

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: **Pressure Maintenance (Initial)** and the application **MUST go to Examiner Hearing for approval.**
- II. OPERATOR: **HPPC, Inc.** (Ogrid: 371698)
ADDRESS: **306 W. Wall Street, Midland, TX 79701**
- CONTACT PARTY: **HPPC, Inc., Rajan Prasad 432-577-5067, Agent: SOS Consulting, LLC – Ben Stone 903-488-9850**
- III. WELL DATA: **All well data and applicable wellbore diagrams are ATTACHED.**
- IV. **This is not an expansion of an existing project.**
- V. **A map is attached** that identifies all wells and leases within two miles of any proposed injection well with a **ONE-Mile** radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- *VI. A tabulation is attached of data on all wells of public record within the area of review which penetrate the proposed injection zone. **There are 11 Wells in the subject AOR which Penetrate the proposed ABO interval.** The data includes a description of each well's type, construction, date drilled, location, depth, and a **schematic of any plugged well(s)** illustrating all plugging detail. **7 P&A Wells penetrate.**
- VII. **The following data is ATTACHED** on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. **Appropriate geologic data on the injection zone is ATTACHED** 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 TDS solids concentrations of $\leq 10,000$ mg/l) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval. **Additional EXHIBITS will be presented at Hearing.**
- IX. **Stimulation program – a conventional acid job may be performed to clean and open the formation.**
- *X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted). **Well Logs are on file with OCD. Additional EXHIBITS will be presented at Hearing.**
- *XI. **There are several water wells/ PODs within one mile of the proposed Injection Well. 2 or more will be sampled and analyzed – results will be included as EXHIBITS for Hearing.**
- XII. **An affirmative statement is ATTACHED that available geologic and engineering data has been examined and no evidence was found** of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. **"Proof of Notice" section on the next page of this form has been completed and ATTACHED. There are 7 offset Operators, Lessees and/or Mineral Owners within ½ mile; State & Private Minerals - all have been noticed. Well location is State.**
- 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: **Ben Stone** TITLE: **SOS Consulting, LLC agent for HPPC, Inc.**

SIGNATURE: _____

DATE: **8/22/2018**

E-MAIL ADDRESS: **ben@sosconsulting.us**



* If the information required under Sections VI, VIII,)
Please show the date and circumstances of the ea

it need not be resubmitted.

FORM C-108 – APPLICATION FOR AUTHORIZATION TO INJECT (cont.)

III. WELL DATA – *The following information and data is included (See ATTACHED Wellbore Schematic):*

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 *pursuant to the following criteria is ATTACHED.*

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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C-108 - Items III, IV, V

Item III - Subject Well Data

Wellbore Diagram - CURRENT
Wellbore Diagram – PROPOSED

Item IV – Tabulation of AOR Wells

Tabulation includes all construction data for all wells within a one-half mile radius.
11 wells penetrate the proposed injection interval; 4 active and 7 P&A'd.

Item V – Area of Review Maps

1. Two Mile AOR Map with One-Mile Fresh Water Well Radius
2. One-Half Mile AOR Map
3. Proposed Buckeye Abo Project Area

All Above Exhibits follow this page.

Additional Exhibits may be presented at hearing.



WELL SCHEMATIC - CURRENT Lea 946 State Well No.1

API 30-025-21623

1980' FNL & 660' FWL, SEC. 2-T18S-R35E
LEA COUNTY, NEW MEXICO

Buckeye; Abo (8100)

Spud Date: 11/02/1992
Config Inj. Dt (Est): 11/01/20

Current Production Avgs: 4 bopd; 19 mcf; 45 bwpd

Surface Casing

13.375", 48.0# H-40 STC Csg. (17.5" Hole) @ 369'
380 sx - Circulated to Surface

Intermediate Casing

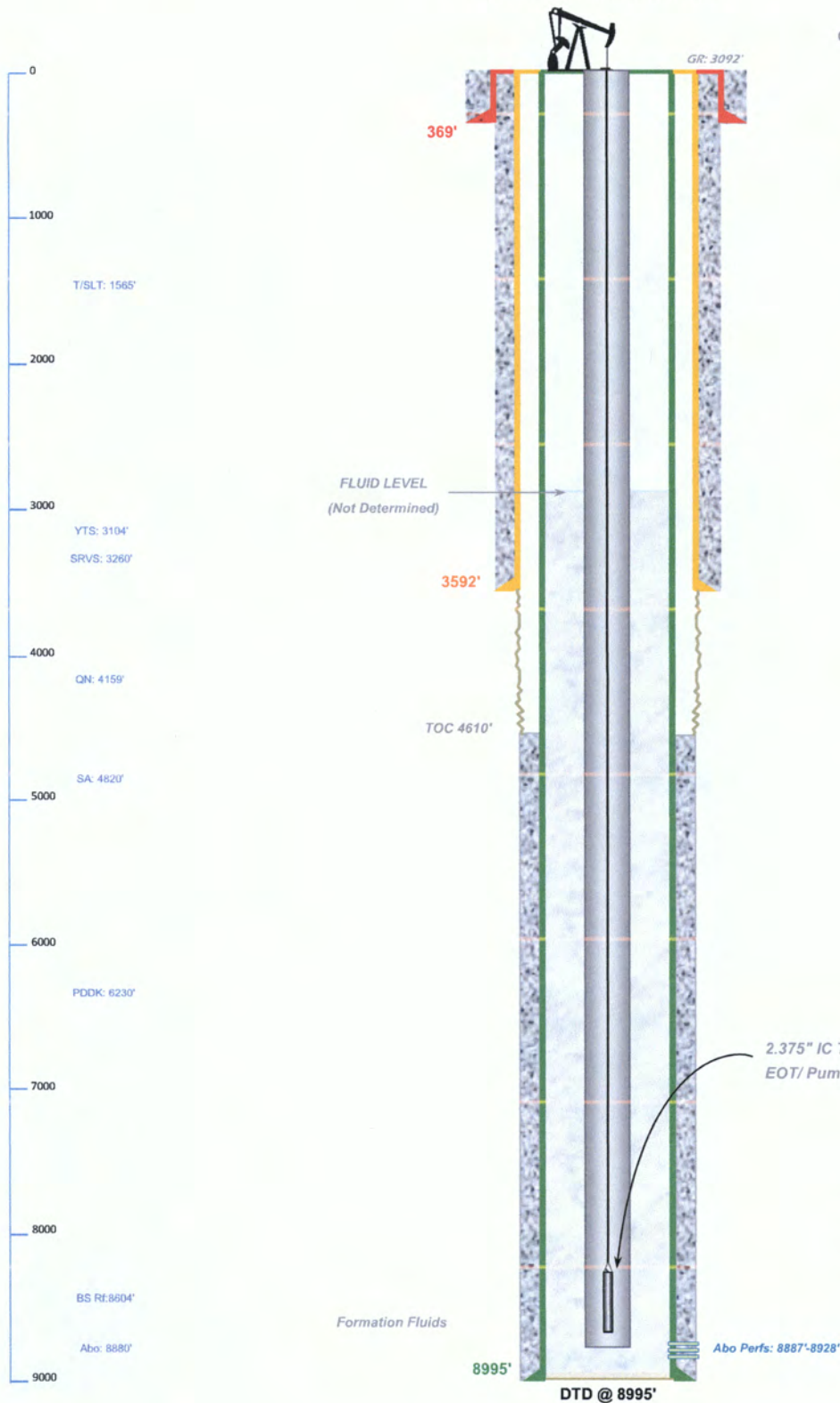
8.625", 32.0# J-55 Csg. (11.0" Hole) @ 3592'
2450 sx - Circulated

HPPC, Inc.

Abo Producer on Pump.

Production Casing

4.5", 11.6# Csg. (7.875" Hole) @ 8995'
DV @ 7398'; 1st w/ 360 sx;
2nd w/ 610 sx - TOC @ 4610' by Temp.



Drawn by: Ben Stone, 8/21/2018

SOS Consulting, LLC



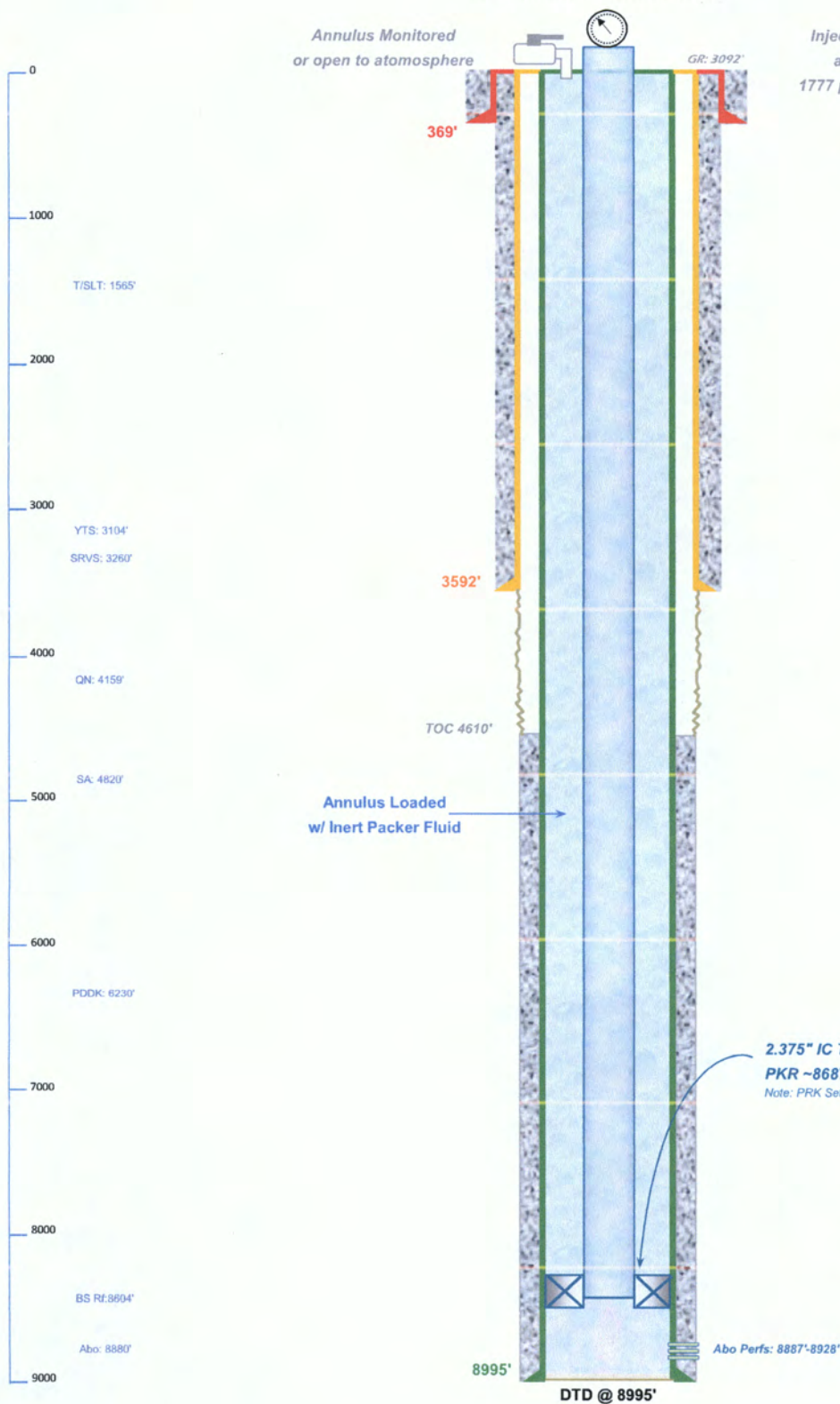
WELL SCHEMATIC - PROPOSED **Lea 946 State Well No.1**

