STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION

APPLICATION OF FOUNDATION ENERGY MANAGEMENT, LLC FOR APPROVAL OF A SALW WATER DISPOSAL WELL, LEA COUNTY, NEW MEXICO.

Approved by OCD for April 2, 2020, hearing.

CASE NO._____

APPLICATION

Foundation Energy Management, LLC ("Foundation") (OGRID 370740), through its undersigned attorneys, hereby files this application with the Oil Conservation Division pursuant to the provisions of NMSA 1978 § 70-2-12(B)(15), for an order authorizing injection of produced saltwater for purposes of disposal. In support of this application, Foundation states:

1. Attached is a complete Form C-108 application for authorization to inject which contains all the information necessary to authorize the requested approval to inject and filed with the Division for administrative approval on August 7, 2019. *See* C-108, attached as **Exhibit A**, and incorporated herein.

2. Foundation proposes to convert the Blue Quail Federal #1 Well (API No. 30-025-33222) to a saltwater disposal well. The Well is located 660 from the south line and 1,980 feet from the east line (Unit O), Section 7, Township 23 South, Range 32 East, NMPM, Lea County, New Mexico.

3. The proposed injection disposal interval will be within the Bell Canyon Formation between 4,640 feet subsurface and 4,850 feet subsurface through perforated completion.

4. Disposal fluid will be produced saltwater from oil and gas wells in the area operated by Foundation Energy Management, LLC, only, producing from the Sand Dunes, Delaware, East, Bone Spring, Diamondtail and Southwest Formations.

5. The estimated average surface injection pressure is expected to be approximately 600 psi. The maximum surface injection pressure is expected to be approximately 928 psi.

6. The granting of this application will avoid the drilling of unnecessary wells, will prevent waste and will protect correlative rights.

7. The administrative application has been protested. Accordingly, Foundation hereby requests its application be set for hearing pursuant to 19.15.26.8(E) NMAC.

WHEREFORE, Foundation Energy Management, LLC requests this application be set for hearing before an Examiner of the Oil Conservation Division on March 12, 2020, and after notice and hearing as required by law, the Division enter an order approving this application.

Respectfully Submitted,

MANI LITTLE &WORTMANN, PLLC

By: _____

Philip C. Mani
300 Throckmorton Street, Suite 530
Fort Worth, Texas, 76102
(817) 382-0900
pmani@mlwenergylaw.com

ATTORNEYS FOR FOUNDATION ENERGY MANAGEMENT, LLC

CASE_____: Application of Foundation Energy Management, LLC for Approval of a Salt Water Disposal Well, Lea County, New Mexico. Applicant in the above-styled cause seeks an order authorizing it to recomplete and operate an injection well for the purpose of disposing produced salt water into the **Blue Quail Federal No. 1 Well** (API No. 30-025-33222), which is located 660 feet from the south line and 1,980 feet from the east line (Unit O), Section 7, Township 23 South, Range 32 East NMPM, Lea County, New Mexico. Injection will be into the Bell Canyon Formation between 4,640 feet and 4,850 feet subsurface through an open-hole completion. Disposal fluid will be produced water from Applicant's Wells only. The maximum injection pressure will be 928 psi. The subject well is located approximately 30 miles southwest of Eunice, N.M.

Foundation Energy Management, LLC
15 E 5th St, Suite 1200
Tulsa, OK 74103

July 26, 2019

Mr. Phillip Goetz
Mr. Michael McMillan
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: Submittal of Non-Commercial C-108 Application for Administrative Approval

Gentlemen:

Foundation Energy Management LLC (Ogrid # 370740) hereby submits a C-108 application to dispose produced water into Blue Quail Federal #1, API 30-025-33222.
This well will be converted from oil production to produced water disposal in the Bell Canyon of the Delaware Mountain Group. This well is a NON-COMMERCIAL SWD well and will serve only wells operated by Foundation Energy Management, LLC. A public notice was published in The Lovington Leader May 30, 2019.

The application is attached for your review and approval. If you have questions, feel free to contact me at 918.526.5592 or by email at jsmith@fondationenergy.com

Sincerely yours,

James A. Smith
HSE-Regulatory Supervisor

Xc: Hobbs District Office

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance ____X____ Disposal _____ Storage
Application qualifies for administrative approval? ____X_____ Yes _____ No

II. OPERATOR: Foundation Energy Management, LLC

ADDRESS: 5057 Keller Springs Rd., Suite 650, Addison, TX 75001

CONTACT PARTY: James Smith, HSE/Regulatory Supervisor PHONE: 918.526.5592

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 ____X____ 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.

See Attachment

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.

See Attachment

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;

Proposed average daily rate: 750 BWPD
Proposed maximum daily rate: 1500 BWPD

2. Whether the system is open or closed;

Closed

3. Proposed average and maximum injection pressure;

Proposed average injection pressure: 600 psi
Proposed maximum pressure: 928 psi

4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,

This is a non-commercial saltwater disposal well, and will be used by Foundation Energy Management, LLC only. The wells producing to this facility include:

Source of Produced Water		
Name	API	Well Completion
Blue Quail Federal 02	30-025-35047	53817] SAND DUNES; DELAWARE, EAST
Blue Quail Federal 03	30-025-39818	[53800] SAND DUNES; BONE SPRING
Sharbro Federal 01	30-025-33054	[53800] SAND DUNES; BONE SPRING
Sharbro Federal 02	30-025-34867	[96916] DIAMONDTAIL; DELAWARE, SOUTHWEST
Sharbro Federal 03	30-025-34868	[96916] DIAMONDTAIL; DELAWARE, SOUTHWEST
Sharbro Federal 04	30-025-34961	[96916] DIAMONDTAIL; DELAWARE, SOUTHWEST
Sharbro Federal 05	30-025-34962	[96916] DIAMONDTAIL; DELAWARE, SOUTHWEST
Sharbro Federal 06	30-025-35048	[53817] SAND DUNES; DELAWARE, EAST
Sharbro Federal 08	30-025-35154	[53817] SAND DUNES; DELAWARE, EAST
Sharbro Federal 10	30-025-40218	[53800] SAND DUNES; BONE SPRING

Water analyses are attached

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.).

See Attachment

*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.

The Bell Canyon is a fine-to-very-fine-grained sandstone of Permian age, with intergranular porosity and permeability of 10-100 mD. The formation is 210' thick and its depth is 4,640'-4,850'

There are no underground sources of drinking water below the Bell Canyon. The base of underground sources of drinking water above the Bell Canyon is the Rustler at a depth of 846'. A Bell Canyon structure map and thickness map are attached to this application.

IX. Describe the proposed stimulation program, if any.

5,000-10,000 gals 7.5% HCL with ball sealers for diversion

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

Logs have been filed with the Division.

*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.

There are NO freshwater wells within one mile of the proposed disposal well. Examination of the Office of the State Engineer (OSE) website shows a DOE observation well drilled in SW/4 SE/4 SE/4 7-23S-32E, its OSE POD Number is C 03749 POD1. However, confirmation from DOE indicates this information is incorrect and the well is located in 15-23S-31E. The confirmation email from DOE is attached.

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.

I have examined the available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the Bell Canyon (disposal zone) and any underground sources of drinking water.

Tyler Pansa, Geologists

7/26/19
Date

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: James Smith, HSE/Regulatory Supervisor TITLE: HSE/Regulatory Supervisor

SIGNATURE: DATE: July 25, 2019

E-MAIL ADDRESS: JSmith@foundationenergy.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.

See Attachment.

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.

See Attachment.

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

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.

Side 1

INJECTION WELL DATA SHEET

OPERATOR: Foundation Energy Management, LLC

WELL NAME & NUMBER: Blue Quail Federal #1

WELL LOCATION: 660' FSL 1,980' FEL (FOOTAGE LOCATION) | O (UNIT LETTER) | 7 (SECTION) | T23S (TOWNSHIP) | R32E (RANGE)

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 17-1/2"
Cemented with: 600 sx.
Top of Cement: Surface

Casing Size: 13-3/8"
or _____ ft³
Method Determined: _____

Intermediate Casing

Hole Size: 12-1/4"
Cemented with: 1,600 sx.
Top of Cement: Surface

Casing Size: 8-5/8"
or _____ ft³
Method Determined: _____

Production Casing

Hole Size: 7-7/8"
Cemented with: 1,350 sx.
Top of Cement: 1,906'
Total Depth: 8,850'

Casing Size: 5-1/2"
or _____ ft³
Method Determined: _____

Injection Interval

4,640' To 4,850'

(Perforated or Open Hole; indicate which)
Perforated

INJECTION WELL DATA SHEET

Tubing Size: 2-7/8" Lining Material: Salta Lined Tubing

Type of Packer: 5-1/2" Model R Packer

Packer Setting Depth: +/- 4,600'

Other Type of Tubing/Casing Seal (if applicable): N/A

Additional Data

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

   If no, for what purpose was the well originally drilled? Crude Oil Production

2. Name of the Injection Formation: Bell Canyon

3. Name of Field or Pool (if applicable): N/A

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.

   Well is perforated in Sand Dunes; Delaware East Pool 6,618-8,467' SEL

   The perforation detail is shown on the attached wellbore schematic.

   CIBP will be set at 4,900' with 5 sx. cement on top of CIBP.

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

   Overlying: None

   Underlying: Brush Canyon (Delaware) 6818'-8475'

List of Attachments
Blue Quail Federal #1
API 30-025-33222
C-108 Application

Map with ½ mile AOR

Map with all leases within 2 miles

Tabulation of Data on All Wells of Public Record within AOR

Tabulation of Data on All Leases within 2 miles

Water Analyses of Produced Water

Water Analysis of Bell Canyon (Disposal Zone) from Tomcat 15 Federal #2 (30-025-33909)

Bell Canyon Structure Map

Bell Canyon Isopach

Letter from DOE confirming water well location

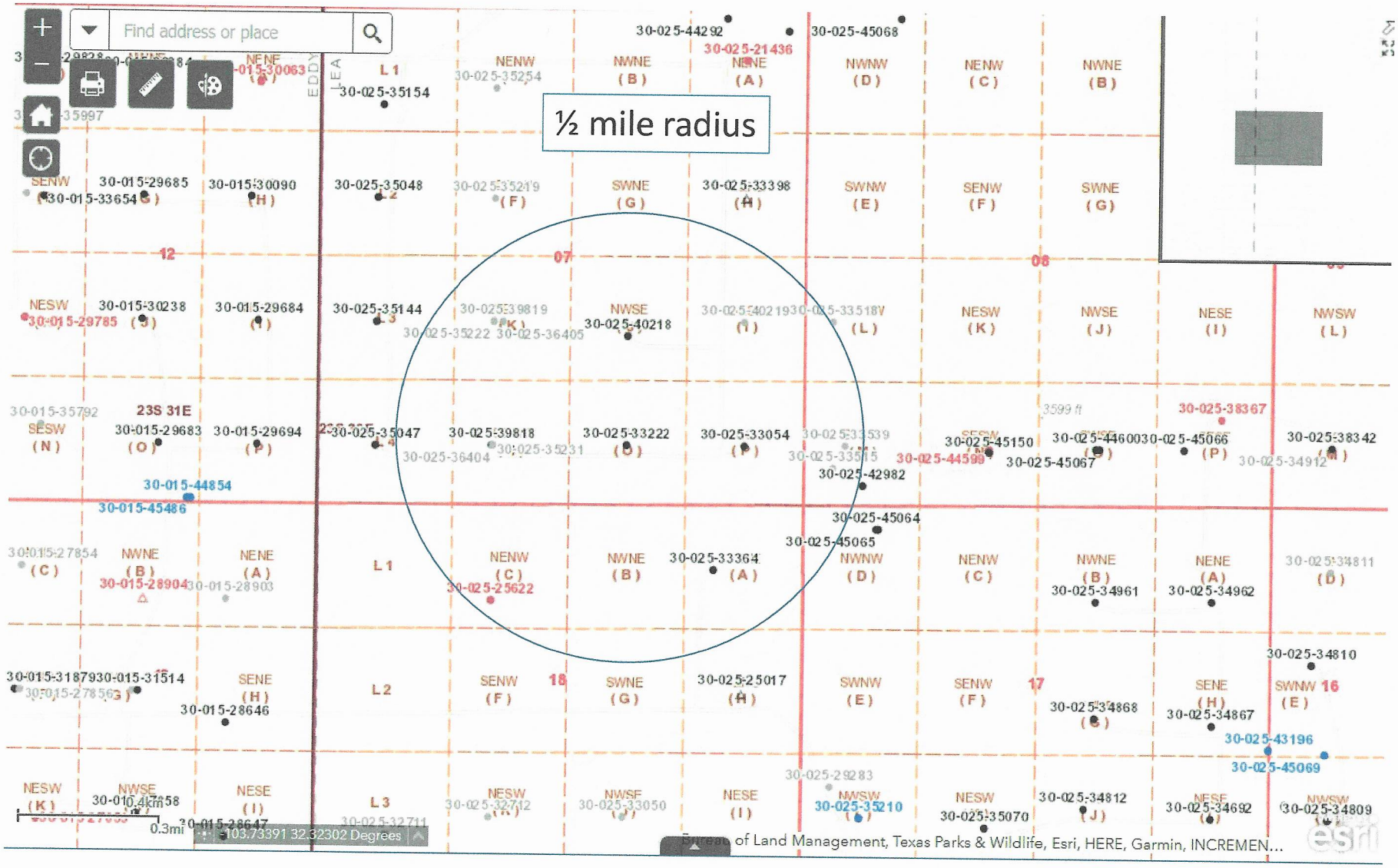
Proof of Notice to affected parties within AOR

