Show whether DF, RT, GR, etc.)	12. County
3915.6 GR	Lea

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

SUBSEQUENT REPORT OF:

PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input checked="" type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER <input type="checkbox"/>	CASING TEST AND CEMENT JOBS <input type="checkbox"/>	OTHER <input type="checkbox"/>

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1102.

T.D. of 4780' Lime & Dolomite. Plugged and abandoned. Drilled a 7 7/8" hole from 378' to T.D. of 4780' in Lime & Dolomite and after receiving verbal approval from Jerry Sexton w/NMCD in Hobbs, NM, this well was P & A'd in the following manner:

1. Set 26 sx. CL. C cement plug @ 4516'-4416' across Queen
2. Set 26 sx. CL. C cement plug @ 3200'-3100' across base of salt
3. Set 26 sx. CL. C cement plug @ 1900'-1800' across top of salt
4. Set 27 sx. CL. C cement plug @ 428'- 328' 1/2 in & 1/2 out of 8 5/8" csg. shoe
5. Set 10 sx. CL. C cement plug @ 30' to surface.

Set a 4" Dry Hole Marker 4' above ground to designate P & A location

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED J. A. Vetrans TITLE Dist. Oper. Mgr. - Prod. DATE 4-13-88

APPROVED BY [Signature] TITLE OIL & GAS INSPECTOR DATE AUG 29 '88

CONDITIONS OF APPROVAL, IF ANY:



**Leatherwood Drilling Co.**  
**Atlantic State No. 1**  
**API No. 30-025-23480**  
**330' FSL & 330' FWL, Unit M**  
**Section 22, T-18S, R-35E**  
**Type Well: Dry Hole**

**10 Sx. surface plug**

**12" Hole; 8 5/8" csg. set @ 378'**  
**Cemented w/275 sx.**  
**Cement circulated to surface**

**Drilled: 4/70**

**Plugged: 4/70**

**Set 25 Sx. cement plug 350'-475'**

**Set 25 Sx. cement plug 1,800'-1,925' (Top of Salt)**

**Set 25 Sx. cement plug 2,850'-2,975' (Base of Salt)**

**Set 25 Sx. cement plug 4,850'-4,975'**

**Drilled 6 3/4" Hole to T.D. @ 4,975'**

**T.D. 4,975'**



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FILE	
U.S.G.S.	
LAND OFFICE	
OPERATOR	

# NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103  
Supersedes Old  
C-102 and C-103  
Effective 1-1-65

5a. Indicate Type of Lease
State <input checked="" type="checkbox"/> Fee <input type="checkbox"/>
5. State Oil & Gas Lease No. <b>E-1582</b>

## SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR.  
USE "APPLICATION FOR PERMIT -" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER- <input type="checkbox"/>	7. Unit Agreement Name
2. Name of Operator <b>LEATHERWOOD DRILLING CO.</b>	8. Farm or Lease Name <b>Atlantic-State</b>
3. Address of Operator <b>P.O. BOX 1352 ROSWELL, NEW MEXICO</b>	9. Well No. <b>1</b>
4. Location of Well UNIT LETTER <b>M</b> <b>330</b> FEET FROM THE <b>West</b> LINE AND <b>330</b> FEET FROM THE <b>South</b> LINE, SECTION <b>22</b> TOWNSHIP <b>18 S</b> RANGE <b>35 E</b> NMPM.	10. Field and Pool, or Wildcat <b>Field Wildcat</b>
15. Elevation (Show whether DF, RT, CR, etc.) <b>3901.9 G.L.</b>	12. County <b>Lea</b>

## Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

### NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐  
TEMPORARILY ABANDON ☐  
PULL OR ALTER CASING ☐  
OTHER ☐

PLUG AND ABANDON ☐  
CHANGE PLANS ☐  
OTHER ☐

### SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐  
COMMENCE DRILLING OPNS. ☐  
CASING TEST AND CEMENT JOBS ☐  
OTHER ☐  
ALTERING CASING ☐  
PLUG AND ABANDONMENT ☒

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

4-17-70 T.D. 4975 Dolomite. Well plugged and abandoned on verbal permission Mr. Joe Ramey as follows:

25 sx. plug 4975 - 4850  
25 sx. plug 2850 - 2975 Base of Salt  
25 sx. plug 1800 - 1925 Top of Salt  
25 sx. plug 350 - 475 8-5/8" Surface casing  
10 sx. plug at surface

Drilling mud spotted between plugs. Dry Hole marker erected. Waiting on pits to dry before leveling and cleaning location. Will advise when location is ready for inspection.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED <u>W. B. McCay</u>	TITLE <u>Agent</u>	DATE <u>4-27-70</u>
APPROVED BY <u>John W. Ramey</u>	TITLE <u>Geologist</u>	DATE <u>15 1970</u>
CONDITION OF APPROVAL, IF ANY:		





# 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 (quarters are 1=NW 2=NE 3=SW 4=SE)  
closed) (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	Depth Well	Depth Water	Water Column
L 03772	L	LE		2	2	21	18S	35E		644659	3623361*	130	60	70
L 03866	L	LE		3	3	22	18S	35E		645082	3622155*	127	65	62
L 04399	L	LE		3	3	22	18S	35E		645082	3622155*	90	75	15
L 05810	L	LE		2	3	22	18S	35E		645479	3622564*	145	95	50

Average Depth to Water: 73 feet

Minimum Depth: 60 feet

Maximum Depth: 95 feet

**Record Count: 4**

**PLSS Search:**

Section(s): 20-22

Township: 18S

Range: 35E

\*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.