API 30-025-21623

1980' FNL & 660' FWL, SEC. 2-T18S-R35E
 LEA COUNTY, NEW MEXICO

Buckeye; Abo (8100)

Spud Date: 11/02/1992
 Config Inj. Dt (Est): 11/01/20



Injection Pressure Regulated
 and Volumes Reported
 1777 psi Max. Surface (0.2 psi/ft)

Surface Casing

13.375", 48.0# H-40 STC Csg. (17.5" Hole) @ 369'
 380 sx - Circulated to Surface

Intermediate Casing

8.625", 32.0# J-55 Csg. (11.0" Hole) @ 3592'
 2450 sx - Circulated



Convert to Injection:

POOH w/ Rods, Pump & Tubing.
 RIH w/ 2.375" IPC Injection Tbg & PKR.
 Set PKR @ ~8687'±. Conduct MIT.
 Acidize if necessary or desired.
 Commence Injection Operations.

2.375" IC Tubing (or smaller)

PKR ~8687'±

Note: PKR Set 100' Above Uppermost Perf Interval.

Production Casing

4.5", 11.6# Csg. (7.875" Hole) @ 8995'
 DV @ 7398'; 1st w/ 360 sx;
 2nd w/ 610 sx - TOC @ 4610' by Temp.

Drawn by Ben Stone, 8/21/2018



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Form C-108 Item VI - Tabulation of AOR Wells

Top of Proposed ABO Interval ~8680'

11 Wellbores Penetrate Proposed Interval.

API	Subject Well	Current Operator	Well Name	Well Number	Type	Mineral Owner	Status	ULSTR	Measured Depth	Plugged On
30-025-21623	[371698] HPPC, INC.	ABO Perfs: 8887'-8928'; 13.375" (17.5" hole) @ 369' w/ 380 sx, Circ to Surf.; 8.625" (11.0" hole) @ 3592' w/ 2450 sx - Circ.; 4.5" (7.875" hole) @ 8995' w/ 970 sx TOC @ 4610' by Temp.	LEA 946 STATE	#001	Oil	State	Active	E-2-18S-35E	8995'	
Section 2 Wells										
30-025-03039	[148967] SAGA PETROLEUM LLC		GEORGE MCGONAGILL	#001	Oil	Private	P&A-R	A-2-18S-35E	9259'	5/31/2002 SEE P&A DIAGRAM.
30-025-21758	[214263] PRE-ONGARD WELL OPERATOR		PRE-ONGARD WELL	#002	Oil	Private	P&A-R	B-2-18S-35E	9015'	10/22/1982 SEE P&A DIAGRAM.
30-025-21676	[371698] HPPC, INC.	ABO Perfs: 8681'-8975'; 13.375" (17.5" hole) @ 375' w/ 325 sx, Circ to Surf.; 8.625" (11.0" hole) @ 3596' w/ 1300 sx - TOC 2640' by Temp.; 4.5" (7.875" hole) @ 9000' w/ 1290 sx TOC @ 3430' by Temp.	LEA 946 STATE	#003	Oil	State	Active	C-2-18S-35E	9000'	
30-025-32157	[371698] HPPC, INC.	ABO Perfs: 8692'-8916'; 13.375" (17.5" hole) @ 501' w/ 500 sx, Circ to Surf.; 9.625" (12.25" hole) @ 3620' w/ 1550 sx - Circ 250 sx to Surf.; 5.5" (7.875" hole) @ 9125' w/ 1700 sx TOC @ 3000' by Calc. Est.	LEA 946 STATE	#005	Oil	State	Active	D-2-18S-35E	9125'	
30-025-21877	[16696] OXY USA INC	ABO Perfs: 8688'-8710'; 13.375" (17.5" hole) @ 334' w/ 300 sx, Circ to Surf.; 8.625" (11.0" hole) @ 3585' w/ 650 sx - TOC 2800' by Calc.; 5.5" (7.875" hole) @ 9212' w/ 1900 sx TOC @ 2500' by Calc. Est.	LEE	#001	Oil	Private	Active	G-2-18S-35E	9200'	
30-025-25593	[228937] MATADOR PRODUCTION COMPANY		HANLAD STATE	#001	Gas	State	Active	K-2-18S-35E	4699'	DOES NOT PENETRATE
30-025-21259	[214263] PRE-ONGARD WELL OPERATOR		PRE-ONGARD WELL	#001	Oil	State	P&A-R	L-2-18S-35E	12625'	5/7/1965 SEE P&A DIAGRAM.
30-025-32964	[10179] HARVEY E YATES CO		BUCKEYE 2 STATE	#001	Oil	State	P&A-R	O-2-18S-35E	9282'	6/23/1995 SEE P&A DIAGRAM.
Section 3 Wells										
30-025-30595	[214263] PRE-ONGARD WELL OPERATOR		PRE-ONGARD WELL	#004	Oil	State	P&A-R	G-3-18S-35E	9238'	7/16/1990 SEE P&A DIAGRAM.
30-025-21605	[371698] HPPC, INC.	ABO Perfs: 8887'-8928'; 13.375" (17.5" hole) @ 369' w/ 380 sx, Circ to Surf.; 8.625" (11.0" hole) @ 3592' w/ 2450 sx - Circ.; 4.5" (7.875" hole) @ 8995' w/ 970 sx TOC @ 4610' by Temp.	LEA 946 STATE	#002	Oil	State	Active	H-3-18S-35E	9000'	
30-025-21315	[17643] PHILLIPS PETROLEUM CO		SANTA FE	#114	Oil	State	P&A-R	I-3-18S-35E	9100'	1/11/1974 SEE P&A DIAGRAM.
30-025-21638	[17643] PHILLIPS PETROLEUM CO		SANTA FE	#116	Oil	State	P&A-R	J-3-18S-35E	9025'	8/10/1971 SEE P&A DIAGRAM.

SUMMARY: 11 wells penetrate proposed injection interval. 4 Active; 7 P&A.



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C-108 ITEM VI

AOR Well Information

Plugged Well Schematics

P&A WELLBORE DIAGRAM

George McGonagill #1

330' FNL & 990' FEL

Sec. 2 (A), T18S, R35E

Lea County, NM

API No. 30-025-03039

Vacuum Gr. & San Andres Pool

Gr Elev 3591'

DF Elev 3904'

Spud 10-21-81

Drig Comp 11-25-81

Tops:

Anhydrite 1792'

Yates 3187'

Queen 4213'

San Andres 5035'

Glorieta 8398'

Abn Porosity 8794'

Spot 25 sx
60'-0'

Spot 30 sx
370'-260'
Tag @ 3283'

Spot 30 sx
1930'-1820'

Spot 35 sx
2940'-2738'
Tag @ 753'

Spot 25 sx
3548'-3296'
Tag @ 3282'

10-14-83 First Production

Vac Grayburg San Andres

Spot 5 sx
4950'-4496'
Tag @ 4478'

17" hole

13-3/8" 40# csg @ 325'

Cmtd w/330 sx, circ surf

Top of 5-1/2" csg stjd @ 2888'

11" hole

6-5/8" 24 & 32# csg @ 2495'

Cmtd w/1365 sx, circ

Perfs 4790'-4846' open

Perfs 4832'-4844' sqzd w/25 sx

CIBF @ 4870' w/2 sx cmf

Perfs 5020'-5038' sqzd w/25 sx

CIBF @ 8600' w/2 sx cmf

Perfs 8700'-8808' open

Perfs 8720'-8880' sqzd w/50 sx

7-7/8" hole

5-1/2" 15.5 & 17# csg @ 9250'

Cmtd w/720 sx, TOC 3500' by TS

**PSTD 4870'
TD 9253'**

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 1960, 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.
30-025-03039

5. Indicate Type of Lease
STATE ☐ FEE ☒

6. State Oil & Gas Lease No.

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
Saga Petroleum LLC

3. Address of Operator
415 W. Wall, Ste. 1900, Midland, TX 79701

7. Lease Name or Unit Agreement Name
George McGonagill

8. Well No. 1

9. Pool name or Wildcat
Vac Grayburg San Andres

4. Well Location
Unit Letter A, 330 Feet From The North Line and 990 Feet From The East Line
Section 2 Township 18S Range 35E NMPM Lea County

10. Elevation (Show whether DF, RKB, RT, GR, etc.)
3891 GR 3904 DF

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"/>	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"/>		CASING TEST AND CEMENT JOB <input type="checkbox"/>	
OTHER: <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.

5/28/02 Spot 5 sx cmt. from 4950' to 4496', WOC & tag TOC @ 4478'.

5/29/02 Circulate hole w/ mud.

5/29/02 Spot 25 sx cmt. from 3548' to 3296', WOC & tag TOC @ 3282'.

5/29/02 Spot 35 sx cmt. from 2940' to 2738', WOC & tag TOC @ 2753'.

5/29/02 Spot 30 sx cmt. from 1930' to 1820'.

5/30/02 Spot 30 sx cmt. from 370' to 260', WOC & tag TOC @ 264'.

5/30/02 Spot 25 sx cmt. from 60' to surface.

5/31/02 Cut off wellhead and install dry hole marker.