Affidavit to Publication

Wellbore Schematic before Conversion to SWD

Wellbore Schematic after Conversion to SWD

Wellbore Schematic for P&A Wellbore (SDE 18 FEDERAL #001)


½ mile radius
Find address or place
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30-025-44292
30-025-45068
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30-025-35154
30-025-35254
30-025-35048
30-025-35144
30-025-40218
30-025-33222
30-025-33054
30-025-42982
30-025-45064
30-025-45065
30-025-33364
30-025-25622
30-025-25017
30-025-34961
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30-015-30090
30-015-30238
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30-015-27854
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30-015-44854
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30-015-29683
30-015-29694
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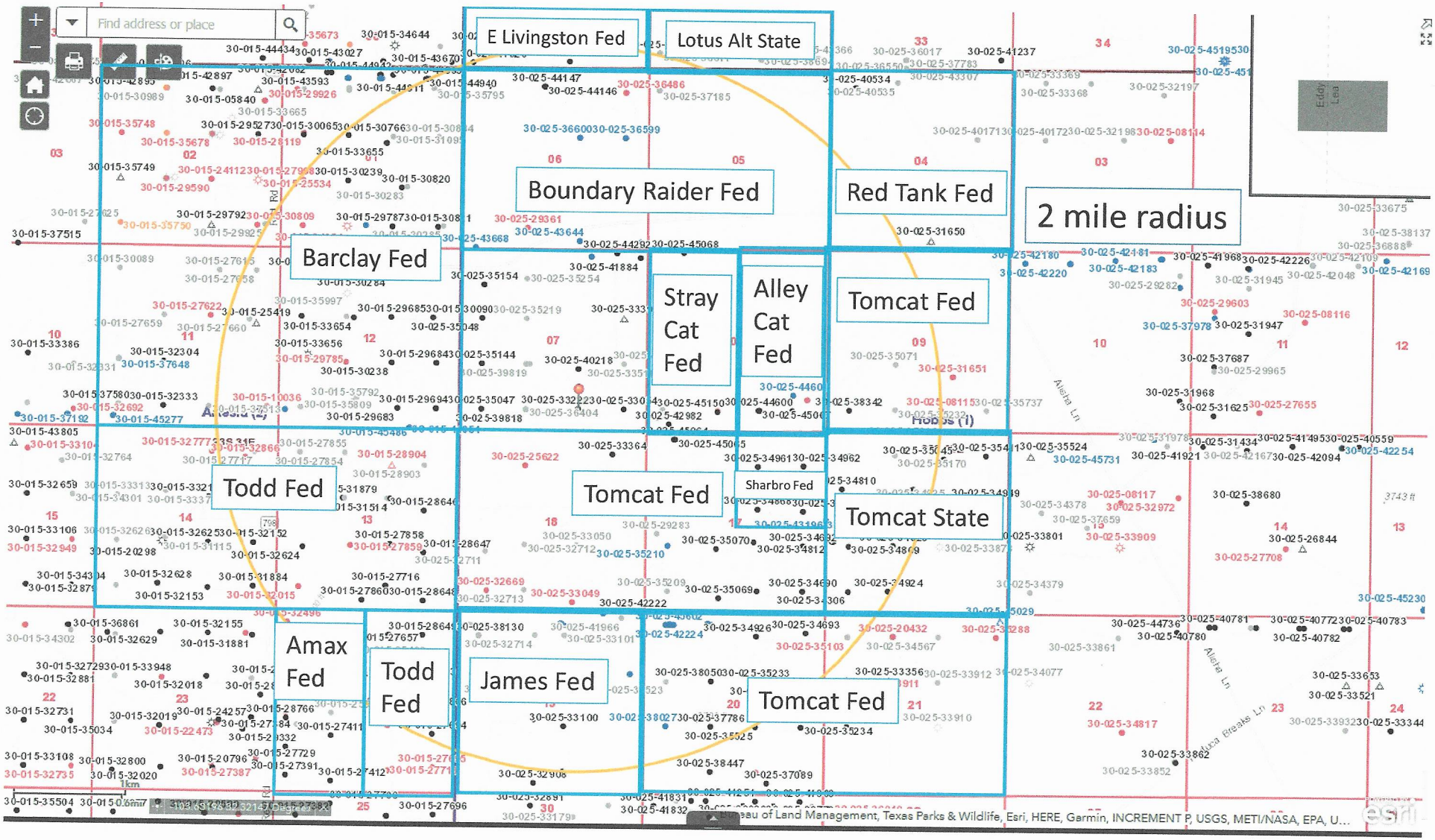
esri


E Livingston Fed
Lotus Alt State
Boundary Raider Fed
Red Tank Fed
2 mile radius
Barclay Fed
Stray Cat Fed
Alley Cat Fed
Tomcat Fed
Todd Fed
Tomcat Fed
Sharbro Fed
Tomcat State
Amax Fed
Todd Fed
James Fed
Tomcat Fed
Find address or place
Bureau of Land Management, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, U...
esri

Tabulation of Data on All Wells of Public Record within AOR

Well	Distance from SWD	API	Type	Mineral Owne	Status	Footages	Location	Spud Date	MD	TVD	Elevation	Current Operator
SHARBRO FEDERAL #010	1,170'	30-025-40218	Oil-Vertical	Federal	Active	1830 FSL, 1980 FEL	7J-23S-32E	8/28/2011	8900	8900	3554	[370740] FOUNDATION ENERGY MANAGEMENT, I
BLUE QUAIL FEDERAL #002	2,640'	30-025-35047	Oil-Vertical	Federal	Active	660 FSL, 660 FWL	7M-23S-32E	6/9/2000	9400	9400	3526	[370740] FOUNDATION ENERGY MANAGEMENT, I
BLUE QUAIL FEDERAL #003	1,320'	30-025-39818	Oil-Vertical	Federal	Active	660 FSL, 1980 FWL	7N-23S-32E	10/17/2010	8800	8800	3548	[370740] FOUNDATION ENERGY MANAGEMENT, I
BLUE QUAIL FEDERAL #001	0'	30-025-33222	Oil-Vertical	Federal	Active	660 FSL, 1980 FEL	7O-23S-32E	12/27/1995	8850	8850	3559	[370740] FOUNDATION ENERGY MANAGEMENT, I
SHARBRO FEDERAL #001	1,320'	30-025-33054	Oil-Vertical	Federal	Active	660 FSL, 660 FEL	7P-23S-32E	8/30/1995	10638	10638	3569	[370740] FOUNDATION ENERGY MANAGEMENT, I
TOMCAT 18 FEDERAL #001	1,650'	30-025-33364	Oil-Vertical	Federal	Active	660 FNL, 990 FEL	18A-23S-32E	5/9/1996	9349	9349	3575	[6137] DEVON ENERGY PRODUCTION COMPANY,
SDE 18 FEDERAL #001	2,113'	30-025-25622	Oil-Vertical	Federal	P&A 2/14/2005	990 FNL, 1980 FWL	18C-23S-32E	11/7/1979	9300	9300	3555	[21712] STRATA PRODUCTION CO
Sharbro Federal 9K		30-025-36405	Cancelled permit									
Sharbro Federal 9K		30-025-35222	Cancelled permit									
Sharbro Federal 9		30-025-39819	Cancelled permit									
Sharbro Federal 11		30-025-40219	Cancelled permit									
Blue Quail Federal 3N		30-025-36404	Cancelled permit									
Blue Quail Federal 3N		30-025-35231	Cancelled permit									
Tomcat 8 Federal 1		30-025-33515	Cancelled permit									
Tomcat 8 Federal 1		30-025-33539	Cancelled permit									

ALL OIL AND GAS LEASES WITHIN 2 MILE RADIUS
OF BLUE QUAIL FEDERAL #1 API 30-025-33222

NMNM 126065
NMNM 062223
NMNM 063994
NMNM 132067
NMNM 086151
NMNM 018848
NMNM 098826
NMNM 098192
NMNM 097891
NMNM 0 559539
NMNM 116573
NMNM 086153
NMNM 022080
NMNM 0 404441
NMNM 0 533177A
NMNM 040655
V0-4340-0004
V0-0302-0004

Imperative Water Analysis Report

IMPERATIVE
CHEMICAL PARTNERS

SYSTEM IDENTIFICATION

Company: Foundation Energy Management LLC - Hobbs
Location: Blue Quail 2
Sample Source: Wellhead
Account Rep: Mike Gomez

Sample ID#: W-10389

Sample Date: 06-20-2019
Report Date: 06-27-2019

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	1746
Magnesium(as Mg)	364.80
Barium(as Ba)	0.194
Strontium(as Sr)	79.21
Sodium(as Na)	35912
Potassium(as K)	1140
Iron(as Fe)	76.31
Manganese(as Mn)	2.51

ANIONS

Chloride(as Cl)	64000
Sulfate(as SO_4)	300.00
Dissolved CO_2(as CO_2)	350.00
Bicarbonate(as HCO_3)	793.00
H_2S (as H_2S)	205.00
Boron(as B)	24.82

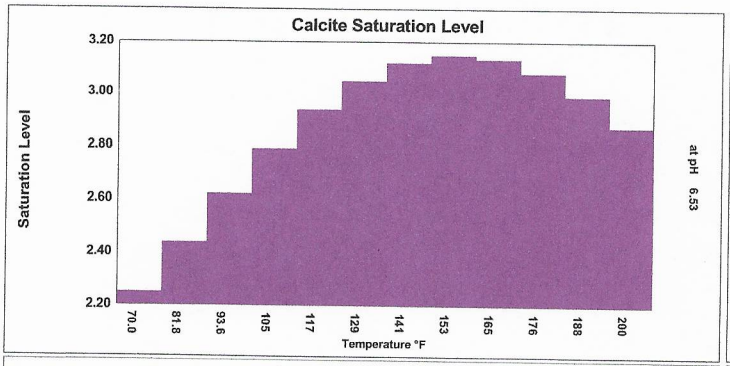
PARAMETERS

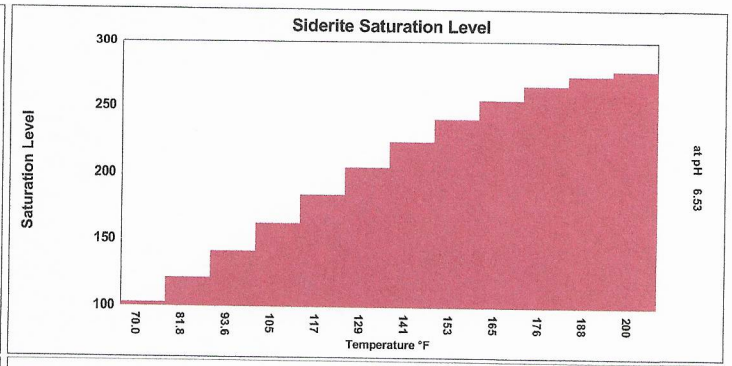
Temperature(°F)	77.00
Sample pH	6.50
Conductivity	144666
T.D.S.	103178
Resistivity	6.91
Sp.Gr.(g/mL)	1.07