# New Mexico Office of the State Engineer Water Column/Average Depth to Water

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(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	Q	Q	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 03783	L	LE		27	18S	35E				645710	3621138*	115	65	50
L 03963	L	LE		1 2	27	18S	35E			645896	3621762*	127	70	57
L 04562	L	LE		3 1	29	18S	35E			641874	3621315*	156	95	61

Average Depth to Water: 76 feet

Minimum Depth: 65 feet

Maximum Depth: 95 feet

Record Count: 3

PLSS Search:

Section(s): 27-29

Township: 18S

Range: 35E

\*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.





# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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& 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	Q	Q	Sec	Tws	Rng	X	Y	Depth	Depth	Water
					64	16	4						Well	Water	Column

L 07129

L LE 4 3 3 34 18S 35E 645237 3618830\* 60 40 20

Average Depth to Water: 40 feet

Minimum Depth: 40 feet

Maximum Depth: 40 feet

Record Count: 1

PLSS Search:

Section(s): 33-34

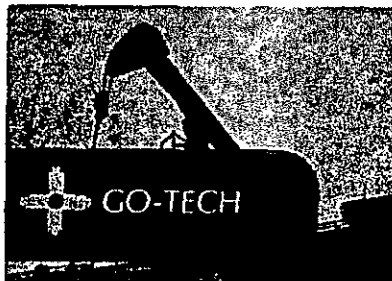
Township: 18S

Range: 35E

\*UTM location was derived from PLSS - see Help

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- ~ Home
- ~ Production Data ▶
- ~ Well Data ▶
- ~ NM Pricsheet
- ~ Water Data ▶
- ~ Projects ▶
- ~ Software ▶
- ~ Archive ▶
- ~ Other Links ▶
- ~ Help ▶

North American Oil and Gas News  
 Enbridge selected to provide pipeline for deepwater Gulf of Mexico development  
 Magnolia commence drilling of two Statoil operated wells  
 Coastal Energy Responds to Media Reports of Potential Transaction  
 Caza update on Caza Ridge Bone Spring well  
 Source: Oil Voice

NYMEX LS Crude 88.33  
 Navajo WTXI 0  
 Henry Hub 3.611  
 Updated: 11/6/2012  
 State Land Office Data Access  
 OCD welllog image files  
 PRRC NM-TECH NM-BGMR

~ Home>> Water Data>>Ground Water

### Ground Water Samples Query

#### Water Sample Search

SECTION 34  
 Township 18S  
 Range 35E  
 Formation  
 DATE  
 CHLORIDE (mg/L)

#### Water Samples for TOWNSHIP 18S RANGE 35E SECTION 34

Operation	# of samples	S	T	R	Location (qtr/qtr)
select	4	34	18S	35E	18S.35E.34.43143

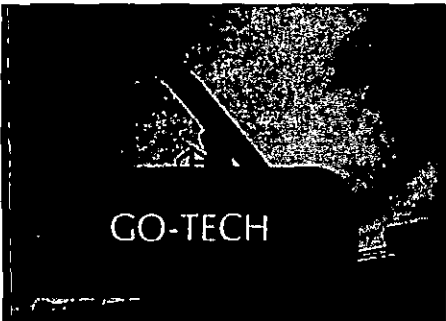
#### Water Samples for Township 18SRANGE 35E Section 34 Location

Operation	SampleID	Township	Range	Section	Location	Date	Chlorides
select	5940	18S	35E	34	OGALLALA 18S.35E.34.43143	12/5/1979	16
select	5331	18S	35E	34	OGALLALA 18S.35E.34.43143	11/9/1984	27
select	5174	18S	35E	34	OGALLALA 18S.35E.34.43143	6/7/1990	60
select	3939	18S	35E	34	OGALLALA 18S.35E.34.43143	9/7/1995	31

- ≡ NM WAIDS
  - ≡ Data
    - Produced Water
    - Ground Water
    - Conversion Tools
  - ≡ Scale
    - Scale details
    - Stiff
    - Oddo
    - Probable Mineral Composition mix
  - ≡ Corrosion
    - Theory
      - Uniform
      - Galvanic
      - Crevice
      - Hydrogen Damage
      - EIC
      - Erosion
    - Equipment
      - Artificial
      - Casing and Tubing
      - Surface
      - Enhanced
    - Gases
      - O2
      - CO2
      - H2S
      - Microbes
    - Prevention
    - References
  - ≡ Maps
    - Trend Maps
      - GW
      - PW
      - Geology
      - PLSS
      - Help
    - Online Map

PETROLEUM RECOVERY RESEARCH CENTER, SOCORRO, NM-87801





- ~ Home
- ~ Production Data ▶
- ~ Well Data ▶
- ~ NM Pricesheet
- ~ Water Data ▶
- ~ Projects ▶
- ~ Software ▶
- ~ Archive ▶
- ~ Other Links
- ~ Help ▶