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

SIGNATURE

Roger Massey

TITLE

Agent

DATE

06/04/02

TYPE OR PRINT NAME

Roger Massey

TELEPHONE NO. (915) 530-0907

(This space for State Use)

APPROVED BY

Johnny Polanco

TITLE

COMPLIANCE OFFICER

DATE

OCT 18 2002

PLUGGED WELL SCHEMATIC

Lee No.2

API 30-025-21758

330' FNL & 2310' FEL, SEC. 2-T18S-R35E
LEA COUNTY, NEW MEXICO

Spud Date: 3/28/1966

P&A Date: 10/22/1982

Well Plugged by:
Apollo Energy, Inc.

<PLUGGING ITEMS LISTED LEFT>

PLUGS:

Spot 10 sx
90'-0'

P&A Marker

G.L. 3897'

<PRE-P&A EXISTING ITEMS LISTED RIGHT>

Surface Casing

13.375", 48.0# Csg. (17.5" Hole) @ 373'
400 sx - Circulated to Surface

Intermediate Casing

8.625", 24.0# Csg. (11.0" Hole) @ 3600'
1250 sx - Circulated to Surface

<P&A SUBSEQUENT SUNDRY>

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT	
NO. OF WELLS REGISTERED	
COUNTY	
TOWNSHIP	
RANGE	
SECTION	
LAND OF FILE	
OPERATION	

RECORD: 042
Sheet: 1

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-101
Revised 10-1-78

SUNDRY NOTICES AND REPORTS ON WELLS

DO NOT USE THIS FORM FOR RECORDS OF WELLS OR TO REPORT ON A WELL IN A DIFFERENT RESERVOIR.

1. Name of Well: Lee No. 2

2. Location of Well: 2310' East, 330' North

3. Name of Operator: Apollo Energy, Inc.

4. Address of Operator: P. O. Box 5315, Hobbs, New Mexico 88241

5. Well No.: 2

6. Field and Pool, or Village: Hobbs Area Pool

7. County: Lea

8. Township: 2

9. Range: 18S

10. Section: 35E

11. Previous Owner (if other than OP, RP, GP, etc.):

12. Previous Owner (if other than OP, RP, GP, etc.):

13. Previous Owner (if other than OP, RP, GP, etc.):

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109. Previous Owner (if other than OP, RP, GP, etc.):

110. Previous Owner (if other than OP, RP, GP, etc.):

Hole Loaded w/ 10# Mud

Set CIBP @ 4306'
Capped w/ 35' Cmt

Left 100' Cmt on CICR
Set CICR @ 8390'
Sqz'd Perfs Below

Set CIBP @ 8640'
Sqz'd Perfs Below

Formation Fluids

9010'

DTD @ 9010'

Perfs: 8400'-20' (Sqz'd)

Perfs: 8510'-30' (Sqz'd)

BS Perfs: 8650'-70' (Sqz'd)

Production Casing

4.5", 11.6;10.5;9.5# Csg. (7.875" Hole) @ 9010'
1171 sx - TOC ~2700' Calc.

Drawn by: Ben Stone, 8/16/2018

SOS Consulting, LLC

10

PLUGGED WELL SCHEMATIC

Superior A State No.1

API 30-025-21259

1980' FSL & 660' FWL, SEC. 2-T18S-R35E
LEA COUNTY, NEW MEXICO

Spud Date: 5/7/1965

P&A Date: 4/30/1967

Well Plugged by:
Hanagan Petro. Corp.

<PLUGGING ITEMS LISTED LEFT>

PLUGS:

Spot 10 sx
20'-0"

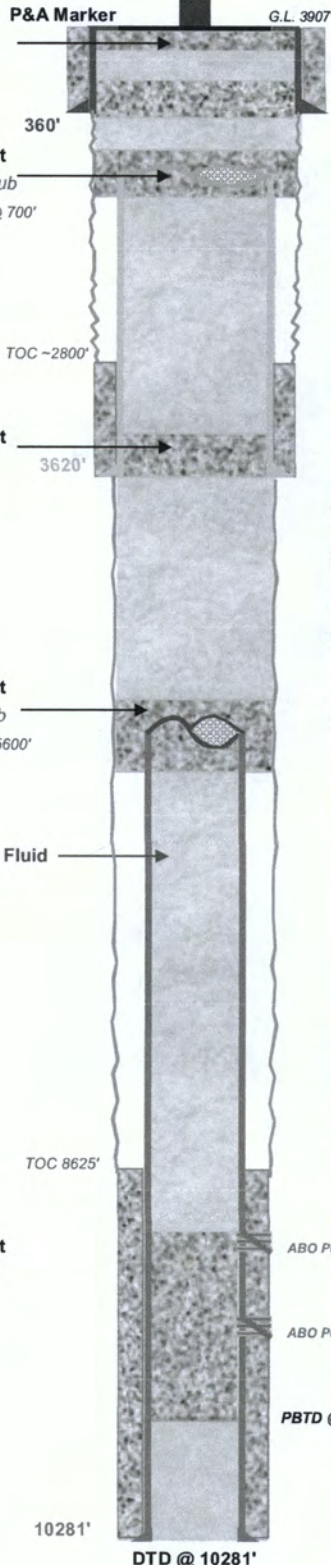
Spot 40 sx Cmt
Across 9.625" Stub
Shot & Pulled 9.255" @ 700'

Spot 40 sx Cmt
3620'-3540'

Spot 40 sx Cmt
Across 5.5" Stub
Shot & Pulled 5.5" @ 5600'

Hole Loaded w/ ML Fluid

Spot 30 sx Cmt
Cover all perms.



<PRE-P&A EXISTING ITEMS LISTED RIGHT>

Surface Casing

13.375", 48.0# Csg. (17.5" Hole) @ 360'
300 sx - Circulated to Surface

Intermediate Casing

9.625", 36.0# Csg. (12.25" Hole) @ 3620'
200 sx - TOC @ 2800' by Calc.

<P&A SUBSEQUENT SUNDRY>

WELL NO.	30-025-21259
DISTRICT	1
NAME & P.C.	HANAGAN PETROLEUM CORP.
PLUG	10
LAND OFFICE	10
OPERATOR	10

NEW MEXICO OIL CONSERVATION COMMISSION

Form O-113
Supplementary O&G
Cable and C-480
Effective 1-6-67

SUNDRY NOTICES AND REPORTS ON WELLS	
DO NOT USE THIS FORM FOR ANY OTHER PURPOSES.	
1. WELL NO.	30-025-21259
2. NAME OF COMPANY	HANAGAN PETROLEUM CORP.
3. ADDRESS OF COMPANY	Box 1737 Roswell, New Mexico
4. LOCATION OF WELL	1980' FSL & 660' FWL, SEC. 2-T18S-R35E, LEA COUNTY, NEW MEXICO
5. DATE OF NOTICE	4-30-67
6. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA	
7. SUBSEQUENT REPORT OF:	

PERFORM MECHANICAL WORK	PLUG AND ABANDON	REWORK WORK	ALTERED CASING
TEMPORARILY ABANDON	CHANGE PLUG	COMMENCE DRILLING OPER.	PLUS ANY ABANDONMENT
FILE OF ALTER CASING	OTHER	CHANGE TEST AND CEMENT JOB	

1. Spot a 30 sx plug in bottom to cover all perforation.
2. Load hole with mud laden fluid.
3. Shot & pulled 5600' - 5 1/2" casing.
4. Spot a 40 sx plug at stub of 5 1/2".
5. Spot a 40 sx plug at 3620'.
6. Shoot and pull 700' - 9 5/8" casing.
7. Spot a 40 sx plug at 700' and 360'.
8. Spot a 10 sx plug in top and erect a regulation marker.

I, the undersigned, hereby certify that the foregoing is true and correct to the best of my knowledge and belief.	
SIGNED	ROBERTS PIPE & SUPPLY
TITLE	Agent
DATE	4-30-67
APPROVED BY	John W. Remy
TITLE	
DATE	

CONDITIONS OF APPROVAL, IF ANY:

ABO Perfs: 8770'-8812' (Cvr'd)

ABO Perfs: 9010'-58' (Cvr'd)

PBTD @ 9600'

Production Casing

5.5", 17.0# Csg. (7.875" Hole) @ 10281'
400 sx - TOC 8625' by Temp.

Drawn by: Ben Stone, 8/16/2018



PLUGGED WELL SCHEMATIC

Buckeye 2 State No.1

API 30-025-32964

660' FSL & 1650' FEL, SEC. 2-T18S-R35E
LEA COUNTY, NEW MEXICO

Spud Date: 5/7/1965

P&A Date: 6/23/1995

Well Plugged by:
Harvey E. Yates Co.

<PLUGGING ITEMS LISTED LEFT>

PLUGS:

Spot 10 sx
30'-0'

Spot 40 sx Cmt
1850'-1750'

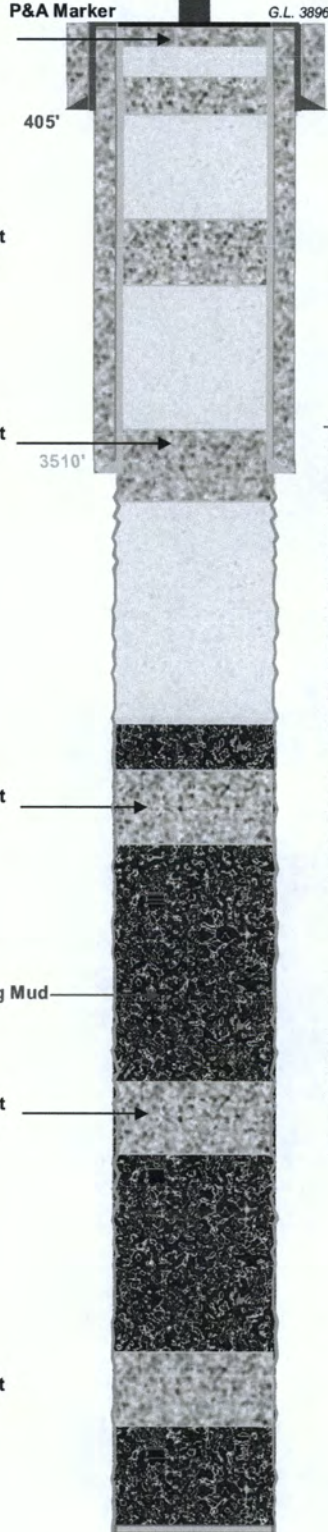
Spot 60 sx Cmt
3550'-3450'