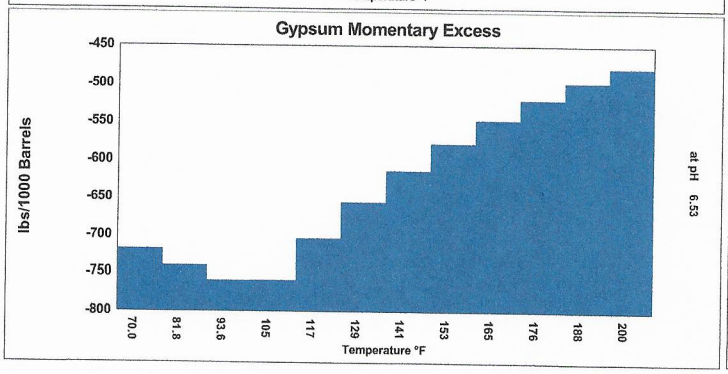
SCALE AND CORROSION POTENTIAL

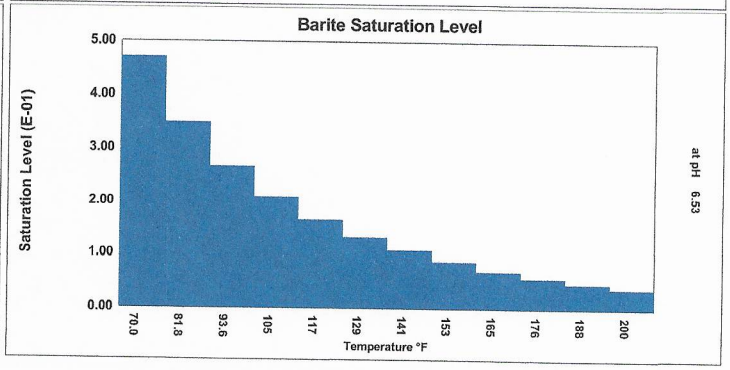
Temp. (°F)	Press. (atm)	Calcite $CaCO_3$		Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackawenite FeS		CO_2 (mpy)	pCO_2 (atm)
70.00	1.00	2.25	0.102	0.0580	-900.89	0.0876	-718.58	0.470	-0.129	0.124	-145.60	102.49	0.210	553.36	7.36	0.113	0.249
81.82	1.36	2.43	0.108	0.0577	-885.38	0.0823	-742.46	0.348	-0.215	0.120	-146.81	120.85	0.210	486.36	7.24	0.174	0.294
93.64	1.73	2.62	0.113	0.0592	-850.04	0.0783	-760.07	0.265	-0.317	0.119	-146.03	140.89	0.209	432.44	7.13	0.258	0.339
105.45	2.09	2.79	0.116	0.0623	-798.55	0.0765	-759.63	0.208	-0.435	0.120	-144.15	162.01	0.208	387.26	7.00	0.348	0.384
117.27	2.45	2.93	0.118	0.0673	-734.99	0.0816	-704.01	0.166	-0.575	0.120	-142.37	183.44	0.205	345.22	6.88	0.362	0.430
129.09	2.82	3.04	0.117	0.0742	-663.31	0.0866	-655.90	0.133	-0.747	0.120	-141.08	204.27	0.201	304.56	6.74	0.361	0.475
140.91	3.18	3.11	0.115	0.0836	-587.17	0.0913	-614.27	0.107	-0.955	0.119	-140.24	223.52	0.196	265.65	6.61	0.346	0.520
152.73	3.55	3.14	0.112	0.0959	-509.82	0.0957	-578.29	0.0861	-1.21	0.118	-139.85	240.74	0.189	229.47	6.46	0.383	0.565
164.55	3.91	3.13	0.106	0.112	-434.04	0.0999	-547.26	0.0699	-1.51	0.117	-139.86	255.03	0.180	196.16	6.31	0.416	0.611
176.36	4.27	3.08	0.100	0.133	-362.04	0.104	-520.61	0.0569	-1.87	0.115	-140.29	266.25	0.171	166.25	6.16	0.438	0.656
188.18	4.64	2.99	0.0931	0.159	-295.44	0.107	-497.87	0.0466	-2.30	0.113	-141.11	273.98	0.161	139.71	6.00	0.240	0.701
200.00	5.00	2.87	0.0855	0.194	-235.33	0.110	-478.66	0.0383	-2.81	0.111	-142.33	278.34	0.151	116.57	5.83	0.174	0.746
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels		

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. $\{Ca\}\{CO_3\}/K_{sp}$. pCO_2 (atm) is the partial pressure of CO_2 in the gas phase.
Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.









Imperative Water Analysis Report

IMPERATIVE
CHEMICAL PARTNERS

SYSTEM IDENTIFICATION

Company: Foundation Energy Management LLC - Hobbs
Location: Blue Quail 3
Sample Source: Wellhead
Account Rep: Mike Gomez

Sample ID#: W-10387

Sample Date: 06-20-2019
Report Date: 06-27-2019

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	1566
Magnesium(as Mg)	323.20
Barium(as Ba)	0.181
Strontium(as Sr)	69.83
Sodium(as Na)	36524
Potassium(as K)	990.60
Iron(as Fe)	72.98
Manganese(as Mn)	2.22

ANIONS

Chloride(as Cl)	65000
Sulfate(as SO_4)	231.00
Dissolved CO_2(as CO_2)	550.00
Bicarbonate(as HCO_3)	915.00
H_2S (as H_2S)	171.00
Boron(as B)	22.67

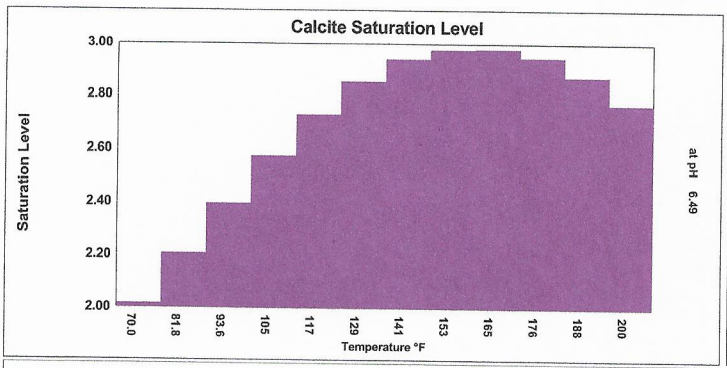
PARAMETERS

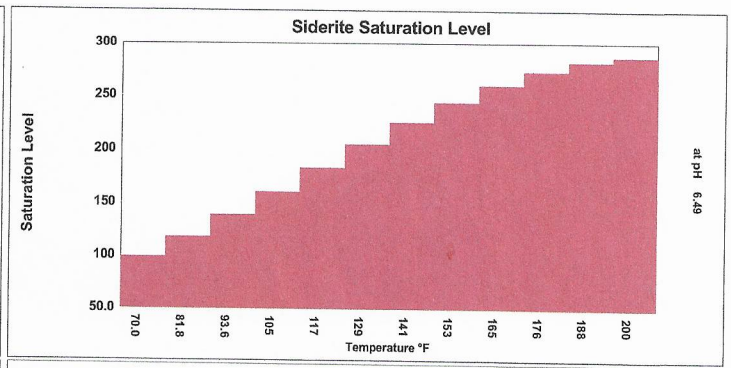
Temperature(°F)	77.00
Sample pH	6.46
Conductivity	145217
T.D.S.	104411
Resistivity	6.89
Sp.Gr.(g/mL)	1.08

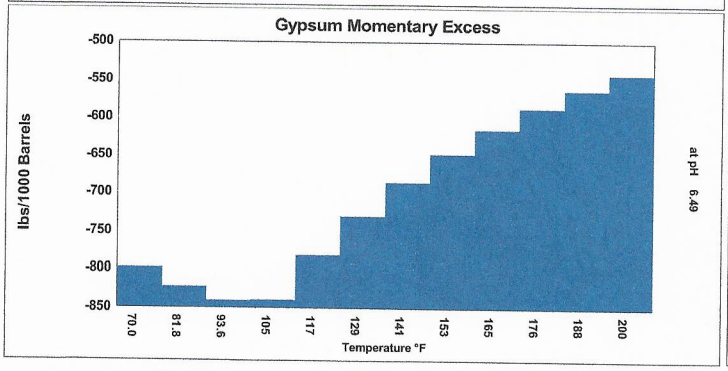
SCALE AND CORROSION POTENTIAL

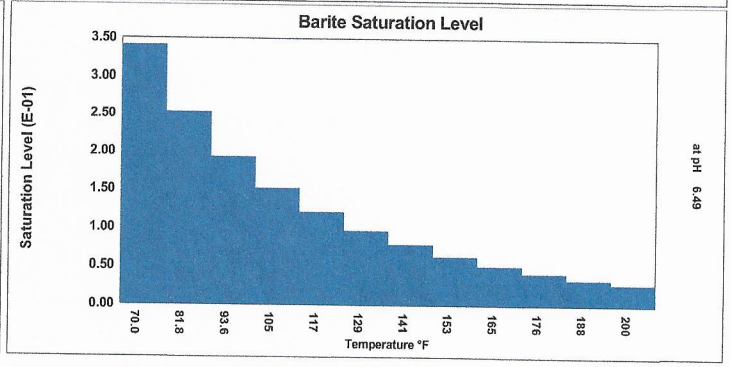
Temp. (°F)	Press. (atm)	Calcite $CaCO_3$		Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackawenite FeS		CO_2 (mpy)	pCO_2 (atm)
70.00	1.00	2.02	0.0941	0.0403	-981.76	0.0608	-798.79	0.341	-0.207	0.0846	-161.86	98.39	0.214	374.28	7.04	0.131	0.302
81.82	1.36	2.21	0.103	0.0401	-965.29	0.0572	-823.21	0.252	-0.317	0.0825	-162.79	117.23	0.216	334.05	6.93	0.211	0.357
93.64	1.73	2.40	0.110	0.0412	-928.27	0.0544	-841.09	0.193	-0.447	0.0819	-161.73	137.96	0.218	301.07	6.82	0.310	0.412
105.45	2.09	2.57	0.116	0.0434	-874.46	0.0533	-840.15	0.151	-0.597	0.0822	-159.56	160.06	0.218	272.99	6.70	0.415	0.467
117.27	2.45	2.73	0.120	0.0469	-808.01	0.0569	-781.60	0.121	-0.775	0.0824	-157.51	182.65	0.217	245.99	6.58	0.430	0.522
129.09	2.82	2.85	0.121	0.0518	-732.95	0.0604	-730.80	0.0965	-0.993	0.0823	-155.97	204.86	0.215	219.15	6.45	0.426	0.577
140.91	3.18	2.94	0.120	0.0584	-652.99	0.0637	-686.72	0.0777	-1.26	0.0819	-154.92	225.68	0.210	192.84	6.31	0.408	0.632
152.73	3.55	2.98	0.117	0.0670	-571.48	0.0668	-648.52	0.0627	-1.57	0.0812	-154.32	244.25	0.203	167.68	6.17	0.448	0.687
164.55	3.91	2.98	0.113	0.0782	-491.26	0.0697	-615.49	0.0510	-1.95	0.0803	-154.16	260.21	0.196	144.36	6.03	0.484	0.742
176.36	4.27	2.94	0.107	0.0927	-414.65	0.0725	-587.05	0.0416	-2.41	0.0792	-154.42	272.77	0.186	123.00	5.88	0.507	0.797
188.18	4.64	2.87	0.0997	0.112	-343.38	0.0749	-562.72	0.0340	-2.94	0.0778	-155.10	281.87	0.177	103.90	5.73	0.276	0.852
200.00	5.00	2.77	0.0919	0.136	-278.67	0.0772	-542.12	0.0280	-3.58	0.0763	-156.20	287.20	0.166	87.03	5.57	0.199	0.907
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels		

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. $\{Ca\}\{CO_3\}/K_{sp}$. pCO_2 (atm) is the partial pressure of CO_2 in the gas phase.
Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.









Imperative Water Analysis Report

IMPERATIVE
CHEMICAL PARTNERS

SYSTEM IDENTIFICATION

Company: Foundation Energy Management LLC - Hobbs
Location: Sharbro Federal 1
Sample Source: Wellhead
Account Rep: Mike Gomez

Sample ID#: W-10388

Sample Date: 06-20-2019
Report Date: 06-27-2019

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	19800
Magnesium(as Mg)	3478
Barium(as Ba)	2.24
Strontium(as Sr)	1191
Sodium(as Na)	68713
Potassium(as K)	1849
Iron(as Fe)	19.32
Manganese(as Mn)	6.57

ANIONS

Chloride(as Cl)	175000
Sulfate(as SO_4)	163.00
Dissolved CO_2(as CO_2)	380.00
Bicarbonate(as HCO_3)	73.20
H_2S (as H_2S)	3.40
Boron(as B)	36.44

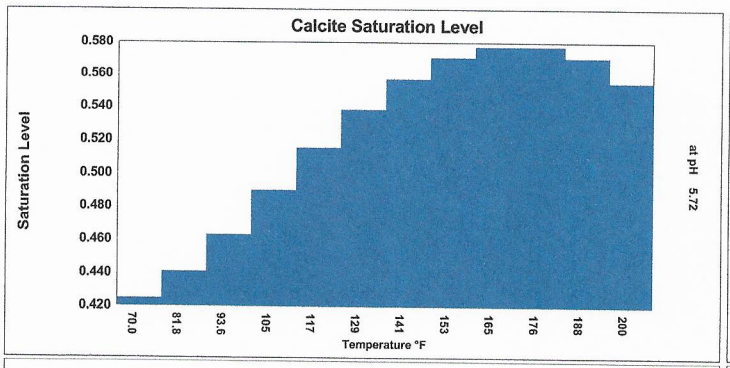
PARAMETERS

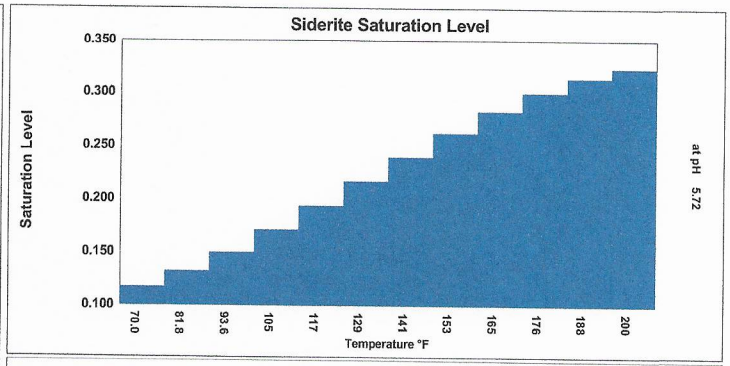
Temperature(^{0}F)	77.00
Sample pH	5.68
Conductivity	485493
T.D.S.	255597
Resistivity	2.06
Sp.Gr.(g/mL)	1.20