North American Oil and Gas News  
Bonterra Energy and Spartan Oil complete business combination  
JKX Oil & Gas announces offering of convertible bonds  
The independent members of the SandRidge Energy Board of Directors respond to related party allegations  
Halliburton announces fourth quarter income from continuing operations of \$0.63 per diluted share

Source: Oil Voice

NYMEX LS Crude	96.24
Navajo WTXI	0
Henry Hub	3.418
Updated : 1/24/2013	
State Land Office Data Access	
OCD welllog image files	
PRRC	NM-TECH
NM-BGMR	

~ Home>>> Water Data>>Ground Water

NM WAIDS

Data

Produced Water

Ground Water

Conversion Tools

Scale

Scale details

Stiff

Oddo

Probable Mineral Composition

mix

Corrosion

Theory

Uniform

Galvanic

Crevice

Hydrogen Damage

EIC

Erosion

Equipment

Artificial

Casing and Tubing

Surface

Enhanced

Gases

O2

CO2

H2S

Microbes

Prevention

References

Maps

Trend Maps

GW

PW

Geology

PLSS

Help

Online Map

Ground Water Samples Query

Water Sample Search

SECTION

Township

Range

Formation

DATE

CHLORIDE (mg/L)

Find

Export Data

Water Samples for

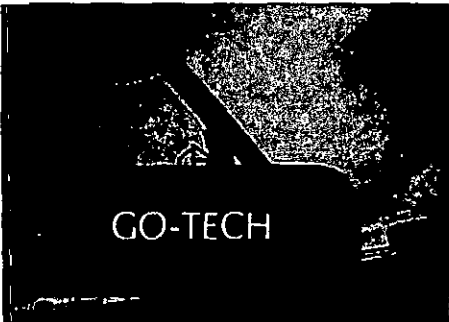
Operation	# of samples	S	T	R	Location (qtr/qtr)
<a href="#">select</a>	1	11	18S	35E	18S.35E.11.33322
<a href="#">select</a>	1	11	18S	35E	18S.35E.11.34444
<a href="#">select</a>	4	16	18S	35E	18S.35E.16.12223
<a href="#">select</a>	1	18	18S	35E	18S.35E.18.11113
<a href="#">select</a>	3	21	18S	35E	18S.35E.21.21000

1234

Water Samples for Township 18SRANGE 35E Section 16 Location 18S.35E.16.12223

Operation	SampleID	Township	Range	Section	Formation	Location	Date	Chlorides
<a href="#">select</a>	6383	18S	35E	16	OGALLALA	18S.35E.16.12223	12/6/1979	18
<a href="#">select</a>	5788	18S	35E	16	OGALLALA	18S.35E.16.12223	11/9/1984	28
<a href="#">select</a>	4903	18S	35E	16	OGALLALA	18S.35E.16.12223	6/7/1990	54
<a href="#">select</a>	4246	18S	35E	16	OGALLALA	18S.35E.16.12223	9/18/1995	31





- ~ Home
- ~ Production Data ▶
- ~ Well Data ▶
- ~ NM Pricsheet
- ~ Water Data ▶
- ~ Projects ▶
- ~ Software ▶
- ~ Archive ▶
- ~ Other Links ▶
- ~ Help ▶

North American Oil and Gas News  
Bonterra Energy and Spartan Oil complete business combination  
JKX Oil & Gas announces offering of convertible bonds  
The independent members of the SandRidge Energy Board of Directors respond to related party allegations  
Halliburton announces fourth quarter income from continuing operations of \$0.63 per diluted share

Source: Oil Voice

<b>NYMEX LS Crude</b>	<b>96.24</b>
<b>Navajo WTXI</b>	<b>0</b>
<b>Henry Hub</b>	<b>3.418</b>
Updated : 1/24/2013	
State Land Office Data Access	
OCD welllog image files	
PRRC	NM-TECH NM-BGMR

~ Home>>> Water Data>>>Ground Water

- ⊖ NM WAIDS
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  - References
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  - ⊖ Trend Maps
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    - PW
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    - Online Map

Ground Water Samples Query

Water Sample Search

SECTION   
Township 18S  
Range 35E  
Formation   
DATE   
CHLORIDE (mg/L)

Water Samples for

Operation	# of samples	S	T	R	Location (qtr/qtr)
<a href="#">select</a>	1	28	18S	35E	18S.35E.28.11330
<a href="#">select</a>	5	28	18S	35E	18S.35E.28.32210
<a href="#">select</a>	4	31	18S	35E	18S.35E.31.142113A
<a href="#">select</a>	1	33	18S	35E	18S.35E.33.21444
<a href="#">select</a>	4	34	18S	35E	18S.35E.34.43143

1234

Water Samples for Township 18SRANGE 35E Section 28 Location 18S.35E.28.32210

Operation	SampleID	Township	Range	Section	Formation	Location	Date	Chlorides
<a href="#">select</a>	6829	18S	35E	28	OGALLALA	18S.35E.28.32210	10/25/1979	14
<a href="#">select</a>	6222	18S	35E	28	OGALLALA	18S.35E.28.32210	12/6/1979	18
<a href="#">select</a>	5530	18S	35E	28	OGALLALA	18S.35E.28.32210	11/9/1984	24
<a href="#">select</a>	4734	18S	35E	28	OGALLALA	18S.35E.28.32210	8/7/1990	52
<a href="#">select</a>	3685	18S	35E	28	OGALLALA	18S.35E.28.32210	9/29/1995	24





PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

December 19, 2012

KYLE PAXTON  
SUNDOWN ENERGY  
P. O. BOX 277  
WICKETT, TX 79788

RE: REEVES QUEEN WATERFLOOD UNIT

Enclosed are the results of analyses for samples received by the laboratory on 11/20/12 11:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list on accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



**Analytical Results For:**

SUNDOWN ENERGY  
P. O. BOX 277  
WICKETT TX, 79788

Project: REEVES QUEEN WATERFLOOD UN  
Project Number: NOT GIVEN  
Project Manager: KYLE PAXTON  
Fax To: NOT GIVEN

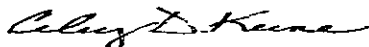
Reported:  
19-Dec-12 15:56

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SOUTH VACUUM #5	H202825-01	Water	16-Nov-12 00:00	20-Nov-12 11:10
LEA 403 STATE #2	H202825-02	Water	20-Nov-12 00:00	20-Nov-12 11:10
COMP OF S VACUUM & LEA	H202825-03	Water	20-Nov-12 00:00	20-Nov-12 11:10

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 SUNDOWN ENERGY  
 P. O. BOX 277  
 WICKETT TX, 79788

 Project: REEVES QUEEN WATERFLOOD UN  
 Project Number: NOT GIVEN  
 Project Manager: KYLE PAXTON  
 Fax To: NOT GIVEN

 Reported:  
 19-Dec-12 15:56

**SOUTH VACUUM #5**
**H202825-01 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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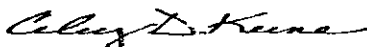
**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	34.2	5.00	mg/L	1	2110104	HM	26-Nov-12	310.1	
Calcium	3090	1.60	mg/L	1	2101718	HM	30-Nov-12	SM3500Ca-D	
Alkalinity, Carbonate	ND	0.00	mg/L	1	2110104	HM	26-Nov-12	310.1	
Chloride*	13800	4.00	mg/L	1	2112104	HM	26-Nov-12	4500-Cl-B	
Conductivity*	40300	1.00	uS/cm	1	2112607	HM	26-Nov-12	120.1	
Magnesium	899	1.00	mg/L	1	2101718	HM	30-Nov-12	SM3500Mg-E	
pH*	6.11	0.100	pH Units	1	2112607	HM	26-Nov-12	150.1	
Potassium	185	1.00	mg/L	1	2101718	HM	30-Nov-12	HACH 8049	
Sodium	3730	1.00	mg/L	1	2101718	HM	30-Nov-12	Calculation	
Sulfate*	293	10.0	mg/L	1	2112703	AP	27-Nov-12	375.4	
TDS*	23300	5.00	mg/L	1	2112602	HM	21-Nov-12	160.1	
Alkalinity, Total*	28.0	4.00	mg/L	1	2110104	HM	26-Nov-12	310.1	

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 SUNDOWN ENERGY  
 P. O. BOX 277  
 WICKETT TX, 79788

 Project: REEVES QUEEN WATERFLOOD UN  
 Project Number: NOT GIVEN  
 Project Manager: KYLE PAXTON  
 Fax To: NOT GIVEN

 Reported:  
 19-Dec-12 15:56

**LEA 403 STATE #2**  
**H202825-02 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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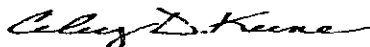
**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	503	5.00	mg/L	1	2110104	HM	26-Nov-12	310.1	
Calcium	2480	1.60	mg/L	1	2101718	HM	30-Nov-12	SM3500Ca-D	
Alkalinity, Carbonate	ND	0.00	mg/L	1	2110104	HM	26-Nov-12	310.1	
Chloride*	19400	4.00	mg/L	1	2112104	HM	26-Nov-12	4500-Cl-B	
Conductivity*	58700	1.00	uS/cm	1	2112607	HM	26-Nov-12	120.1	
Magnesium	267	1.00	mg/L	1	2101718	HM	30-Nov-12	SM3500Mg-E	
pH*	7.56	0.100	pH Units	1	2112607	HM	26-Nov-12	150.1	
Potassium	575	1.00	mg/L	1	2101718	HM	30-Nov-12	HACH 8049	
Sodium	9190	1.00	mg/L	1	2101718	HM	30-Nov-12	Calculation	
Sulfate*	261	10.0	mg/L	1	2112703	AP	27-Nov-12	375.4	
TDS*	32300	5.00	mg/L	1	2112602	HM	21-Nov-12	160.1	
Alkalinity, Total*	412	4.00	mg/L	1	2110104	HM	26-Nov-12	310.1	

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 SUNDOWN ENERGY  
 P. O. BOX 277  
 WICKETT TX, 79788

 Project: REEVES QUEEN WATERFLOOD UN:  
 Project Number: NOT GIVEN  
 Project Manager: KYLE PAXTON  
 Fax To: NOT GIVEN