Spot 40 sx Cmt
5130'-5030'

Hole Loaded w/ Drlg Mud

Spot 40 sx Cmt
6220'-6120'

Spot 40 sx Cmt
8550'-8450'



<PRE-P&A EXISTING ITEMS LISTED RIGHT>

Surface Casing

13.375", 48.0# Csg. (17.5" Hole) @405'
425 sx - Circulated to Surface

Intermediate Casing

8.625", 32.0# Csg. (12.25" Hole) @ 3510'
1700 sx - TOC @ 2800' Circulated

<P&A SUBSEQUENT SUNDRY>

Submit 3 Copies to Appropriate District Office DISTRICT I P.O. Box 1980, Hobbs, NM 88240 DISTRICT II P.O. Drawer 220, Artesia, NM 88210 DISTRICT III 2000 San Antonio Rd., Alamogordo, NM 87410		State of New Mexico Energy, Minerals and Natural Resources Department OIL CONSERVATION DIVISION P.O. Box 2088 Santa Fe, New Mexico 87504-2088		WELL API NO. 30-025-32964 5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/> 6. State Oil & Gas Lease No. 1-201-2 7. Lease Name or Unit Agreement Name
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 G-101) FOR SUCH PROPOSALS.)				
1. Type of Well: Oil <input type="checkbox"/> Gas <input type="checkbox"/> Other <input type="checkbox"/> P&A <input type="checkbox"/> 2. Name of Operator Harvey E. Yates Company 3. Address of Operator P.O. Box 1933, Roswell, N.M. 88202 505/623-6601		4. Well Location Unit Letter 0 660 Feet From The South Line and 1650 Feet From The East Line Section 2 Township 18S Range 35E N104M 1618 Corner 15. Elevation (Show whether (P), (R), (B), (D), etc.) 3896'		
Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data NOTICE OF INTENTION TO:				
PERFORM REMEDIAL WORK <input type="checkbox"/> TEMPORARILY ABANDON <input type="checkbox"/> PULL OR ALTER CASING <input type="checkbox"/> OTHER <input type="checkbox"/>		SUBSEQUENT REPORT OF: REMEDIAL WORK <input type="checkbox"/> COMMENCE DRILLING OPNS. <input type="checkbox"/> CASING TEST AND CEMENT JOB <input type="checkbox"/> ALTERING CASING <input type="checkbox"/> PLUG AND ABANDONMENT <input checked="" 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. 6/21/95 TD 7 7/8" hole @ 9282' 6/23/95 P&A well as follows: Set 40 sk plug @ 8450-8550' Set 40 sk plug @ 6120-6220' Set 60 sk plug @ 5030-5130' Set 60 sk plug @ 3450-3550' Set 40 sk plug @ 1750-1850' Set 10 sk plug @ surface Out off well head & install dry hole marker RR @ 11:30 pm 6/23/95				
I hereby certify that the information shown is true and complete to the best of my knowledge and belief. SIGNATURE <u>Bob Williams</u> TITLE <u>Drig Superintendent</u> DATE <u>7/3/95</u> TYPE OR PRINT NAME <u>Bob Williams</u> TELEPHONE NO. <u>505/623-660</u> (This space for State Use) APPROVED BY <u>Carly W. Hill</u> TITLE _____ DATE _____ CONDITIONS OF APPROVAL, IF ANY				

Production Casing

Never Set...

Drawn by: Ben Stone, 8/16/2018



DTD @ 9282'

12

PLUGGED WELL SCHEMATIC

Lea 946 State No.4

API 30-025-30595

2307' FNL & 1980' FEL, SEC. 3-T18S-R35E
LEA COUNTY, NEW MEXICO

Spud Date: 5/04/1989

P&A Date: 7/16/1990

Well Plugged by:
Hondo Oil & Gas Co.

<PLUGGING ITEMS LISTED LEFT>

PLUGS:

Spot 35 sx
30'-0"

P&A Marker

G.L. 3905'

<PRE-P&A EXISTING ITEMS LISTED RIGHT>

Surface Casing

13.375", 48.0# Csg. (17.5" Hole) @ 505'
525 sx - Circulated to Surface

Intermediate Casing

8.625", 24.0; 32.0# Csg. (11.0" Hole) @ 3600'
1400 sx - Circulated

<P&A SUBSEQUENT SUNDRY>

Submit 3 Copies to Appropriate District Office CONTRACT I P.O. Box 1980, Hobbs, NM 88240 CONTRACT II P.O. Drawer 150, Artesia, NM 88210 CONTRACT III 1000 E. Avenue Rd., Artesia, NM 87410		State of New Mexico Energy, Minerals and Natural Resources Department OIL CONSERVATION DIVISION P.O. Box 2088 Santa Fe, New Mexico 87504-2088	Form C-183 Revised 1-1-89 WELL API NO. 30-025-30595 5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/> 6. Show Oil & Gas Lease No. K-3581-1 7. Lease Name or Unit Agreement Name Lea 946 State 8. Well No. 4 9. Field name or Wellblock Buckeye - G.L.
---	--	--	---

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 G-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil <input checked="" type="checkbox"/> Gas <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 G Section 3 Township 18S Range 35E NMSPM Lea County
---	--	--	---

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 ☐

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 119.

This well was plugged as follows:

- (1) CIBP was set @ 8054' with 35' of cement on top
- (2) jet cut 5 1/2" casing @ 7000' and pulled
- (3) spotted 40 sx. cement plug in and out of 5 1/2" casing stub from 7050-6771'
- (4) CIBP was set @ 4687'
- (5) set 40 sx. cement plug from 4430-4330'
- (6) set 50 sx. cement plug from 3663-3485'
- (7) set 35 sx. cement plug from 30' to surface
- (8) out off wellhead and installed dry hole marker 5/11/90

Plugging procedure per Paul Kautz, BMOCD-Hobbs District Office.

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

SIGNATURE *Lisa Bohannon* TITLE Engineering Technician DATE 7/16/90
 TYPE OR PRINT NAME Lisa Bohannon 505/625-6739
 (This space for State Use)

APPROVED BY *[Signature]* TITLE DATE
 CONDITIONS OF APPROVAL, IF ANY:

Perfs: 8154'-96' (Cvr'd)

Production Casing

5.5", 17.0# Csg. (7.875" Hole) @ 8620'
200 sx - TOC 7596' by Temp.

Drawn by: Ben Stone, 8/16/2018



13

PLUGGED WELL SCHEMATIC

Santa Fe No.114

API 30-025-21315

2307' FNL & 1980' FEL, SEC. 3-T18S-R35E
LEA COUNTY, NEW MEXICO

Spud Date: 10/12/1965

P&A Date: 1/11/1974

Well Plugged by:
Phillips Petroleum Co.

<PLUGGING ITEMS LISTED LEFT>

PLUGS: Spot 25 sx
200'-0'

P&A Marker G.R. 3907'

<PRE-P&A EXISTING ITEMS LISTED RIGHT>

Surface Casing

13.375", 48.0# Csg. (17.5" Hole) @ 333'
400 sx - Circulated to Surface

Intermediate Casing

8.625", 24.0; 32.0# Csg. (11.0" Hole) @ 3600'
400 sx - TOC @ 2750' by Temp

<P&A SUBSEQUENT SUNDRY>

NO. OF COPIES RECEIVED	
DISTRIBUTION	
FILE	
U.S.S.	
LAND OFFICE	
OPERATOR	

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103 Superior Oil C-103 and C-103 Effective 10-65	
1. Indicate Type of Lease	2. Lease Agreement Date
State <input checked="" type="checkbox"/> Fee <input type="checkbox"/>	
3. State Oil & Gas Lease No.	4. State Lease No.
B-2519	
5. Name of Lessee	6. Name of Lessee
Santa Fe	
7. Well No.	8. Field and Prod. or Address
114	Buckeye Abo
9. County	10. County
Lea	

SUNDRY NOTICES AND REPORTS ON WELLS	
DO NOT USE THIS FORM FOR THE PURPOSES OF THE NEW MEXICO OIL CONSERVATION COMMISSION. SEE REGULATIONS FOR FORMS TO BE USED FOR THE PURPOSES OF THE COMMISSION.	
1. Well <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>	2. Name of Operator
Phillips Petroleum Company	
3. Address of Operator	4. Location of Well
Room 711, Phillips Building, Odessa, Texas 79761	
5. Unit Letter	6. Section
I 2310	3
7. Township	8. Range
18-S	35-E
9. Elevation (Show whether DP, RT, GR, etc.)	10. County
3907' Gr., 3917' DE, 3920' RKG	Lea

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data	
NOTICE OF INTENTION TO:	
PERFORM REMEDIAL WORK	PLUG AND ABANDON
TEMPORARILY ABANDON	REWORKING WORK
PULL OR ALTER CASING	REWORKING DRILLING OPER.
OTHER	CEILING TEST AND CEMENT JOB
	OTHER

17. Describe Plug and/or Completion Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. SEE REGS. 10-65.)

Abo perf's 8702-8946', PBTD 8953'. Ran tbg OE to 8950'. 1-5-74, Howco spotted 70 sx cmt 8950-8950', loaded hole w/mud laden fluid, pulled tbg to 6891', spotted 50 sx cmt. Pulled tbg to 6995', pnd down annulus, no returns. 1-5-74, checked cmt plug at 8937'. Howco spotted 70 sx cmt 8937-8937'. Mixed mud, loaded hole. Pulled tbg to 6891', spotted 50 sx cmt. Pulled tbg to 6992', circ 10 sx cmt. 1-7-74, checked TOC at 7000' w/lbg, tested w/1000# OK. Howell spotted 300 gals 15% acid, pulled tbg. Ram Guns perforated Gloriaeta in 5-1/2" cng w/2 jet holes/ft, 6220', 6233', 6244', 6251', 6267', 6289'. Set tbg at 6233' w/pr at 6208'. Shabbed and tested Gloriaeta 1 EO, 30 RSW, subd dry. 1-8-74, subd 100% OK. Gloriaeta none non-productive.

1-10-74, pulled tbg and pkr, ran OE to 6300'. 1-11-74, spotted 50 sx cmt 6300-5850', loaded hole w/mud laden fluid. Spotted 50 sx cmt 4900-4450', pumped in mud. Spotted 25 sx cmt 3450'. Pumped in mud. Spotted 25 sx cmt 1800-1550'. Pumped in mud. Spotted 25 sx cmt 1/200' to surface. Installed dry hole marker.