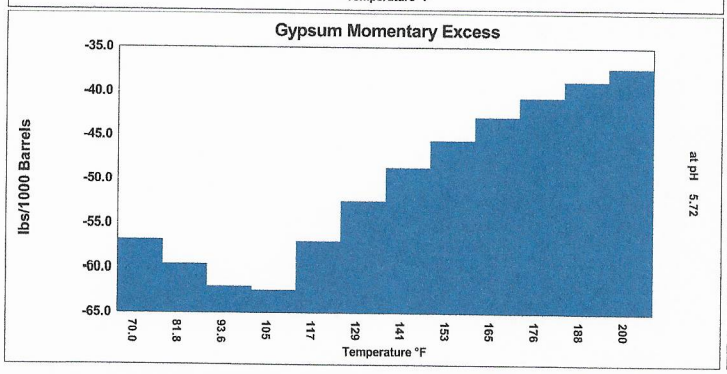
SCALE AND CORROSION POTENTIAL

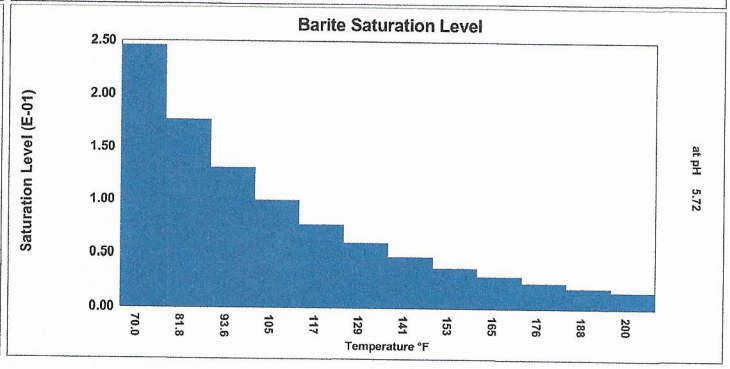
Temp. (^{0}F)	Press. (atm)	Calcite $CaCO_3$		Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackawenite FeS		CO_2 (mpy)	pCO_2 (atm)
70.00	1.00	0.424	-0.00166	0.119	-63.59	0.146	-56.78	0.246	-3.13	0.0855	-108.88	0.117	-0.0107	0.0515	-1.01	0.338	0.0523
81.82	1.36	0.441	-0.00148	0.115	-62.49	0.133	-59.71	0.176	-4.40	0.0807	-109.75	0.132	-0.00892	0.0450	-1.15	0.519	0.0618
93.64	1.73	0.463	-0.00132	0.115	-59.50	0.123	-62.02	0.130	-5.76	0.0777	-108.77	0.150	-0.00749	0.0406	-1.28	0.733	0.0713
105.45	2.09	0.489	-0.00118	0.118	-55.05	0.117	-62.43	0.0995	-7.17	0.0757	-106.80	0.171	-0.00633	0.0375	-1.40	0.955	0.0808
117.27	2.45	0.515	-0.00105	0.124	-49.61	0.122	-57.01	0.0771	-8.67	0.0738	-104.98	0.193	-0.00539	0.0347	-1.52	1.02	0.0903
129.09	2.82	0.538	>-0.001	0.133	-43.62	0.126	-52.48	0.0601	-10.32	0.0719	-103.67	0.216	-0.00463	0.0320	-1.64	1.07	0.0998
140.91	3.18	0.557	>-0.001	0.147	-37.47	0.130	-48.69	0.0472	-12.10	0.0698	-102.84	0.240	-0.00400	0.0292	-1.77	1.11	0.109
152.73	3.55	0.570	>-0.001	0.165	-31.47	0.134	-45.51	0.0373	-14.03	0.0677	-102.48	0.262	-0.00349	0.0265	-1.92	1.14	0.119
164.55	3.91	0.577	>-0.001	0.189	-25.83	0.137	-42.86	0.0297	-16.12	0.0656	-102.55	0.282	-0.00307	0.0238	-2.08	1.16	0.128
176.36	4.27	0.577	>-0.001	0.220	-20.71	0.140	-40.65	0.0237	-18.38	0.0635	-103.08	0.300	-0.00274	0.0212	-2.25	1.16	0.138
188.18	4.64	0.570	>-0.001	0.260	-16.18	0.142	-38.83	0.0191	-20.82	0.0613	-104.04	0.314	-0.00247	0.0186	-2.45	0.632	0.147
200.00	5.00	0.555	>-0.001	0.312	-12.26	0.144	-37.35	0.0154	-23.47	0.0591	-105.46	0.324	-0.00226	0.0162	-2.66	0.378	0.157
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels		

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. $\{Ca\}\{CO_3\}/K_{sp}$. pCO_2 (atm) is the partial pressure of CO_2 in the gas phase.
Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.









Imperative Water Analysis Report

IMPERATIVE
CHEMICAL PARTNERS

SYSTEM IDENTIFICATION

Company: Fountain Energy Managment LLC - Hobbs
Location: Sharbro 2
Sample Source: Wellhead
Account Rep: Mike Gomez

Sample ID#: W-10157

Sample Date: 06-17-2019
Report Date: 06-21-2019

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	20580
Magnesium(as Mg)	3733
Barium(as Ba)	3.81
Strontium(as Sr)	1735
Sodium(as Na)	67259
Potassium(as K)	1892
Iron(as Fe)	28.47
Manganese(as Mn)	5.66

ANIONS

Chloride(as Cl)	175000
Sulfate(as SO_4)	0.00
Dissolved CO_2(as CO_2)	880.00
Bicarbonate(as HCO_3)	48.80
H_2S (as H_2S)	1.70
Boron(as B)	38.10

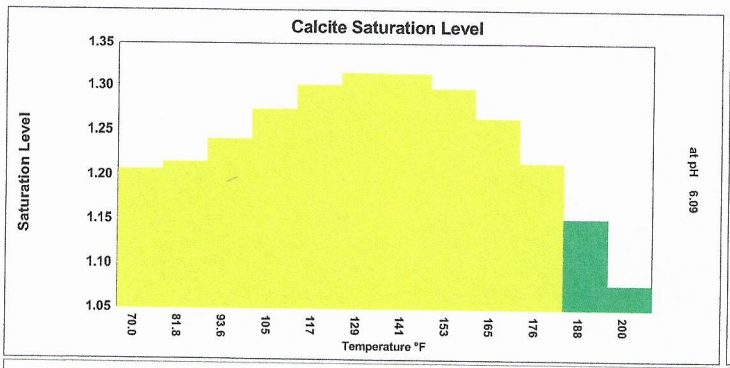
PARAMETERS

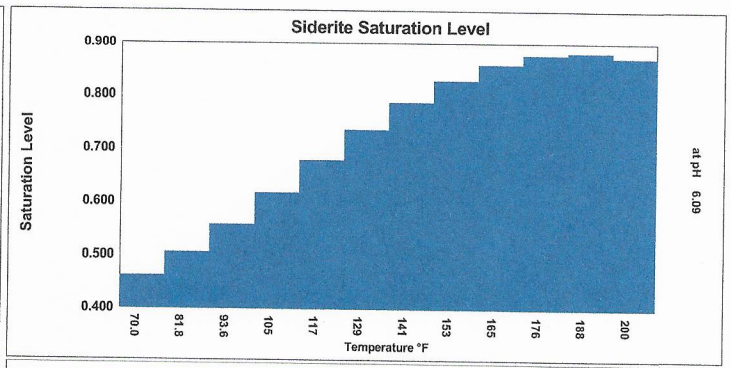
Temperature(°F)	77.00
Sample pH	6.04
Conductivity	488654
T.D.S.	255837
Resistivity	2.05
Sp.Gr.(g/mL)	1.20

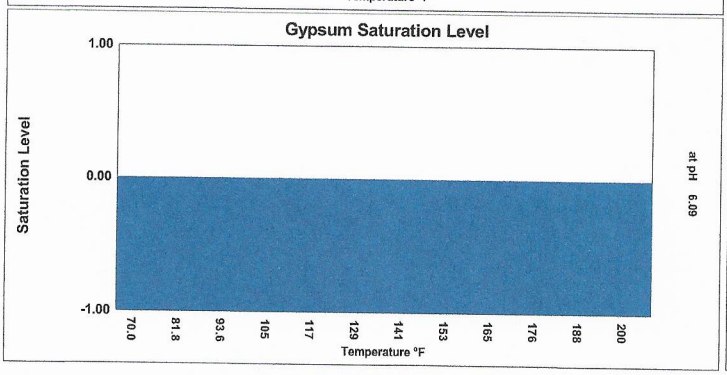
SCALE AND CORROSION POTENTIAL

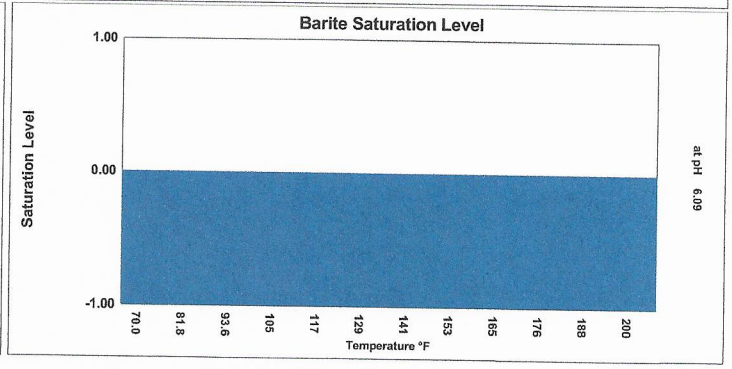
Temp. (°F)	Press. (atm)	Calcite $CaCO_3$		Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackawenite FeS		CO_2 (mpy)	pCO_2 (atm)
70.00	1.00	1.21	< 0.001	0.00	-68.62	0.00	-63.16	0.00	-7.90	0.00	-87.77	0.462	-0.00443	0.181	-0.367	0.127	0.0264
81.82	1.36	1.21	< 0.001	0.00	-67.15	0.00	-65.46	0.00	-9.23	0.00	-88.02	0.505	-0.00347	0.150	-0.455	0.201	0.0312
93.64	1.73	1.24	< 0.001	0.00	-63.92	0.00	-67.22	0.00	-10.58	0.00	-86.89	0.557	-0.00266	0.128	-0.539	0.285	0.0359
105.45	2.09	1.27	< 0.001	0.00	-59.34	0.00	-67.21	0.00	-11.94	0.00	-85.04	0.617	-0.00199	0.113	-0.620	0.369	0.0407
117.27	2.45	1.30	< 0.001	0.00	-53.85	0.00	-61.71	0.00	-13.37	0.00	-83.34	0.678	-0.00146	0.1000	-0.706	0.381	0.0455
129.09	2.82	1.32	< 0.001	0.00	-47.88	0.00	-57.09	0.00	-14.93	0.00	-82.06	0.735	-0.00106	0.0876	-0.802	0.388	0.0503
140.91	3.18	1.31	< 0.001	0.00	-41.78	0.00	-53.20	0.00	-16.62	0.00	-81.19	0.786	>-0.001	0.0762	-0.909	0.390	0.0551
152.73	3.55	1.30	< 0.001	0.00	-35.85	0.00	-49.94	0.00	-18.47	0.00	-80.69	0.828	>-0.001	0.0657	-1.03	0.415	0.0599
164.55	3.91	1.26	< 0.001	0.00	-30.29	0.00	-47.19	0.00	-20.47	0.00	-80.56	0.858	>-0.001	0.0561	-1.16	0.442	0.0647
176.36	4.27	1.21	< 0.001	0.00	-25.25	0.00	-44.90	0.00	-22.65	0.00	-80.80	0.876	>-0.001	0.0473	-1.32	0.463	0.0695
188.18	4.64	1.15	< 0.001	0.00	-20.79	0.00	-43.01	0.00	-25.03	0.00	-81.40	0.881	>-0.001	0.0395	-1.49	0.239	0.0743
200.00	5.00	1.08	< 0.001	0.00	-16.94	0.00	-41.46	0.00	-27.62	0.00	-82.37	0.872	>-0.001	0.0327	-1.68	0.0851	0.0791
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels		

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. $\{Ca\}\{CO_3\}/K_{sp}$. pCO_2 (atm) is the partial pressure of CO_2 in the gas phase. Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.