 Reported:  
 19-Dec-12 15:56

**COMP OF S VACUUM & LEA 403**  
**H202825-03 (Water)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	317	5.00	mg/L	1	2110104	HM	13-Dec-12	310.1	
Alkalinity, Carbonate	ND	0.00	mg/L	1	2110104	HM	13-Dec-12	310.1	
Chloride*	16700	4.00	mg/L	1	2121905	HM	19-Dec-12	4500-Cl-B	
Conductivity*	50900	1.00	uS/cm	1	2121806	AP	18-Dec-12	120.1	
pH*	7.57	0.100	pH Units	1	2121910	HM	11-Dec-12	150.1	
Resistivity	0.196		Ohms/m	1	2121908	HM	18-Dec-12	120.1	
Specific Gravity @ 60° F	1.016	0.000	[blank]	4	2121909	HM	19-Dec-12	SM 2710F	
Sulfate*	296	10.0	mg/L	1	2120501	AP	10-Dec-12	375.4	
TDS*	33300	5.00	mg/L	1	2120605	AP	13-Dec-12	160.1	
Alkalinity, Total*	260	4.00	mg/L	1	2110104	HM	13-Dec-12	310.1	

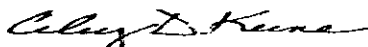
**Dissolved Metals**

Barium	ND	1.00	mg/L	100	2121907	CK	13-Dec-12	200.7	GAL
Calcium	2200	100	mg/L	100	2121907	CK	13-Dec-12	200.7	GAL
Iron	ND	5.00	mg/L	100	2121907	CK	13-Dec-12	200.7	GAL
Magnesium	619	100	mg/L	100	2121907	CK	13-Dec-12	200.7	GAL
Potassium	326	100	mg/L	100	2121907	CK	13-Dec-12	200.7	GAL
Sodium	7650	100	mg/L	100	2121907	CK	13-Dec-12	200.7	GAL

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 SUNDOWN ENERGY  
 P. O. BOX 277  
 WICKETT TX, 79788

 Project: REEVES QUEEN WATERFLOOD UNI  
 Project Number: NOT GIVEN  
 Project Manager: KYLE PAXTON  
 Fax To: NOT GIVEN

 Reported:  
 19-Dec-12 15:56

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2101718 - \*\*\* DEFAULT PREP \*\*\***
**Blank (2101718-BLK1)**

Prepared: 17-Oct-12 Analyzed: 09-Nov-12

Magnesium	ND	1.00	mg/L
Potassium	ND	1.00	mg/L
Calcium	ND	1.60	mg/L

**LCS (2101718-BS1)**

Prepared &amp; Analyzed: 17-Oct-12

Potassium	3.00		mg/L	3.00		100	80-120
Magnesium	54.4		mg/L	50.0		109	80-120
Calcium	20.8		mg/L	20.0		104	80-120

**Duplicate (2101718-DUP1)**

Source: H202593-01

Prepared: 17-Oct-12 Analyzed: 09-Nov-12

Magnesium	1820	1.00	mg/L	1880		3.24	20
Calcium	6710	1.60	mg/L	6410		4.57	20
Potassium	540	1.00	mg/L	540		0.00	20

**Batch 2110104 - General Prep - Wet Chem**
**Blank (2110104-BLK1)**

Prepared &amp; Analyzed: 31-Oct-12

Alkalinity, Carbonate	ND	0.00	mg/L
Alkalinity, Bicarbonate	ND	5.00	mg/L
Alkalinity, Total	ND	4.00	mg/L

**LCS (2110104-BS1)**

Prepared &amp; Analyzed: 31-Oct-12

Alkalinity, Carbonate	ND	0.00	mg/L			80-120
Alkalinity, Bicarbonate	137	5.00	mg/L			80-120
Alkalinity, Total	112	4.00	mg/L	100	112	80-120

**LCS Dup (2110104-BSD1)**

Prepared &amp; Analyzed: 31-Oct-12

Alkalinity, Carbonate	ND	0.00	mg/L			80-120	20
Alkalinity, Bicarbonate	137	5.00	mg/L			80-120	0.00 20
Alkalinity, Total	112	4.00	mg/L	100	112	80-120	0.00 20

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Caley D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**SUNDOWN ENERGY  
P. O. BOX 277  
WICKETT TX, 79788Project: REEVES QUEEN WATERFLOOD UN  
Project Number: NOT GIVEN  
Project Manager: KYLE PAXTON  
Fax To: NOT GIVENReported:  
19-Dec-12 15:56**Inorganic Compounds - Quality Control**  
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 2112104 - General Prep - Wet Chem</b>										
<b>Blank (2112104-BLK1)</b>				Prepared & Analyzed: 26-Nov-12						
Chloride	ND	4.00	mg/L							
<b>LCS (2112104-BS1)</b>				Prepared & Analyzed: 26-Nov-12						
Chloride	104	4.00	mg/L	100		104	80-120			
<b>LCS Dup (2112104-BSD1)</b>				Prepared & Analyzed: 26-Nov-12						
Chloride	104	4.00	mg/L	100		104	80-120	0.00	20	
<b>Batch 2112602 - Filtration</b>										
<b>Blank (2112602-BLK1)</b>				Prepared: 21-Nov-12 Analyzed: 29-Nov-12						
TDS	ND	5.00	mg/L							
<b>LCS (2112602-BS1)</b>				Prepared: 21-Nov-12 Analyzed: 29-Nov-12						
TDS	239		mg/L	240		99.6	80-120			
<b>Duplicate (2112602-DUP1)</b>				Source: H202812-03 Prepared: 21-Nov-12 Analyzed: 29-Nov-12						
TDS	1560	5.00	mg/L		1660			6.21	20	
<b>Batch 2112607 - General Prep - Wet Chem</b>										
<b>LCS (2112607-BS1)</b>				Prepared & Analyzed: 26-Nov-12						
pH	7.05		pH Units	7.00		101	90-110			
Conductivity	1410		uS/cm	1410		100	80-120			
<b>Duplicate (2112607-DUP1)</b>				Source: H202825-01 Prepared & Analyzed: 26-Nov-12						
Conductivity	40300	1.00	uS/cm		40300			0.00	20	
pH	6.14	0.100	pH Units		6.11			0.490	20	