Well plugged and abandoned.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.	
W. J. Mueller	Senior Reservoir Engineer
DATE	1-16-74
APPROVED BY	DATE
John W. Ruyman	

Production Casing

5.5", 17.0# Csg. (7.875" Hole) @ 9099'
500 sx - TOC ~6450' by Calc.

Perfs: 8702'-8946'

PBTD 8970'

Perfs: 8932'-9002'

Drawn by: Ben Stone, 8/16/2018



B/SLT: 2888'

YTS: 3118'

SRVS: 3280'

QK: 4196'

FOCK: 6230'

WLFC: 8707'

Hole Loaded w/ ML Fluid

Spot 70 sx Cmt
8937'-8006'

Spot 70 sx Cmt
8950'-8650'

Formation Fluids

9099'

DTD @9100'

14

PLUGGED WELL SCHEMATIC

Santa Fe No.116

API 30-025-21638

1980' FSL & 1658' FEL, SEC. 3-T18S-R35E
LEA COUNTY, NEW MEXICO

Spud Date: 11/21/1965

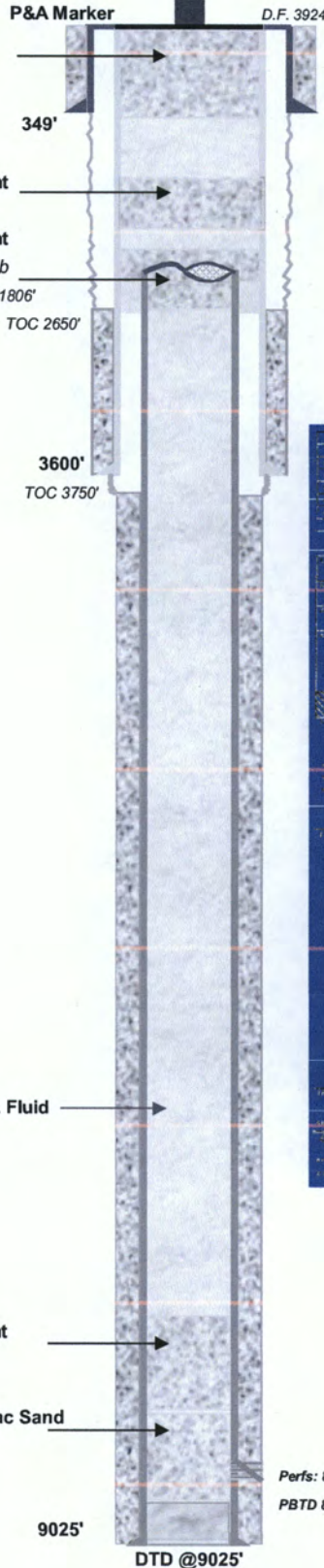
P&A Date: 8/10/1971

Well Plugged by:
Phillips Petroleum Co.

<PLUGGING ITEMS LISTED LEFT>

<PRE-P&A EXISTING ITEMS LISTED RIGHT>

PLUGS: Spot 50 sx
350'-0'



Surface Casing

13.375", 48.0# Csg. (17.5" Hole) @ 349'
400 sx - Circulated to Surface

Intermediate Casing

8.625", 24.0; 28.0# Csg. (11.0" Hole) @ 3600'
400 sx - TOC @ 2650' by Temp

<P&A SUBSEQUENT SUNDRY>

DATE OF P&A SURVEY	8/10/71	BY	W. C. STONE
WELL NAME	SANTA FE NO. 116		
API NO.	30-025-21638		
SECTION	SEC. 3-T18S-R35E		
COMPLETION DATE	11/21/65		
PLUGGING DATE	8/10/71		
PLUGGING TYPE	TEMPORARY		
PLUGGING MATERIAL	CEMENT		
PLUGGING METHOD	SHOT & PULLED		
PLUGGING RESULTS	TOC 2650'		
PLUGGING COMMENTS	Hole loaded w/ ML fluid. Dump pea gravel & frac sand fill to 8865'.		
PLUGGING SIGNATURE	W. C. Stone		
PLUGGING TITLE	WELL ENGINEER		

Production Casing

5.5", 17.0# Csg. (7.875" Hole) @ 9025'
600 sx - TOC 3750' by Temp.

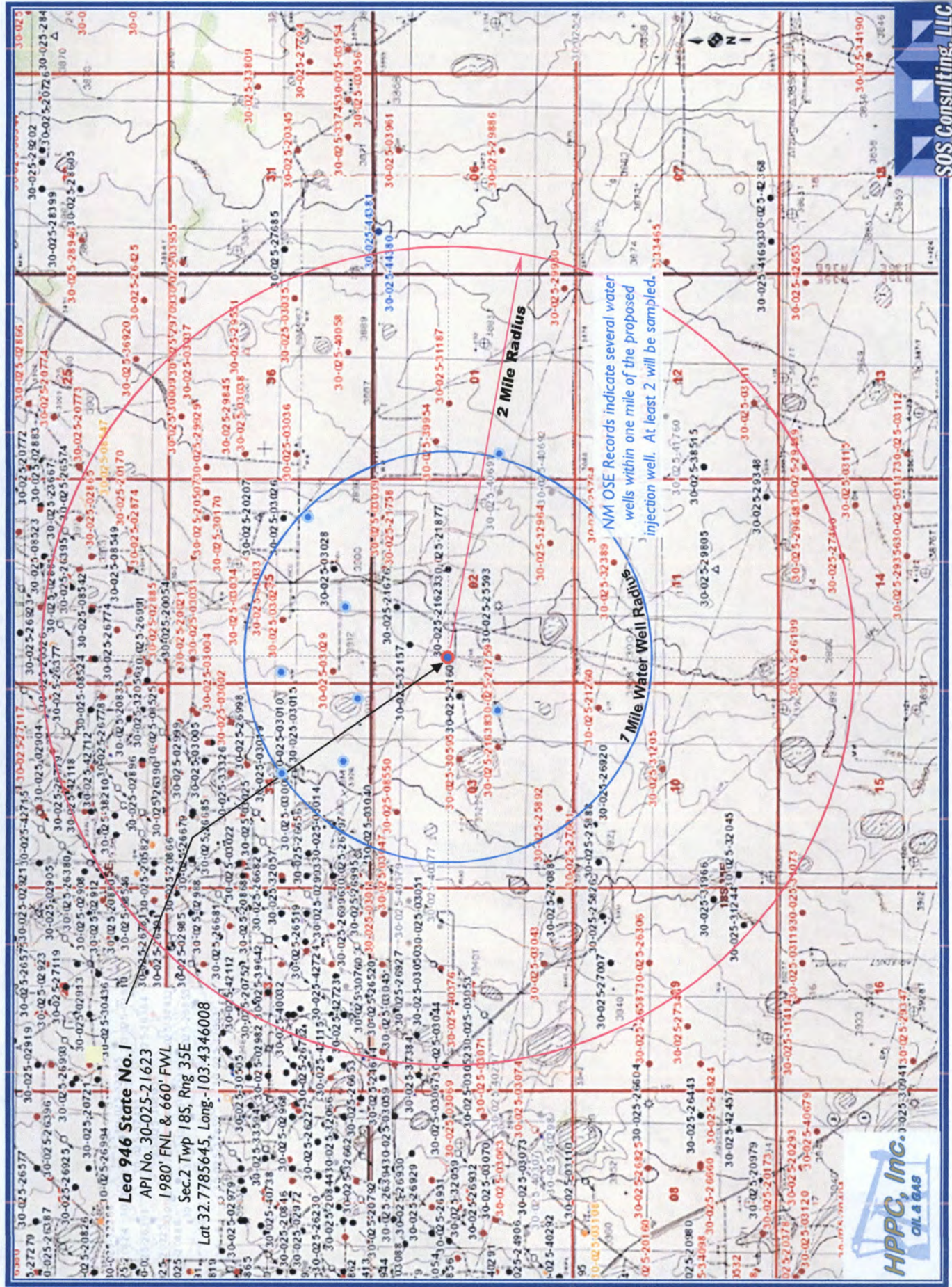
Drawn by: Ben Stone, 8/16/2018

SOS Consulting, LLC

(Attachment to NMOCD Form C-108 - Item V)

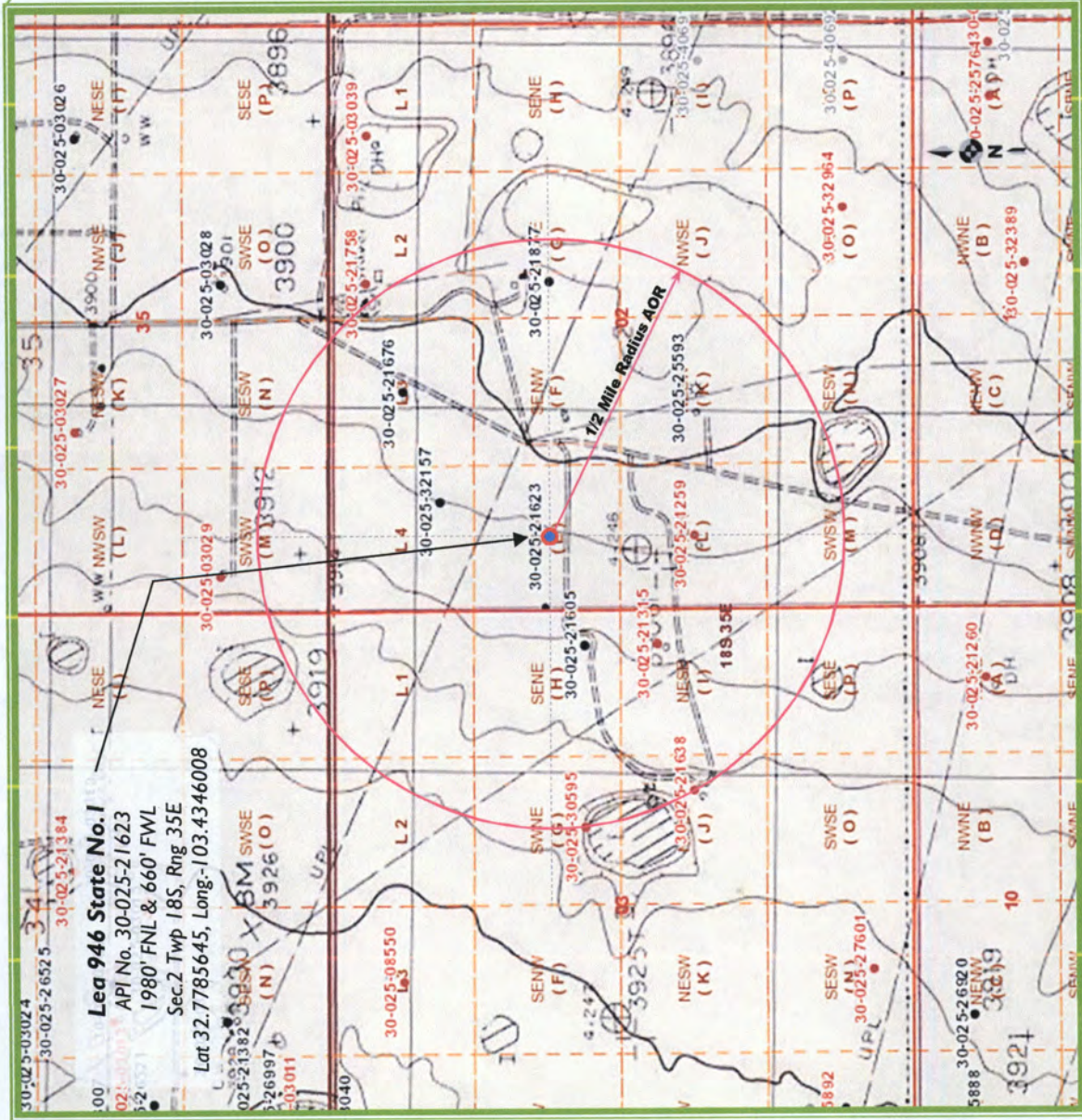


(Attachment to NMOCD Form C-108 - Item V)