Imperative Water Analysis Report

IMPERATIVE
CHEMICAL PARTNERS

SYSTEM IDENTIFICATION

Company: Foundation Energy Management, LLC Hobbs
Location: Sharbro 3
Sample Source: Wellhead
Account Rep: Mike Gomez

Sample ID#: W-8532

Sample Date: 05-03-2019
Report Date: 05-10-2019

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	20370
Magnesium(as Mg)	3545
Barium(as Ba)	4.70
Strontium(as Sr)	2033
Sodium(as Na)	81430
Potassium(as K)	2493
Iron(as Fe)	20.57
Manganese(as Mn)	5.54

ANIONS

Chloride(as Cl)	180000
Sulfate(as SO_4)	0.00
Dissolved CO_2(as CO_2)	1400
Bicarbonate(as HCO_3)	122.00
H_2S (as H_2S)	5.10
Boron(as B)	37.67

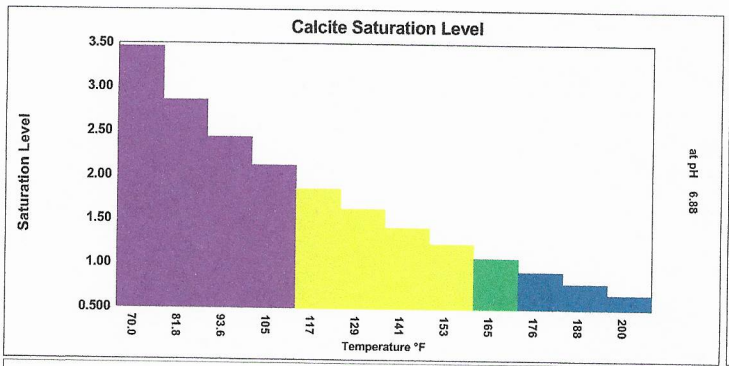
PARAMETERS

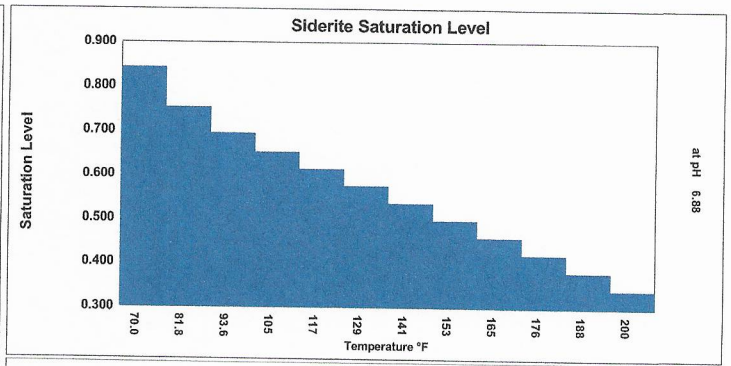
Temperature(°F)	77.00
Sample pH	6.78
Conductivity	560448
T.D.S.	270712
Resistivity	1.78
Sp.Gr.(g/mL)	1.21

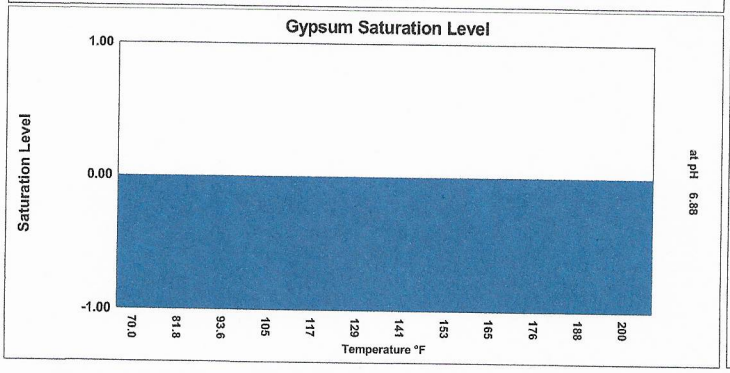
SCALE AND CORROSION POTENTIAL

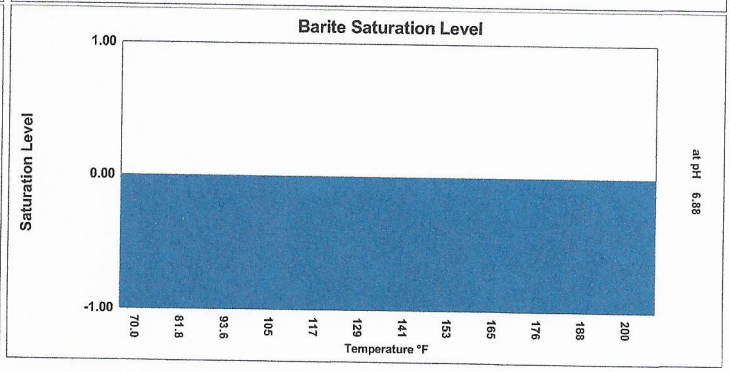
Temp. (°F)	Press. (atm)	Calcite $CaCO_3$		Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackawenite FeS		CO_2 (mpy)	pCO_2 (atm)
70.00	1.00	3.46	0.00591	0.00	-62.74	0.00	-59.73	0.00	-7.86	0.00	-79.29	0.841	-0.00182	7.23	0.672	0.0250	0.0237
81.82	1.36	2.85	0.00410	0.00	-61.39	0.00	-61.90	0.00	-9.22	0.00	-79.54	0.751	-0.00241	4.46	0.540	0.0363	0.0280
93.64	1.73	2.43	0.00294	0.00	-58.44	0.00	-63.56	0.00	-10.60	0.00	-78.53	0.693	-0.00256	2.96	0.415	0.0115	0.0323
105.45	2.09	2.12	0.00214	0.00	-54.25	0.00	-63.55	0.00	-11.99	0.00	-76.86	0.650	-0.00253	2.06	0.292	0.0215	0.0366
117.27	2.45	1.85	0.00154	0.00	-49.23	0.00	-58.35	0.00	-13.45	0.00	-75.33	0.612	-0.00246	1.48	0.166	0.0738	0.0409
129.09	2.82	1.62	0.00106	0.00	-43.76	0.00	-53.98	0.00	-15.04	0.00	-74.19	0.574	-0.00238	1.07	0.0305	0.139	0.0452
140.91	3.18	1.42	< 0.001	0.00	-38.19	0.00	-50.31	0.00	-16.78	0.00	-73.42	0.536	-0.00231	0.783	-0.115	0.181	0.0495
152.73	3.55	1.23	< 0.001	0.00	-32.77	0.00	-47.22	0.00	-18.67	0.00	-72.99	0.497	-0.00225	0.576	-0.272	0.243	0.0538
164.55	3.91	1.07	< 0.001	0.00	-27.69	0.00	-44.64	0.00	-20.72	0.00	-72.90	0.458	-0.00220	0.425	-0.444	0.305	0.0582
176.36	4.27	0.917	>-0.001	0.00	-23.09	0.00	-42.48	0.00	-22.96	0.00	-73.15	0.418	-0.00216	0.315	-0.630	0.343	0.0625
188.18	4.64	0.784	>-0.001	0.00	-19.01	0.00	-40.69	0.00	-25.40	0.00	-73.73	0.379	-0.00212	0.233	-0.834	0.184	0.0668
200.00	5.00	0.666	>-0.001	0.00	-15.49	0.00	-39.24	0.00	-28.05	0.00	-74.66	0.341	-0.00209	0.173	-1.06	0.126	0.0711
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels		

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. $\{Ca\}\{CO_3\}/K_{sp}$. pCO_2 (atm) is the partial pressure of CO_2 in the gas phase.
Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.









Imperative Water Analysis Report

IMPERATIVE
CHEMICAL PARTNERS

SYSTEM IDENTIFICATION

Company: Foundation Energy Management, LLC Hobbs
Location: Sharbro 5
Sample Source: Wellhead
Account Rep: Mike Gomez

Sample ID#: W-8533

Sample Date: 05-03-2019
Report Date: 05-10-2019

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	18560
Magnesium(as Mg)	3203
Barium(as Ba)	2.59
Strontium(as Sr)	1220
Sodium(as Na)	77930
Potassium(as K)	2460
Iron(as Fe)	32.62
Manganese(as Mn)	3.97

ANIONS

Chloride(as Cl)	169000
Sulfate(as SO_4)	124.00
Dissolved CO_2(as CO_2)	800.00
Bicarbonate(as HCO_3)	122.00
H_2S (as H_2S)	3.40
Boron(as B)	37.26

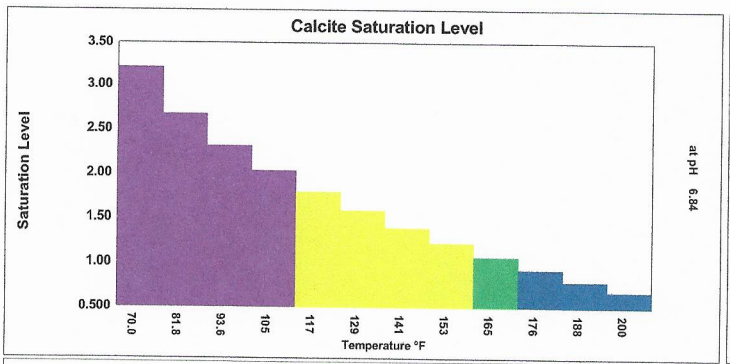
PARAMETERS

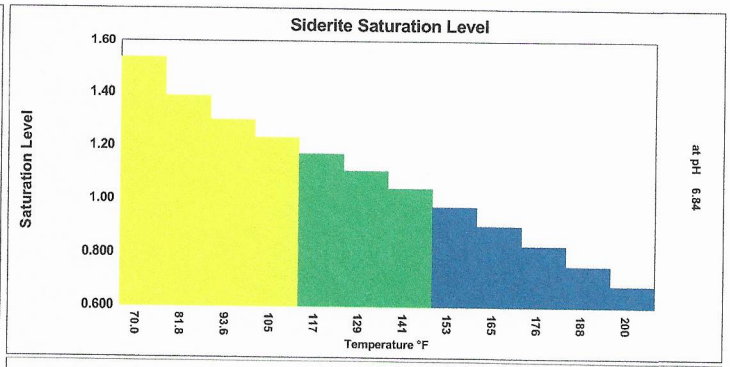
Temperature(°F)	77.00
Sample pH	6.75
Conductivity	509830
T.D.S.	256017
Resistivity	1.96
Sp.Gr.(g/mL)	1.19