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 SUNDOWN ENERGY  
 P. O. BOX 277  
 WICKETT TX, 79788

 Project: REEVES QUEEN WATERFLOOD UNI  
 Project Number: NOT GIVEN  
 Project Manager: KYLE PAXTON  
 Fax To: NOT GIVEN

 Reported:  
 19-Dec-12 15:56

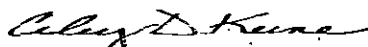
**Inorganic Compounds - Quality Control**  
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 2112703 - General Prep - Wet Chem</b>										
<b>Blank (2112703-BLK1)</b>				Prepared & Analyzed: 27-Nov-12						
Sulfate	ND	10.0	mg/L							
<b>LCS (2112703-BS1)</b>				Prepared & Analyzed: 27-Nov-12						
Sulfate	16.9	10.0	mg/L	20.0		84.6	80-120			
<b>LCS Dup (2112703-BSD1)</b>				Prepared & Analyzed: 27-Nov-12						
Sulfate	19.4	10.0	mg/L	20.0		97.2	80-120	13.8	20	
<b>Batch 2120501 - General Prep - Wet Chem</b>										
<b>Blank (2120501-BLK1)</b>				Prepared & Analyzed: 10-Dec-12						
Sulfate	ND	10.0	mg/L							
<b>LCS (2120501-BS1)</b>				Prepared & Analyzed: 10-Dec-12						
Sulfate	16.7	10.0	mg/L	20.0		83.7	80-120			
<b>LCS Dup (2120501-BSD1)</b>				Prepared & Analyzed: 10-Dec-12						
Sulfate	18.1	10.0	mg/L	20.0		90.4	80-120	7.64	20	
<b>Batch 2120605 - Filtration</b>										
<b>Blank (2120605-BLK1)</b>				Prepared & Analyzed: 06-Dec-12						
TDS	ND	5.00	mg/L							
<b>LCS (2120605-BS1)</b>				Prepared & Analyzed: 06-Dec-12						
TDS	223		mg/L	240		92.9	80-120			

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**SUNDOWN ENERGY  
P. O. BOX 277  
WICKETT TX, 79788Project: REEVES QUEEN WATERFLOOD UNI  
Project Number: NOT GIVEN  
Project Manager: KYLE PAXTON  
Fax To: NOT GIVENReported:  
19-Dec-12 15:56**Inorganic Compounds - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 2120605 - Filtration</b>										
<b>Duplicate (2120605-DUP1)</b>		<b>Source: H202905-01</b>			<b>Prepared &amp; Analyzed: 06-Dec-12</b>					
TDS	1200	5.00	mg/L		1140			5.13	20	
<b>Batch 2121806 - General Prep - Wet Chem</b>										
<b>LCS (2121806-BS1)</b>		<b>Prepared &amp; Analyzed: 18-Dec-12</b>								
Conductivity	478		uS/cm	500		95.6	80-120			
<b>Duplicate (2121806-DUP1)</b>		<b>Source: H203018-01</b>			<b>Prepared &amp; Analyzed: 18-Dec-12</b>					
Conductivity	1530	1.00	uS/cm		1530			0.00	20	
<b>Batch 2121905 - General Prep - Wet Chem</b>										
<b>Blank (2121905-BLK1)</b>		<b>Prepared &amp; Analyzed: 19-Dec-12</b>								
Chloride	ND	4.00	mg/L							
<b>LCS (2121905-BS1)</b>		<b>Prepared &amp; Analyzed: 19-Dec-12</b>								
Chloride	100	4.00	mg/L	100		100	80-120			
<b>LCS Dup (2121905-BSD1)</b>		<b>Prepared &amp; Analyzed: 19-Dec-12</b>								
Chloride	108	4.00	mg/L	100		108	80-120	7.69	20	
<b>Batch 2121909 - General Prep - Wet Chem</b>										
<b>Duplicate (2121909-DUP1)</b>		<b>Source: H202825-03</b>			<b>Prepared &amp; Analyzed: 19-Dec-12</b>					
Specific Gravity @ 60° F	1.014	0.000	[blank]		1.016			0.216	200	

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 \* 101 E. MARLAND \* HOBBS, NM 88240

**Analytical Results For:**

SUNDOWN ENERGY  
P. O. BOX 277  
WICKETT TX, 79788

Project: REEVES QUEEN WATERFLOOD UN  
Project Number: NOT GIVEN  
Project Manager: KYLE PAXTON  
Fax To: NOT GIVEN