Lea 946 State No.1 - Area of Review / Overview Map

(Attachment to NMOCD Form C-108 - Item V)



~4.3 miles E/SE of Buckeye, NM



Lea County, New Mexico



18

C-108 ITEM X

LOGS and AVAILABLE TEST DATA

A log strip from the subject well is attached
With annotations.

LOG STRIP FOLLOWS

Additional Exhibits will be presented at hearing.

2-1185-R35E 1980FN 660FW
JETTA OPERATING COMPANY, INC.
LEA 946 STATE # 1
30-025-21623

SONIC LOG - GAMMA RAY

COMPANY: SINCLAIR OIL & GAS COMPANY

VEIL: LEA 946 STATE # 1

FIELD: WILDCAT

COUNTY: LEA

LOCATION: 1980' FNL 660' FWL

Sec. 2 Twp. 18S Rge. 35E

Other Services: LES, ML

Permanent Datum: GL Elev. 3902

g Measured From: GL Ft. Above Perm. Datum

Drilling Measured From: GL

Elev. K.B. D.F. 3902

Run No.	Tool Type	Pad Type	Tool Pos.	Other
12-19-65	ONE			
8995	Driller			
8999	Logger			
8990	Interval			
0	Log			
85789	Driller			
3592	Logger			
7.7/8"				
GEL, CMC, CAUSTIC				
SODA ASH, SPERSENE, OIL				
Dens. Visc.				
PH Fluid Loss				
Source of Sample				
R _m @ Meas. Temp.				
R _{ml} @ Meas. Temp.				
R _{mc} @ Meas. Temp.				
Source: R _{ml} R _{mc}				
R _m @ BHT				
R _{ml} @ BHT				
R _{mc} @ BHT				

REMARKS

Changes in Mud Type or Additional Samples

Date Sample No.

Depth—Driller

Type Fluid in Hole

Dens. Visc.

ph Fluid Loss

Source of Sample

R_m @ Meas. Temp.

R_{ml} @ Meas. Temp.

R_{mc} @ Meas. Temp.

Source: R_{ml} R_{mc}

R_m @ BHT

R_{ml} @ BHT

R_{mc} @ BHT

C.D. USED S.O. CME-H & CALIPER

Equip. Used: CART. No. X4

PANEL No. X4

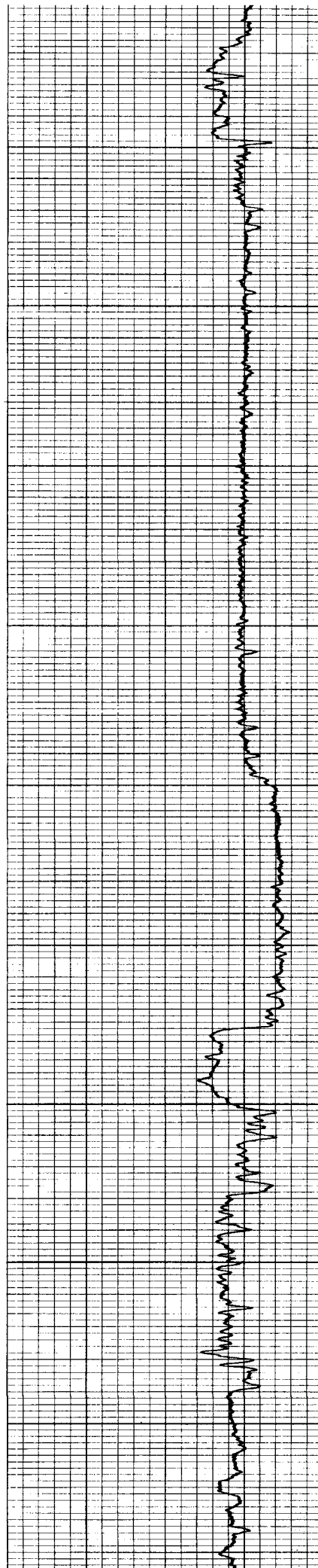
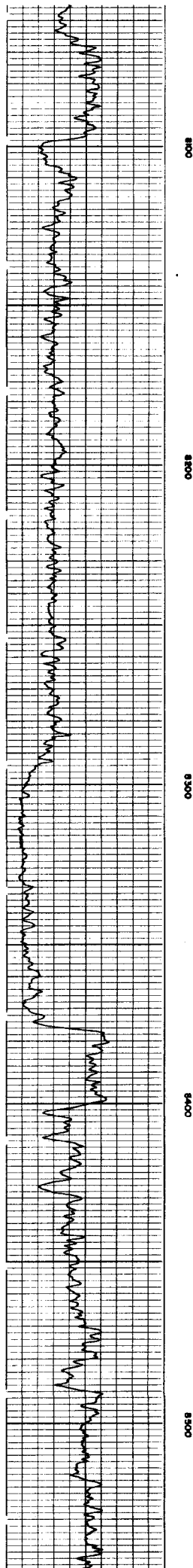
SONDE No. X1

CALIBRATION:	BACKGND.	SOURCE	GALV. INCR.	SENS. TAP	SENS. TAP	TIME	RECORDING
	CPS.	CPS.	DIVISIONS	(FOR CAL.)	(RECORD)	CONST.	SPEED (FT./MIN.)
GAMMA RAY:	50	430	82.5	800	400	1	40/80

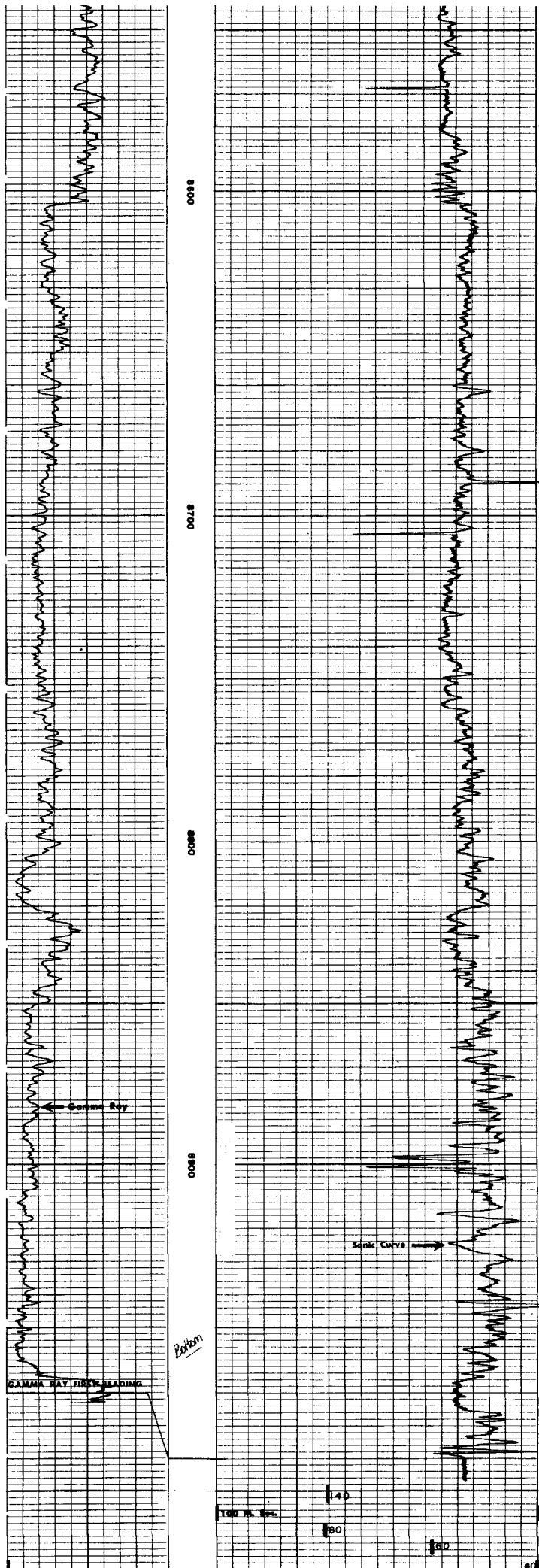
* W.L. MEASURED 7.2 ML

Velocity (feet per second) = $\frac{1,000,000}{\text{Interval Transit Time (microseconds per foot)}}$

GAMMA RAY API UNITS		DEPTHS	INTERVAL TRANSIT TIME MICROSECONDS PER FOOT	
0	100	100	70	40
100	200		130	100
		0000		
		0100		



2



Injection
Interval
8887'-8928'

22

C-108 ITEM VII

Proposed Operation

Lea 946 State No.1

Pressure Maintenance Project (Initial)

PROPOSED OPERATION

The injection system will be closed. A new pump will be installed capable of achieving 200 percent of the maximum requirement for the proposed rate and pressure.

Proposed Average Daily Rate: 250 BWPD and Maximum Daily Rate: 500 BWPD

Proposed Average Surface Injection Pressure: 1250 psi and Maximum: 1777 psi.