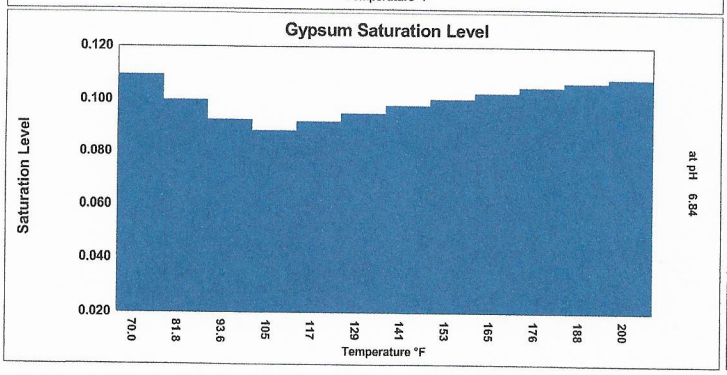
SCALE AND CORROSION POTENTIAL

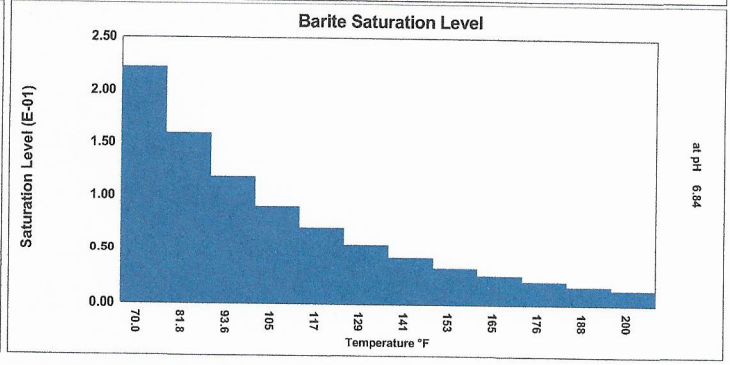
Temp. (°F)	Press. (atm)	Calcite $CaCO_3$		Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackawenite FeS		CO_2 (mpy)	pCO_2 (atm)
70.00	1.00	3.19	0.00638	0.0900	-66.84	0.109	-61.04	0.222	-3.68	0.0685	-107.61	1.53	0.00373	7.12	0.475	0.0177	0.0252
81.82	1.36	2.67	0.00447	0.0871	-65.60	0.0999	-63.92	0.159	-5.03	0.0647	-108.36	1.39	0.00231	4.46	0.393	0.0289	0.0298
93.64	1.73	2.30	0.00324	0.0869	-62.45	0.0924	-66.17	0.118	-6.45	0.0623	-107.32	1.30	0.00152	3.01	0.313	0.0152	0.0343
105.45	2.09	2.03	0.00239	0.0892	-57.83	0.0880	-66.48	0.0900	-7.88	0.0607	-105.33	1.23	0.00102	2.13	0.231	0.0206	0.0389
117.27	2.45	1.79	0.00173	0.0939	-52.20	0.0916	-60.79	0.0697	-9.40	0.0592	-103.48	1.17	< 0.001	1.54	0.143	0.0716	0.0435
129.09	2.82	1.58	0.00121	0.101	-46.03	0.0949	-56.03	0.0544	-11.05	0.0576	-102.15	1.11	< 0.001	1.13	0.0435	0.138	0.0481
140.91	3.18	1.39	< 0.001	0.112	-39.70	0.0978	-52.04	0.0427	-12.83	0.0560	-101.29	1.04	< 0.001	0.835	-0.0682	0.190	0.0527
152.73	3.55	1.22	< 0.001	0.125	-33.54	0.100	-48.70	0.0338	-14.76	0.0543	-100.89	0.973	>-0.001	0.619	-0.195	0.256	0.0572
164.55	3.91	1.06	< 0.001	0.144	-27.75	0.103	-45.90	0.0269	-16.83	0.0526	-100.93	0.901	>-0.001	0.460	-0.337	0.320	0.0618
176.36	4.27	0.918	>-0.001	0.167	-22.49	0.105	-43.57	0.0215	-19.08	0.0509	-101.41	0.828	>-0.001	0.343	-0.498	0.358	0.0664
188.18	4.64	0.789	>-0.001	0.198	-17.84	0.107	-41.65	0.0173	-21.50	0.0492	-102.33	0.754	>-0.001	0.255	-0.678	0.191	0.0710
200.00	5.00	0.673	>-0.001	0.237	-13.82	0.108	-40.09	0.0140	-24.13	0.0475	-103.69	0.682	>-0.001	0.190	-0.880	0.131	0.0756
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels		

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. $\{Ca\}\{CO_3\}/K_{sp}$. pCO_2 (atm) is the partial pressure of CO_2 in the gas phase.
Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.









Imperative Water Analysis Report

IMPERATIVE
CHEMICAL PARTNERS

SYSTEM IDENTIFICATION

Company: Foundation Energy Management, LLC Hobbs
Location: Sharbro 6
Sample Source: Wellhead
Account Rep: Mike Gomez

Sample ID#: W-8531

Sample Date: 05-03-2019
Report Date: 05-10-2019

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	20130
Magnesium(as Mg)	3575
Barium(as Ba)	2.97
Strontium(as Sr)	1497
Sodium(as Na)	80130
Potassium(as K)	2551
Iron(as Fe)	17.68
Manganese(as Mn)	5.95

ANIONS

Chloride(as Cl)	177000
Sulfate(as SO_4)	60.00
Dissolved CO_2(as CO_2)	850.00
Bicarbonate(as HCO_3)	146.40
H_2S (as H_2S)	5.10
Boron(as B)	35.56

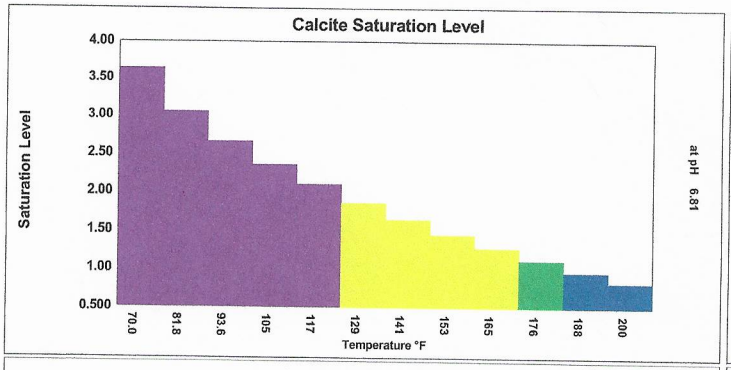
PARAMETERS

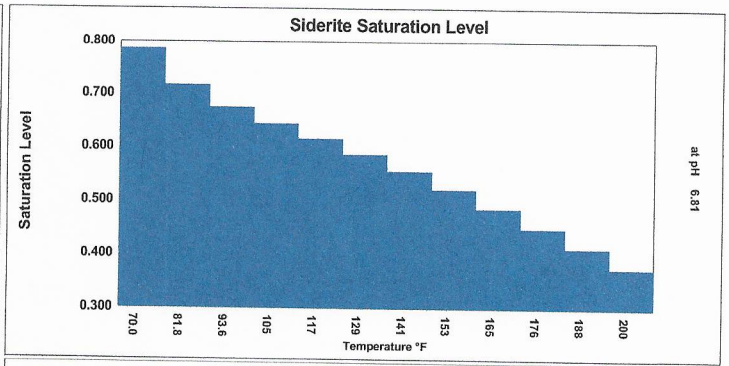
Temperature(°F)	77.00
Sample pH	6.72
Conductivity	551680
T.D.S.	266463
Resistivity	1.81
Sp.Gr.(g/mL)	1.20

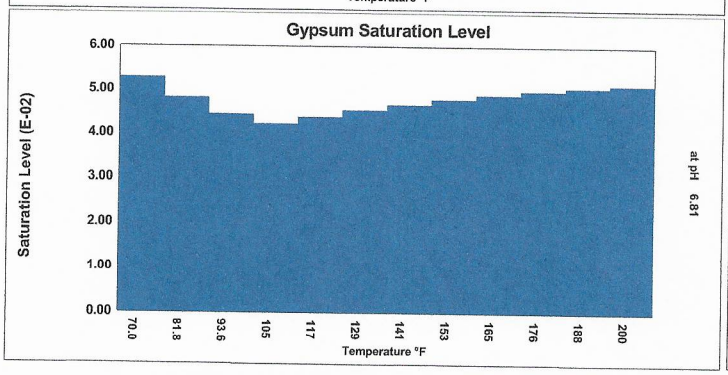
SCALE AND CORROSION POTENTIAL

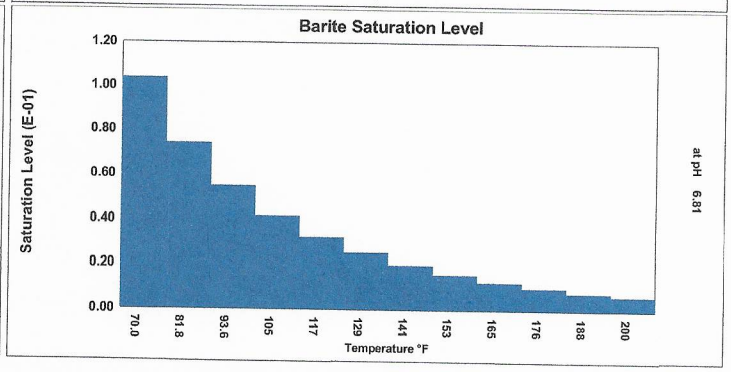
Temp. (°F)	Press. (atm)	Calcite $CaCO_3$		Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackawenite FeS		CO_2 (mpy)	pCO_2 (atm)
70.00	1.00	3.63	0.00644	0.0441	-60.79	0.0527	-57.12	0.104	-5.89	0.0342	-98.14	0.784	-0.00283	5.11	0.558	0.0303	0.0320
81.82	1.36	3.05	0.00463	0.0426	-59.57	0.0481	-59.49	0.0740	-7.34	0.0322	-98.64	0.715	-0.00317	3.24	0.426	0.0439	0.0378
93.64	1.73	2.65	0.00346	0.0425	-56.71	0.0444	-61.32	0.0547	-8.82	0.0309	-97.55	0.673	-0.00312	2.20	0.302	0.0275	0.0436
105.45	2.09	2.35	0.00264	0.0435	-52.59	0.0422	-61.45	0.0417	-10.28	0.0301	-95.62	0.643	-0.00296	1.57	0.182	0.0294	0.0494
117.27	2.45	2.09	0.00201	0.0457	-47.61	0.0439	-56.32	0.0322	-11.82	0.0293	-93.85	0.615	-0.00280	1.15	0.0590	0.0854	0.0552
129.09	2.82	1.86	0.00150	0.0492	-42.17	0.0453	-52.02	0.0251	-13.48	0.0285	-92.54	0.585	-0.00266	0.849	-0.0726	0.143	0.0610
140.91	3.18	1.64	0.00107	0.0541	-36.61	0.0467	-48.42	0.0197	-15.27	0.0276	-91.68	0.554	-0.00255	0.631	-0.214	0.186	0.0668
152.73	3.55	1.45	< 0.001	0.0607	-31.19	0.0479	-45.39	0.0155	-17.21	0.0268	-91.25	0.520	-0.00246	0.471	-0.367	0.256	0.0726
164.55	3.91	1.27	< 0.001	0.0694	-26.12	0.0489	-42.85	0.0123	-19.30	0.0259	-91.22	0.485	-0.00240	0.353	-0.533	0.329	0.0784
176.36	4.27	1.11	< 0.001	0.0806	-21.51	0.0498	-40.74	0.00984	-21.57	0.0250	-91.60	0.449	-0.00234	0.264	-0.713	0.395	0.0843
188.18	4.64	0.956	>-0.001	0.0953	-17.43	0.0506	-38.99	0.00791	-24.02	0.0241	-92.38	0.411	-0.00230	0.198	-0.910	0.224	0.0901
200.00	5.00	0.822	>-0.001	0.114	-13.90	0.0512	-37.57	0.00639	-26.69	0.0232	-93.59	0.374	-0.00227	0.149	-1.13	0.153	0.0959
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels		

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. $\{Ca\}\{CO_3\}/K_{sp}$. pCO_2 (atm) is the partial pressure of CO_2 in the gas phase.
Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.









Imperative Water Analysis Report

IMPERATIVE
CHEMICAL PARTNERS

SYSTEM IDENTIFICATION

Company: Foundation Energy Management, LLC-Hobbs
Location: Sharbro 4
Sample Source: Wellhead
Account Rep: Mike Gomez

Sample ID#: W-8534

Sample Date: 05-03-2019
Report Date: 05-10-2019

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	12830
Magnesium(as Mg)	2250
Barium(as Ba)	1.06
Strontium(as Sr)	622.90
Sodium(as Na)	79196
Potassium(as K)	2262
Iron(as Fe)	22.82
Manganese(as Mn)	2.78

ANIONS

Chloride(as Cl)	157000
Sulfate(as SO_4)	174.00
Dissolved CO_2(as CO_2)	700.00
Bicarbonate(as HCO_3)	122.00
H_2S (as H_2S)	1.70
Boron(as B)	37.21

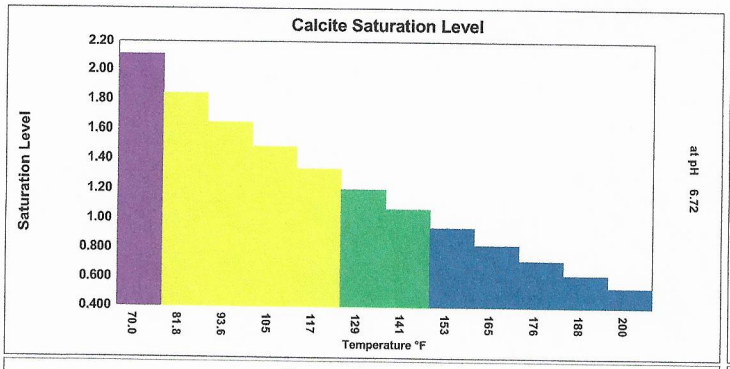
PARAMETERS

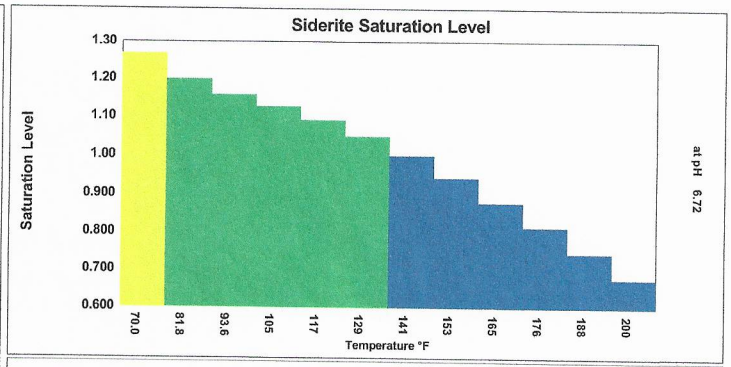
Temperature(^{0}F)	77.00
Sample pH	6.64
Conductivity	445273
T.D.S.	240116
Resistivity	2.25
Sp.Gr.(g/mL)	1.18