Reported:  
19-Dec-12 15:56

**Inorganic Compounds - Quality Control**

**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	----------------	-----	--------------	-------

**Batch 2121910 - General Prep - Wet Chem**

**LCS (2121910-BS1)**

Prepared & Analyzed: 11-Dec-12

pH	7.00		pH Units	7.00	100	90-110
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**Duplicate (2121910-DUP1)**

Source: H202825-03

Prepared & Analyzed: 11-Dec-12

pH	7.61	0.100	pH Units	7.57	0.527	20
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**Analytical Results For:**SUNDOWN ENERGY  
P. O. BOX 277  
WICKETT TX, 79788Project: REEVES QUEEN WATERFLOOD UNI  
Project Number: NOT GIVEN  
Project Manager: KYLE PAXTON  
Fax To: NOT GIVENReported:  
19-Dec-12 15:56**Dissolved Metals - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

**Batch 2121907 - Dissolved/Potentially Dissolved Metals****Blank (2121907-BLK1)**

Prepared: 12-Dec-12 Analyzed: 13-Dec-12

Calcium	ND	1.00	mg/L							
Sodium	ND	1.00	mg/L							
Magnesium	ND	1.00	mg/L							
Potassium	ND	1.00	mg/L							
Iron	ND	0.050	mg/L							
Barium	ND	0.010	mg/L							

**LCS (2121907-BS1)**

Prepared: 12-Dec-12 Analyzed: 13-Dec-12

Sodium	7.88		mg/L	8.10		97.3	85-115			
Magnesium	26.3		mg/L	25.0		105	85-115			
Calcium	4.68		mg/L	5.00		93.6	85-115			
Barium	2.36		mg/L	2.50		94.4	85-115			
Potassium	9.85		mg/L	10.0		98.5	85-115			
Iron	4.87		mg/L	5.00		97.4	85-115			

**LCS Dup (2121907-BSD1)**

Prepared: 12-Dec-12 Analyzed: 13-Dec-12

Calcium	4.71		mg/L	5.00		94.2	85-115	0.639	20	
Magnesium	26.3		mg/L	25.0		105	85-115	0.00	20	
Sodium	7.87		mg/L	8.10		97.2	85-115	0.127	20	
Potassium	9.69		mg/L	10.0		96.9	85-115	1.64	20	
Iron	4.91		mg/L	5.00		98.2	85-115	0.818	20	
Barium	2.36		mg/L	2.50		94.4	85-115	0.00	20	

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Celey D. Keene, Lab Director/Quality Manager



**Notes and Definitions**

GAL	Analysis subcontracted to Green Analytical Laboratories, a subsidiary of Cardinal Laboratories.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager





# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

Company Name: <b>Sundown Energy</b>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																															
Project Manager: <b>Kyle Paxton</b>				P.O. #:				<b>5 Cell Analysis Composite</b>																															
Address:				Company:																																			
City: <b>Dallas</b> State: <b>TX</b> Zip:				Attn:																																			
Phone #: <b>214-368-6100</b> Fax #: <b>X2165</b>				Address:																																			
Project #:				City:																																			
Project Owner:				State: Zip:																																			
Project Name: <b>Water Samples</b>				Phone #:																																			
Project Location:				Fax #:																																			
Sampler Name: <b>Jason Able</b>																																							
FOR LAB USE ONLY				MATRIX				PRESERV.		SAMPLING																													
Lab I.D.		Sample I.D.		GRAB OR (COMP. # CONTAINERS)		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER		ACID/BASE		ICE / COOL		OTHER		DATE		TIME													
<b>H207829</b>		<b>1 South Vacuum #5</b>		<b>G 1</b>																				<b>11/16/12</b>															
		<b>2 Lea 403 State #2</b>		<b>G 1</b>																				<b>11/20/12</b>															
		<b>3 Composite of South Vacuum #5 &amp; Lea 403 State #2</b>		<b>1</b>																				<b>11/20/12</b>															

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Relinquished By:		Date: <b>11/20/12</b>		Received By:		Date: <b>11/20/12</b>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:	
Relinquished By:		Date:		Received By:		Date:		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Fax #:	
Delivered By: (Circle One)		Sample Condition		CHECKED BY:		<b>REMARKS:</b> <b>575-706-3289</b> <b>Kpaxton@elbandenergy.com</b>			
Sampler - UPS - Bus - Other:		Cool - Intact Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		(Initials) 					



## CARDINAL LABORATORIES SCALE INDEX WATER ANALYSIS REPORT

Company	: SUNDOWN ENERGY	Date Sampled	: 11/20/12
Lease Name	: REEVES QUEEN WATERFLOOD UNIT	Company Rep.	: KYLE PAXTON
Well Number	: COMPOSITE OF S VACUUM & LEA 403		
Location	: NOT GIVEN		

## ANALYSIS

- |                                   |        |                                    |
|-----------------------------------|--------|------------------------------------|
| 1. pH                             | 7.57   |                                    |
| 2. Specific Gravity @ 60/60 F.    | 1.0160 |                                    |
| 3. CaCO3 Saturation Index @ 80 F. | +0.546 | 'Calcium Carbonate Scale Possible' |
| @ 140 F.                          | +1.476 | 'Calcium Carbonate Scale Possible' |