The injection well and producing wells will be monitored for performance analysis. If performance data warrants, the well may be step-rate tested to determine the fracture gradient and a pressure increase may be applied for based on these data. Until then, maximum injection pressure will be based on the standard 0.2 psi/ft gradient.

The source of injection water will be reinjected produced water the Lea 926 State Well Nos.2 and 5. Potential make-up water from the Glorieta, Paddock or other compatible formations may be obtained from other wells in the area. This will be supplied from various Vacuum injection systems with operator agreement. Water analyses of the subject produced waters indicate it is compatible and is included in that section of the C-108 information. If other make-up waters are needed, an analysis of whatever source water will be provided.

STIMULATION PLAN

The injection well is a cased hole completion and selectively perforated. The proposed stimulation program will initially be a medium-sized acid job using 15% HCL. As the project matures additional stimulation with larger acid treatments may be utilized.

3

C-108 ITEM VII – PRODUCED WATER ANALYSES

Item VII.4 – Water Analysis of Source Zone Water

Abo

Item VII.5 – Water Analysis of Potential Make-Up Water

Glorieta

Water Analyses follow this page.

24

C-108 Item VII.5 - Produced Water Data
HPPC, Inc. - Lea 946 State Pressure Maintenance Project

SUBJECT ZONE

ABO

API No	3002503050	Lab ID	
Well Name	VACUUM ABO UNIT 012	Sample ID	5070
		Sample No	
Location	ULSTR 04 18 S 35 E	Lat / Long	32.77898 -103.46024
	1650 N 1980 E	County	Lea
Operator (when sampled)			
	Field VACUUM	Unit	G
Sample Date		Analysis Date	
	Sample Source UNKNOWN	Depth (if known)	
	Water Typ		
ph		alkalinity_as_caco3_mgL	
ph_temp_F		hardness_as_caco3_mgL	
specificgravity		hardness_mgL	
specificgravity_temp_F		resistivity_ohm_cm	
tds_mgL	61592	resistivity_ohm_cm_temp	
tds_mgL_180C		conductivity	
chloride_mgL	30420	conductivity_temp_F	
sodium_mgL		carbonate_mgL	
calcium_mgL		bicarbonate_mgL	1407
iron_mgL		sulfate_mgL	6877
barium_mgL		hydroxide_mgL	
magnesium_mgL		h2s_mgL	
potassium_mgL		co2_mgL	
strontium_mgL		o2_mgL	
manganese_mgL		anionremarks	

Remarks

WS

(Produced water data courtesy of NMT Octane NM WAIDS database.)



C-108 Item VII.5 - Produced Water Data
HPPC, Inc. - Lea 946 State Pressure Maintenance Project
SUBJECT ZONE

ABO

		Lab ID	
API No	3002503040	Sample ID	5495
Well Name	VACUUM ABO UNIT 009	Sample No	
Location	ULSTR 03 18 S 35 E	Lat / Long	32.78259 -103.45168
	330 N 660 W	County	Lea
Operator (when sampled)			
	Field VACUUM	Unit	4
Sample Date		Analysis Date	
	Sample Source WELLHEAD	Depth (if known)	
	Water Typ		
ph		alkalinity_as_caco3_mgL	
ph_temp_F		hardness_as_caco3_mgL	
specificgravity		hardness_mgL	
specificgravity_temp_F		resistivity_ohm_cm	
tds_mgL	56805	resistivity_ohm_cm_temp	
tds_mgL_180C		conductivity	
chloride_mgL	31800	conductivity_temp_F	
sodium_mgL		carbonate_mgL	
calcium_mgL		bicarbonate_mgL	1720
iron_mgL		sulfate_mgL	2100
barium_mgL		hydroxide_mgL	
magnesium_mgL		h2s_mgL	
potassium_mgL		co2_mgL	
strontium_mgL		o2_mgL	
manganese_mgL		anionremarks	
Remarks			

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(Produced water data courtesy of NMT Octane NM WAIDS database.)



C-108 Item VII.5 - Produced Water Data
HPPC, Inc. - Lea 946 State Pressure Maintenance Project
POTENTIAL MAKE-UP WATER ZONE

GLO

API No	3002520944	Lab ID	
		Sample ID	2483
Well Name	NEW MEXICO N STATE 008	Sample No	
Location	ULSTR 30 17 S 35 E 550 N 500 W	Lat / Long	32.81128 -103.50348
		County	Lea
Operator (when sampled)			
	Field VACUUM	Unit	1
Sample Date		Analysis Date	
	Sample Source WELLHEAD	Depth (if known)	
	Water Typ		
ph		alkalinity_as_caco3_mgL	
ph_temp_F		hardness_as_caco3_mgL	
specificgravity		hardness_mgL	
specificgravity_temp_F		resistivity_ohm_cm	
tds_mgL	42982	resistivity_ohm_cm_temp	
tds_mgL_180C		conductivity	
chloride_mgL	23690	conductivity_temp_F	
sodium_mgL		carbonate_mgL	
calcium_mgL		bicarbonate_mgL	754
iron_mgL		sulfate_mgL	2812
barium_mgL		hydroxide_mgL	
magnesium_mgL		h2s_mgL	
potassium_mgL		co2_mgL	
strontium_mgL		o2_mgL	
manganese_mgL		anionremarks	

Remarks

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(Produced water data courtesy of NMT Octane NM WAIDS database.)



C-108 Item VII.5 - Produced Water Data
HPPC, Inc. - Lea 946 State Pressure Maintenance Project
POTENTIAL MAKE-UP WATER ZONE

GLO

API No 3002520944		Lab ID
		Sample ID 2365
Well Name NEW MEXICO N STATE 008		Sample No
Location ULSTR 30 17 S 35 E	Lat / Long 32.81128	-103.50348
550 N 500 W	County	Lea
Operator (when sampled)		
Field VACUUM	Unit	1
Sample Date	Analysis Date	
Sample Source WELLHEAD	Depth (if known)	
Water Typ		
ph	alkalinity_as_caco3_mgL	
ph_temp_F	hardness_as_caco3_mgL	
specificgravity	hardness_mgL	
specificgravity_temp_F	resistivity_ohm_cm	
tds_mgL 53760	resistivity_ohm_cm_temp	
tds_mgL_180C	conductivity	
chloride_mgL 29000	conductivity_temp_F	
sodium_mgL	carbonate_mgL	
calcium_mgL	bicarbonate_mgL	3730
iron_mgL	sulfate_mgL	2560
barium_mgL	hydroxide_mgL	
magnesium_mgL	h2s_mgL	
potassium_mgL	co2_mgL	
strontium_mgL	o2_mgL	
manganese_mgL	anionremarks	

Remarks

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(Produced water data courtesy of NMT Octane NM WAIDS database.)



C-108 – Item VIII

Geologic Information

The Abo formation is a microcrystalline dolomite deposited in a back-reef environment. The structure is a southeasterly dipping stratigraphic trap with permeability pinchouts in all directions. The Abo is in the Paleozoic era, Permian System, Leonard Age. The top of the Abo is found at approximately 8300' and is approximately 1000 feet thick.

The Abo is overlain by the Drinkard, Tubb, Paddock and Glorieta; collectively the group is 1500 feet thick. It is underlain by the Wolfcamp. The top of the Wolfcamp is approximately 9300' and is approximately 800 feet thick.

No known faults cut through these formations that may act as conduits for gas, oil, or injection fluids to seep into freshwater aquifers above the injection zone within the proposed injection project. The area has historically been the subject of numerous water injection projects in and above the Abo in the Paddock-Glorieta formations (Vacuum Glorieta West Unit) and the Grayburg-San Andres (Central Vacuum Unit).

Oil production in the area may be found in the following formations:

- Grayburg-San Andres 4300'
- Glorieta-Paddock 5900'
- Blinbery 6500'
- Drinkard 7450'
- Abo 8300'
- Wolfcamp 9300'
- Penn Reef 10100'

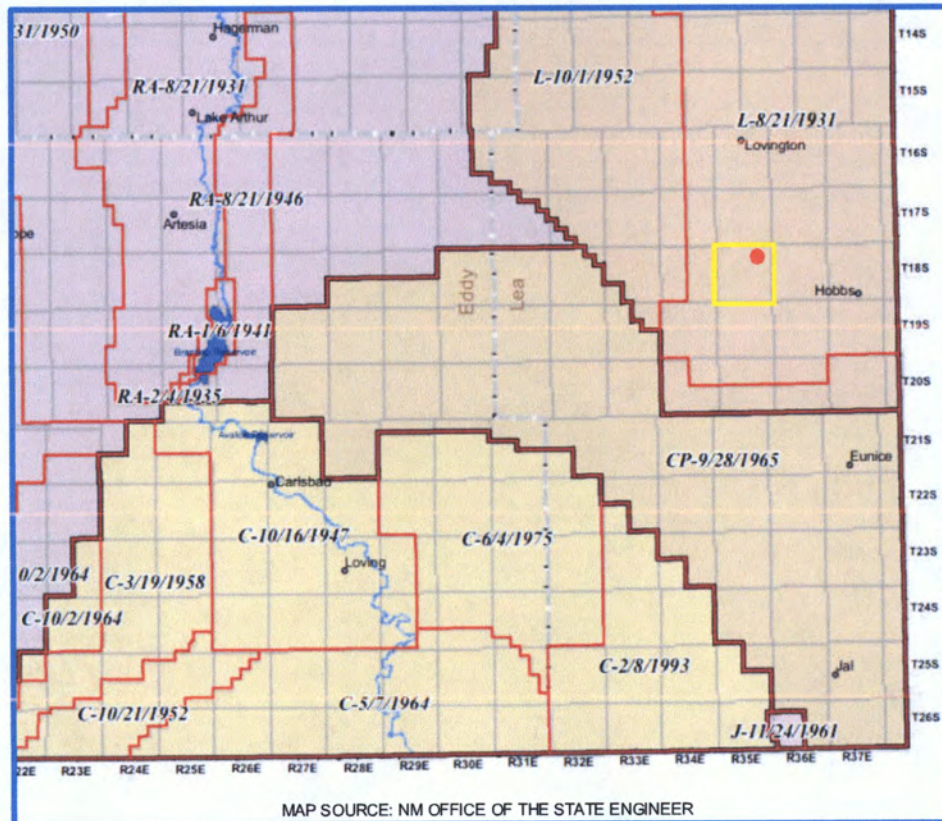
Fresh water in the area is generally available from the Lea County Basin of Ogallala and High Plains aquifers. State Engineer's records show water wells in the area with a average depth to groundwater 57 feet. No freshwater contamination of the Ogallala through faults cutting these shallower formations mentioned above has been observed.