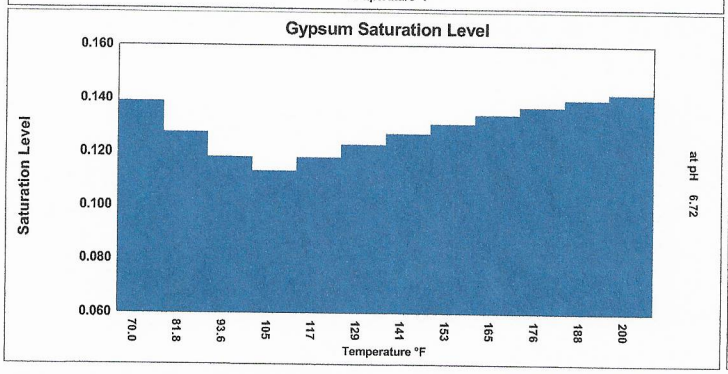
SCALE AND CORROSION POTENTIAL

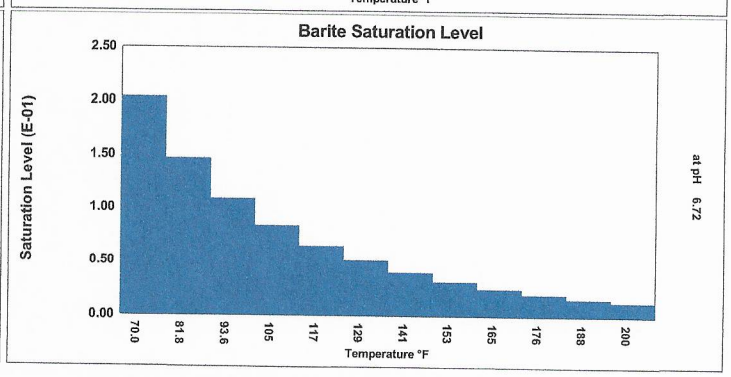
Temp. (^{0}F)	Press. (atm)	Calcite $CaCO_3$		Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackawenite FeS		CO_2 (mpy)	pCO_2 (atm)
70.00	1.00	2.11	0.00563	0.112	-107.19	0.139	-94.93	0.203	-2.20	0.0780	-156.54	1.26	0.00259	1.73	0.0989	0.0130	0.0306
81.82	1.36	1.84	0.00392	0.109	-105.23	0.127	-99.63	0.146	-3.13	0.0740	-157.61	1.20	0.00164	1.15	0.0277	0.0472	0.0361
93.64	1.73	1.64	0.00279	0.109	-100.13	0.118	-103.32	0.109	-4.19	0.0715	-156.35	1.16	0.00112	0.809	-0.0468	0.0939	0.0417
105.45	2.09	1.48	0.00196	0.112	-92.61	0.113	-103.88	0.0834	-5.33	0.0700	-153.82	1.13	< 0.001	0.593	-0.126	0.166	0.0472
117.27	2.45	1.34	0.00128	0.118	-83.44	0.118	-94.83	0.0648	-6.60	0.0685	-151.47	1.09	< 0.001	0.442	-0.214	0.216	0.0528
129.09	2.82	1.20	< 0.001	0.128	-73.37	0.123	-87.25	0.0507	-8.02	0.0669	-149.76	1.05	< 0.001	0.330	-0.314	0.262	0.0583
140.91	3.18	1.07	< 0.001	0.142	-63.04	0.127	-80.91	0.0400	-9.60	0.0653	-148.67	0.998	>-0.001	0.248	-0.428	0.303	0.0639
152.73	3.55	0.942	>-0.001	0.159	-52.96	0.131	-75.59	0.0317	-11.34	0.0635	-148.17	0.941	>-0.001	0.187	-0.557	0.360	0.0694
164.55	3.91	0.826	>-0.001	0.183	-43.50	0.134	-71.14	0.0253	-13.25	0.0616	-148.23	0.878	>-0.001	0.140	-0.702	0.401	0.0750
176.36	4.27	0.719	>-0.001	0.213	-34.90	0.137	-67.43	0.0202	-15.34	0.0597	-148.86	0.812	>-0.001	0.105	-0.865	0.428	0.0806
188.18	4.64	0.622	-0.00114	0.253	-27.29	0.140	-64.37	0.0163	-17.61	0.0578	-150.05	0.744	>-0.001	0.0793	-1.05	0.225	0.0861
200.00	5.00	0.533	-0.00138	0.304	-20.70	0.142	-61.88	0.0132	-20.08	0.0559	-151.82	0.676	>-0.001	0.0595	-1.25	0.151	0.0917
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels		

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. $\{Ca\}\{CO_3\}/K_{sp}$. pCO_2 (atm) is the partial pressure of CO_2 in the gas phase.
Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.









Imperative Water Analysis Report

IMPERATIVE
CHEMICAL PARTNERS

SYSTEM IDENTIFICATION

Company: Foundation Energy Management, LLC Hobbs
Location: Sharbro 8
Sample Source: Wellhead
Account Rep: Mike Gomez

Sample ID#: W-8530

Sample Date: 05-03-2019
Report Date: 05-10-2019

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	22150
Magnesium(as Mg)	3786
Barium(as Ba)	1.33
Strontium(as Sr)	821.00
Sodium(as Na)	76639
Potassium(as K)	2487
Iron(as Fe)	13.55
Manganese(as Mn)	7.97

ANIONS

Chloride(as Cl)	175000
Sulfate(as SO_4)	147.00
Dissolved CO_2(as CO_2)	850.00
Bicarbonate(as HCO_3)	73.20
H_2S (as H_2S)	5.10
Boron(as B)	49.57

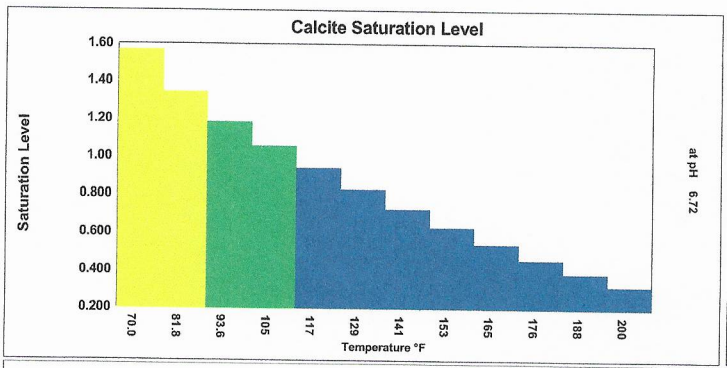
PARAMETERS

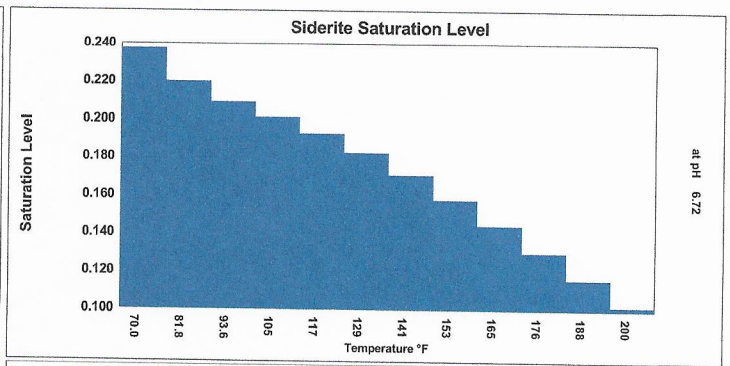
Temperature(°F)	77.00
Sample pH	6.64
Conductivity	544270
T.D.S.	263591
Resistivity	1.84
Sp.Gr.(g/mL)	1.20

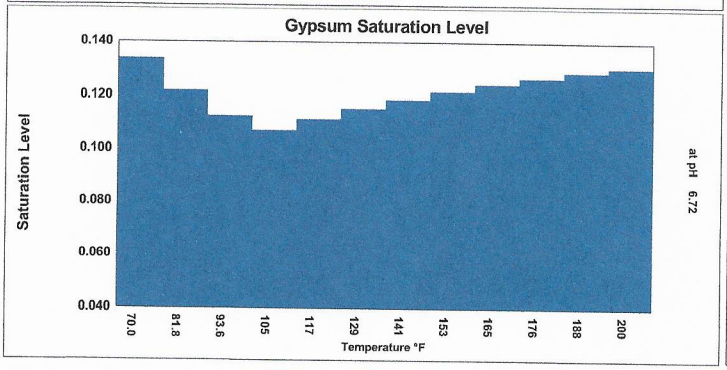
SCALE AND CORROSION POTENTIAL

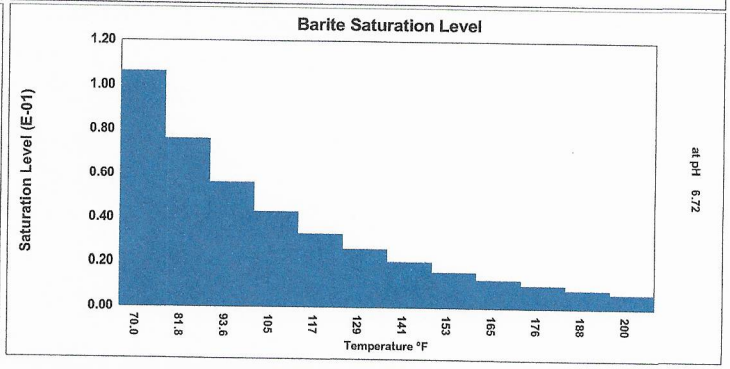
Temp. (°F)	Press. (atm)	Calcite $CaCO_3$		Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackawenite FeS		CO_2 (mpy)	pCO_2 (atm)
70.00	1.00	1.57	0.00128	0.111	-51.95	0.133	-47.62	0.106	-4.50	0.0429	-153.69	0.237	-0.0132	2.91	0.362	0.0233	0.0184
81.82	1.36	1.34	< 0.001	0.107	-51.04	0.122	-50.01	0.0759	-5.87	0.0404	-154.51	0.220	-0.0114	1.89	0.228	0.0319	0.0217
93.64	1.73	1.18	< 0.001	0.107	-48.60	0.112	-51.90	0.0561	-7.31	0.0389	-153.07	0.209	-0.00993	1.31	0.101	0.0902	0.0250
105.45	2.09	1.05	< 0.001	0.109	-44.98	0.107	-52.21	0.0428	-8.77	0.0378	-150.40	0.201	-0.00870	0.945	-0.0224	0.181	0.0284
117.27	2.45	0.937	>-0.001	0.115	-40.56	0.111	-47.71	0.0331	-10.33	0.0369	-147.94	0.192	-0.00770	0.693	-0.152	0.212	0.0317
129.09	2.82	0.827	>-0.001	0.124	-35.70	0.115	-43.95	0.0258	-12.01	0.0359	-146.14	0.182	-0.00689	0.511	-0.293	0.228	0.0350
140.91	3.18	0.725	>-0.001	0.136	-30.71	0.119	-40.80	0.0202	-13.83	0.0348	-144.96	0.171	-0.00623	0.377	-0.447	0.237	0.0384
152.73	3.55	0.628	>-0.001	0.153	-25.84	0.122	-38.16	0.0160	-15.80	0.0337	-144.39	0.158	-0.00569	0.278	-0.616	0.272	0.0417
164.55	3.91	0.539	>-0.001	0.175	-21.27	0.124	-35.95	0.0127	-17.92	0.0326	-144.39	0.144	-0.00524	0.204	-0.802	0.304	0.0451
176.36	4.27	0.457	>-0.001	0.204	-17.12	0.127	-34.12	0.0102	-20.22	0.0315	-144.97	0.130	-0.00486	0.150	-1.01	0.326	0.0484
188.18	4.64	0.384	>-0.001	0.241	-13.44	0.129	-32.61	0.00816	-22.71	0.0304	-146.13	0.116	-0.00455	0.110	-1.24	0.170	0.0517
200.00	5.00	0.319	>-0.001	0.288	-10.26	0.130	-31.39	0.00659	-25.41	0.0293	-147.88	0.102	-0.00429	0.0799	-1.49	0.113	0.0551
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels		

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. $\{Ca\}\{CO_3\}/K_{sp}$. pCO_2 (atm) is the partial pressure of CO_2 in the gas phase.
Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.