## Dissolved Gasses

- |                     |                |     |
|---------------------|----------------|-----|
| 4. Hydrogen Sulfide | ND             | PPM |
| 5. Carbon Dioxide   | ND             | PPM |
| 6. Dissolved Oxygen | Not Determined |     |

## Cations

- | Cations             | mg/L     | / | Eq. Wt. | = | MEQ/L  |
|---------------------|----------|---|---------|---|--------|
| 7. Calcium (Ca++)   | 2,200.00 | / | 20.1    | = | 109.45 |
| 8. Magnesium (Mg++) | 619.00   | / | 12.2    | = | 50.74  |
| 9. Sodium (Na+)     | 7,650    | / | 23.0    | = | 321.49 |
| 10. Barium (Ba++)   | 0.000    | / | 68.7    | = | 0.00   |

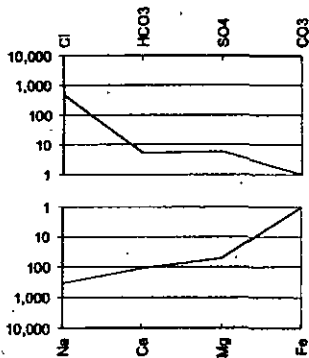
## Anions

- |                         |        |   |      |   |        |
|-------------------------|--------|---|------|---|--------|
| 11. Hydroxyl (OH-)      | 0      | / | 17.0 | = | 0.00   |
| 12. Carbonate (CO3=)    | 0      | / | 30.0 | = | 0.00   |
| 13. Bicarbonate (HCO3-) | 317    | / | 61.1 | = | 5.19   |
| 14. Sulfate (SO4=)      | 296    | / | 48.8 | = | 6.07   |
| 15. Chloride (Cl-)      | 16,700 | / | 35.5 | = | 470.42 |

**Other**

- |  |         |            |      |             |      |
|--|---------|------------|------|-------------|------|
| 16. Soluble Iron (Fe)                  | 0.000   | /          | 18.2 | =           | 0.00 |
| 17. Total Dissolved Solids             | 33,300  |            |      |             |      |
| 18. Total Hardness As CaCO3            | 8,042.0 |            |      |             |      |
| 19. Calcium Sulfate Solubility @ 90 F. | 2,270   |            |      |             |      |
| 20. Resistivity (Measured)             | 0.196   | Ohm/Meters | @ 77 | Degrees (F) |      |

### Logarithmic Water Pattern



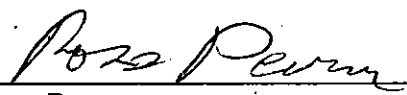
### PROBABLE MINERAL COMPOSITION

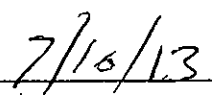
COMPOUND	Eq. Wt.	X	MEQ/L	=	mg/L
Ca(HCO <sub>3</sub> ) <sub>2</sub>	81.04	X	5.19	=	420
CaSO <sub>4</sub>	68.07	X	6.07	=	413
CaCl <sub>2</sub>	55.50	X	98.20	=	5,450
Mg(HCO <sub>3</sub> ) <sub>2</sub>	73.17	X	0.00	=	0
MgSO <sub>4</sub>	60.19	X	0.00	=	0
MgCl <sub>2</sub>	47.62	X	50.74	=	2,416
NaHCO <sub>3</sub>	84.00	X	0.00	=	0
NaSO <sub>4</sub>	71.03	X	0.00	=	0
NaCl	58.46	X	321.49	=	18,794



Form C-108  
Affirmative Statement  
Sundown Energy, LP  
Arco 28 State Wells No. 1 & 2  
Section 28, T-18 South, R-35 East, NMPM,  
Lea County, New Mexico

Available geologic and engineering data has been examined and no evidence of open faults or hydrological connection between the injection zone and any underground sources of drinking water has been found.

  
\_\_\_\_\_  
Ross Pearson  
Area Production Manager  
Sundown Energy, LP

  
\_\_\_\_\_  
Date







**Sundown Energy, LP  
Form C-108: Arco 28 State Wells No. 1 & 2  
Section 28, T-18 South, R-35 East, NMPM  
Lea County, New Mexico**

**Offset Operator/Leasehold Owner Notification List (See Attached Map)**

Oxy USA, Inc.  
P.O. Box 4294  
Houston, Texas 77210

Featherstone Development Corp.  
P.O. Box 429  
Roswell, New Mexico 88202

Paladin Energy Corporation  
10290 Monroe Drive, Suite 301  
Dallas, Texas 75229

Commissioner of Public Lands  
P.O. Box 1148  
Santa Fe, New Mexico 87504

T.H. McElvain Oil & Gas LLP  
1050 17<sup>th</sup> Street, Suite 2500  
Denver, Colorado 80265

Branex Resources/Oscura Resources  
629 Sudderth Drive,  
Ruidoso, New Mexico 88345

BP  
740 Rosebud Rd.  
Nara Vista, New Mexico 88430

Exxon Mobil Corporation  
P.O. Box 4358  
Houston, Texas 77210-4358

**Surface Owner (Arco 28 State Wells No. 1 & 2)**

Commissioner of Public Lands  
P.O. Box 1148  
Santa Fe, New Mexico 87504

**Additional Notice**

Oil Conservation Division  
1625 N. French Drive  
Hobbs, New Mexico 88240