There are numerous water wells and/or PODs located within one mile of the proposed injection well; 2 or 3 will be sampled and analyses will be exhibited and presented at hearing.

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C-108 - Item XI

Groundwater Basins - Water Column / Depth to Groundwater



The subject well is located within the Lea County Basin. Fresh water in the area is generally available from the Ogallala; High Plains Aquifer. State Engineer's records show water wells in 18S-35E with an average depth to water at 57 feet.

There are several water wells located within one mile of the proposed SWD. Samples are being taken on at least 2 and analyses will be forwarded as soon as available.

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Water Wells Within One Mile

There are numerous water wells/ PODs within a one-mile radius of the proposed injection well.

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C-108 ITEM XI – WATER WELLS IN AOR

Depth to Ground Water



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 Sub- Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 02503	R	L	LE	2	4	1	02	18S	35E	647106	3627930*	100		
L 02628		L	LE	2	2	3	11	18S	35E	647141	3625912*	112	40	72
L 04744		L	LE	1	2	2	02	18S	35E	647704	3628341*	122	51	71
L 05235		L	LE		1	2	02	18S	35E	647402	3628238*	114	54	60
L 07872		L	LE	1	3	3	03	18S	35E	644900	3627101*	162	62	100
L 08309		L	LE	1	2	2	10	18S	35E	646122	3626711*	112	49	63
L 09726		L	LE	4	4	4	11	18S	35E	647953	3625318*	135	48	87
L 10294		L	LE		2	4	03	18S	35E	646209	3627419*	90	61	29
L 12932 POD1		L	LE	2	2	1	02	18S	35E	676000	3628886	175	95	80

Average Depth to Water: 57 feet

Minimum Depth: 40 feet

Maximum Depth: 95 feet

Record Count: 9

PLSS Search:

Section(s): 2, 3, 10, 11

Township: 18S

Range: 35E

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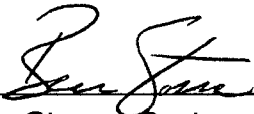
*UTM location was derived from PLSS - see Help

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

C-108 ITEM XII

Geologic Affirmation

We have examined available geologic and engineering data and have found no evidence of open faults or other hydrologic connection between the disposal interval and any underground sources of drinking water.



Ben Stone, Partner
SOS Consulting, LLC

Project: HPPC, Inc.
Lea 946 State No.1
Reviewed 8/20/2018

C-108 ITEM XIII – PROOF OF NOTIFICATION

IDENTIFICATION AND NOTIFICATION OF INTERESTED PARTIES

Exhibits for Section

Affected Parties Map

List of Interested Parties

Notification Letter to Interested Parties

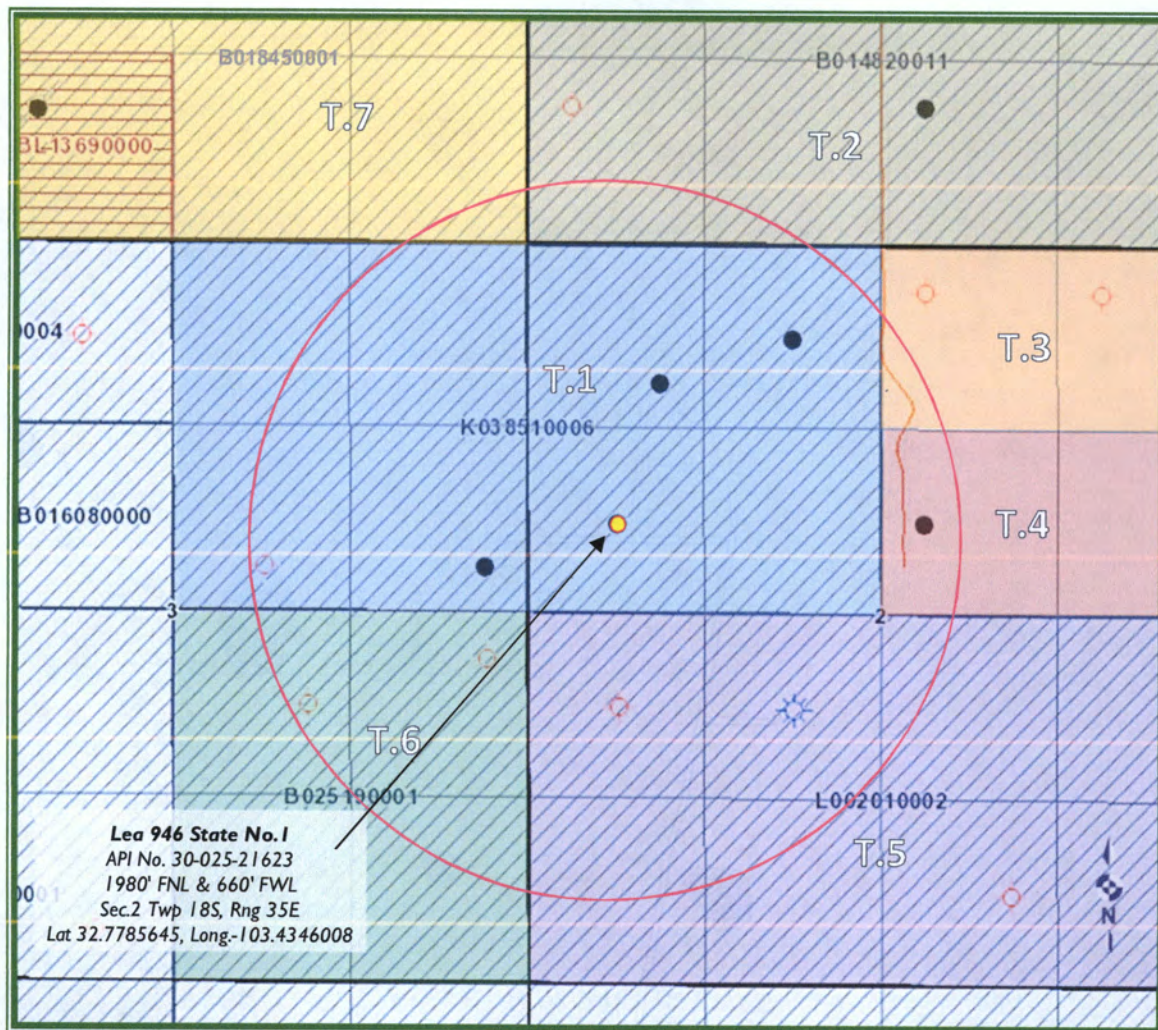
Proof of Certified Mailing

Published Legal Notice Affidavit

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Lea 946 State No.1 – Affected Parties Plat

(Attachment to NMOCD Form C-108, Application for Authority to Inject.)



LEGEND

- T.1 – K0-3851-0006 – HPPC, Inc. (Applicant)
- T.2 – B0-1482-0011– Oxy USA WTP LTD Partnership
- T.3 – Private – Lee Cattle Co. LTD; Antelope Creek R&E Svcs, LLC
- T.4 – Private – R.D. Lee, Jr.; Oxy, USA
- T.5 – L0-0201-0002 – MRC Delaware Resources, LLC
- T.6 – B0-2519-0001 – ConocoPhillips Company
- T.7 – B0-1845-0001 – Chevron USA, Inc.

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C-108 ITEM XIII – PROOF OF NOTIFICATION

AFFECTED PARTIES LIST

SOS Consulting is providing electronic delivery of C-108 applications.
ALL APPLICABLE AFFECTED PARTIES ARE PROVIDED A LINK IN THE NOTICE LETTER
TO A SECURE CITRIX SHAREFILE SITE TO VIEW AND DOWNLOAD
A FULL COPY OF THE SUBJECT C-108 APPLICATION IN PDF FORMAT.

SURFACE & MINERALS OWNER

- 1 STATE OF NEW MEXICO
Oil, Gas and Minerals Division
310 Old Santa Fe Trail
Santa Fe, NM 87504
Certified: 7017 2400 0000 5297 5874

OFFSET MINERALS LESSEES and OPERATORS (All Notified via USPS Certified Mail)

State Lease K0-3851-0006 (T.1 on plat.)

Lessee

HPPC, INC. (Applicant)
306 W. Wall Street
Midland, TX 79701

State Lease B0-1482-0011 (T.2 on plat.)

Operator

- 2 LEGACY RESERVES OPERATING, LP
P.O. Box 10848
Midland, TX 79702
Certified: 7017 2400 0000 5297 5881

Private Lease (T.3 on plat.)

Lessee

- 3 ANTELOPE CREEK REALTY & EXPLORATION SERVICES, LLC
12354 East Caley Ave., Ste.201
Centennial, CO 80111
Certified: 7017 2400 0000 5297 5898

Private Lease (T.4 on plat.)

Operator

- 4 OXY USA, INC.
6001 Deauville
Midland, TX 79706
Certified: 7017 2400 0000 5297 5904

State Lease L0-0201-0002 (T.5 on plat.)

Operator

- 5 MATADOR PRODUCTION COMPANY
5400 LBJ Freeway, Suite 1500
Dallas, Texas 75240
Certified: 7017 2400 0000 5297 5911

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C-108 ITEM XIII – PROOF OF NOTIFICATION

AFFECTED PARTIES LIST (cont.)

State Lease B0-2519-0001 (T.6 on plat.)

Lessee

6 CONOCOPHILLIPS COMPANY
P.O. Box 7500
Bartlesville, OK 74005-7500
Certified: 7017 2400 0000 5297 5928

State Lease B0-1845-0001 (T.7 on plat.)

Lessee

7 CHEVRON USA, INC.
Attn: Linda McMurray, Permitting Team
6301 Deauville Blvd.
Midland, TX 79706
Certified: 7017 2400 0000 5297 5935

OFFSET MINERALS OWNER

STATE OF NEW MEXICO
Oil, Gas and Minerals Division
310 Old Santa Fe Trail
Santa Fe, NM 87504

REGULATORY

NEW MEXICO OIL CONSERVATION DIVISION (FedEx'ed original and copy)
1220 S. St. Francis Dr.
Santa Fe, NM 87505

NEW MEXICO OIL CONSERVATION DIVISION (FedEx'ed copy)
811 S. First St.
Artesia, NM 88210

STATE OF NEW MEXICO (FedEx'ed copy)
Oil, Gas and Minerals Division
310 Old Santa Fe Trail
Santa Fe, NM 87504

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