Imperative Water Analysis Report

IMPERATIVE
CHEMICAL PARTNERS

SYSTEM IDENTIFICATION

Company: Foundation Energy Management LLC - Hobbs
Location: Sharbro 10
Sample Source: Wellhead
Account Rep: Mike Gomez

Sample ID#: W-10386

Sample Date: 06-20-2019
Report Date: 06-27-2019

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	16890
Magnesium(as Mg)	2928
Barium(as Ba)	1.89
Strontium(as Sr)	996.70
Sodium(as Na)	72095
Potassium(as K)	1512
Iron(as Fe)	15.05
Manganese(as Mn)	5.49

ANIONS

Chloride(as Cl)	174000
Sulfate(as SO_4)	151.00
Dissolved CO_2(as CO_2)	480.00
Bicarbonate(as HCO_3)	97.60
H_2S (as H_2S)	3.40
Boron(as B)	31.89

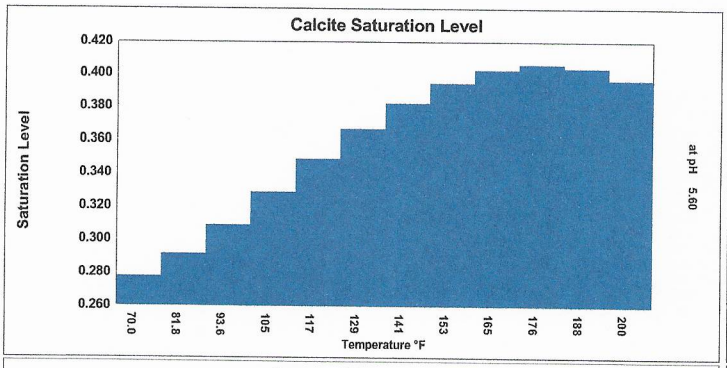
PARAMETERS

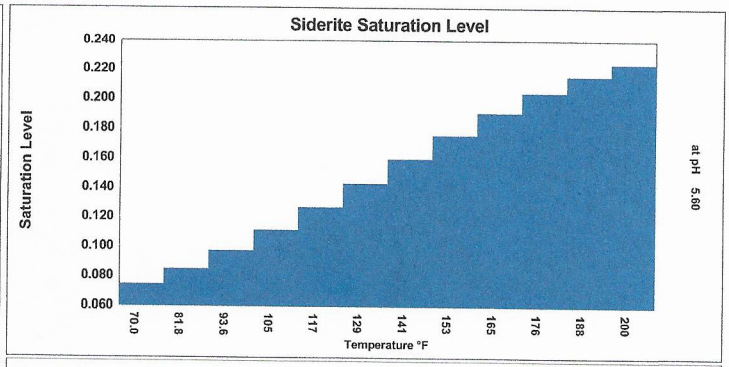
Temperature(°F)	77.00
Sample pH	5.56
Conductivity	472474
T.D.S.	253742
Resistivity	2.12
Sp.Gr.(g/mL)	1.20

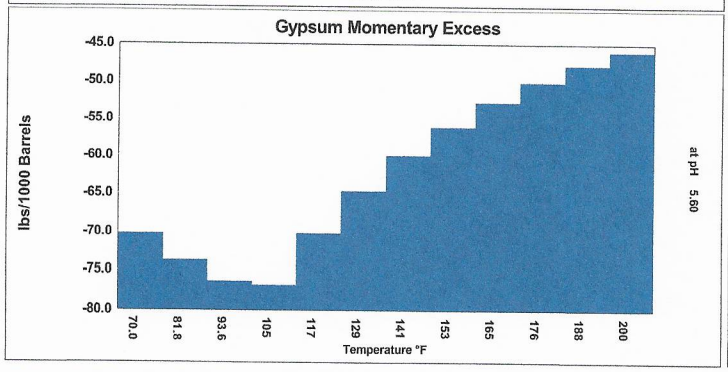
SCALE AND CORROSION POTENTIAL

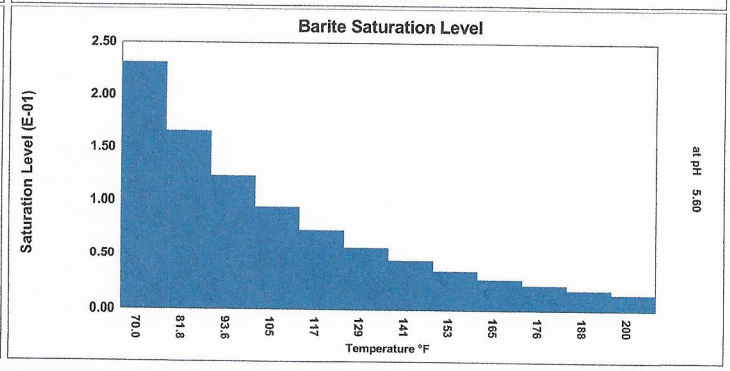
Temp. (°F)	Press. (atm)	Calcite $CaCO_3$		Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackawenite FeS		CO_2 (mpy)	pCO_2 (atm)
70.00	1.00	0.277	-0.00257	0.106	-78.36	0.130	-70.25	0.231	-2.97	0.0795	-122.65	0.0741	-0.0143	0.0237	-1.37	0.472	0.0739
81.82	1.36	0.291	-0.00232	0.103	-76.94	0.119	-73.71	0.166	-4.18	0.0752	-123.55	0.0843	-0.0120	0.0210	-1.53	0.720	0.0873
93.64	1.73	0.308	-0.00210	0.103	-73.24	0.110	-76.43	0.123	-5.48	0.0725	-122.45	0.0967	-0.0101	0.0192	-1.67	1.01	0.101
105.45	2.09	0.328	-0.00191	0.105	-67.78	0.105	-76.85	0.0938	-6.84	0.0707	-120.27	0.111	-0.00865	0.0180	-1.80	1.31	0.114
117.27	2.45	0.348	-0.00174	0.111	-61.12	0.110	-70.21	0.0728	-8.30	0.0691	-118.25	0.127	-0.00743	0.0168	-1.93	1.42	0.128
129.09	2.82	0.366	-0.00161	0.120	-53.80	0.114	-64.65	0.0569	-9.90	0.0674	-116.79	0.143	-0.00644	0.0157	-2.07	1.50	0.141
140.91	3.18	0.382	-0.00149	0.132	-46.29	0.117	-60.00	0.0447	-11.64	0.0656	-115.86	0.159	-0.00563	0.0145	-2.21	1.57	0.154
152.73	3.55	0.394	-0.00140	0.149	-38.96	0.121	-56.10	0.0354	-13.54	0.0637	-115.43	0.175	-0.00496	0.0133	-2.37	1.61	0.168
164.55	3.91	0.402	-0.00134	0.170	-32.09	0.124	-52.84	0.0282	-15.59	0.0617	-115.49	0.191	-0.00441	0.0121	-2.54	1.65	0.181
176.36	4.27	0.405	-0.00129	0.198	-25.84	0.126	-50.12	0.0226	-17.81	0.0598	-116.03	0.204	-0.00396	0.0108	-2.73	1.65	0.195
188.18	4.64	0.403	-0.00126	0.235	-20.31	0.128	-47.88	0.0182	-20.21	0.0578	-117.06	0.215	-0.00359	0.00962	-2.93	0.936	0.208
200.00	5.00	0.396	-0.00125	0.282	-15.52	0.130	-46.05	0.0147	-22.82	0.0558	-118.58	0.224	-0.00330	0.00845	-3.16	0.624	0.222
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels		

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. $\{Ca\}\{CO_3\}/K_{sp}$. pCO_2 (atm) is the partial pressure of CO_2 in the gas phase.
Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.









C108-Item VII #5
Disposal Zone Formation Water Analysis
Tomcat 15 Federal #2
Delaware Bell Canyon Zone

North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
(806) 229-8121
Lab Team Leader - Sheila Hernandez
(432) 495-7240

Water Analysis Report by Baker Petrolite

Company:	DEVON ENERGY CORPORATION	Sales RDT:	44212
Region:	PERMIAN BASIN	Account Manager:	WAYNE PETERSON (505) 910-9389
Area:	ARTESIA, NM	Sample #:	437125
Lease/Platform:	TOM CAT '15' FEDERAL	Analysis ID #:	82330
Entity (or well #):	2	Analysis Cost:	$80.00
Formation:	UNKNOWN		
Sample Point:	WELLHEAD		

Summary	
Sampling Date:	05/16/08
Analysis Date:	05/27/08
Analyst:	KIMBERLY POOLE
TDS (mg/l or g/m3):	172866.9
Density (g/cm3, tonne/m3):	1.121
Anion/Cation Ratio:	1
Carbon Dioxide:	350 PPM
Oxygen:	
Comments:	

Analysis of Sample 437125 @ 75 °F

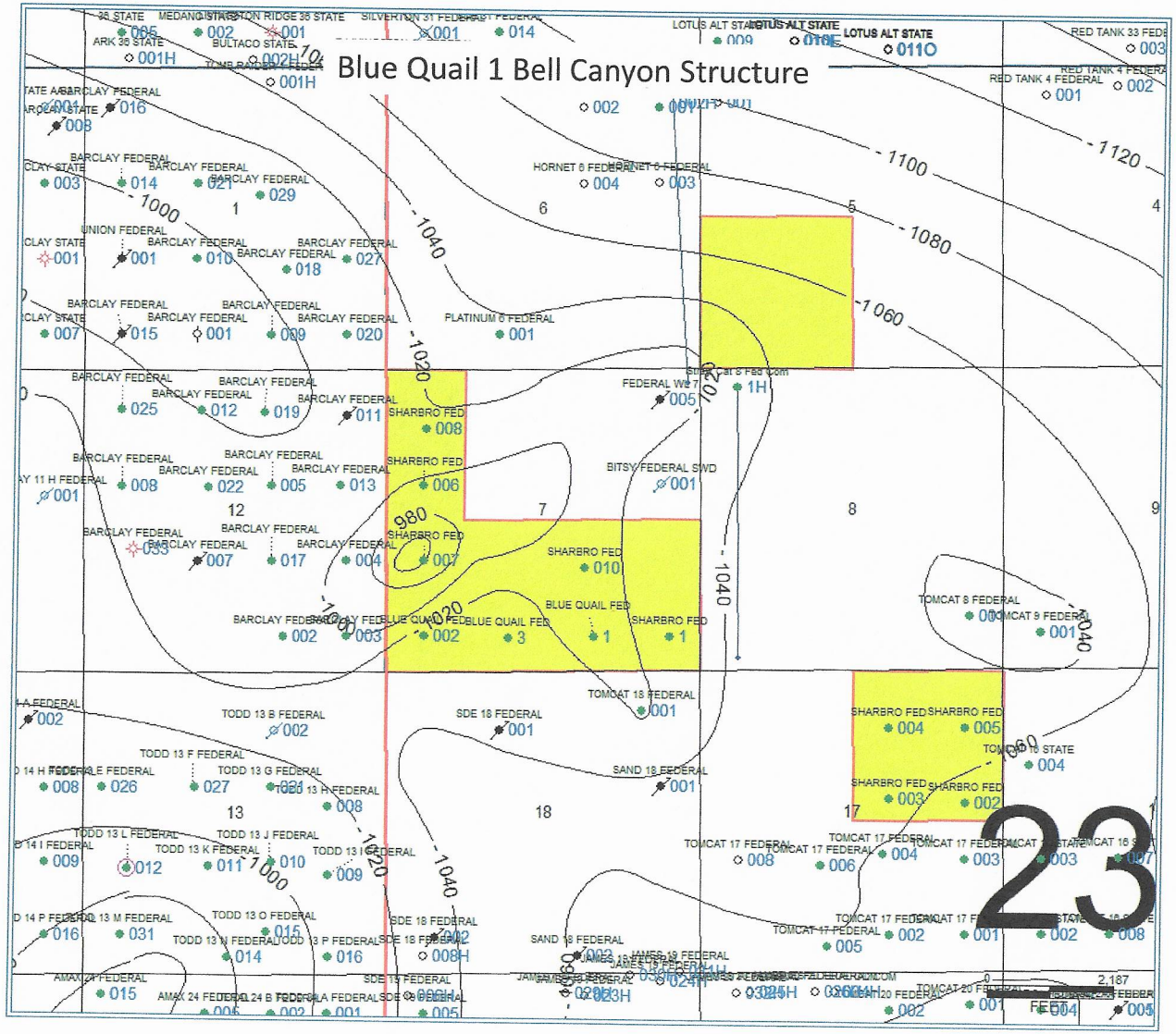
Anions	mg/l	meq/l	Cations	mg/l	meq/l
Chloride:	**105918.0**	**2987.56**	**Sodium:**	**51117.9**	**2223.5**
Bicarbonate:	**73.0**	**1.2**	**Magnesium:**	**2020.0**	**166.17**
Carbonate:	**0.0**	**0.**	**Calcium:**	**11404.0**	**569.06**
Sulfate:	**618.0**	**12.87**	**Strontium:**	**631.0**	**14.4**
Phosphate:			**Barium:**	**11.0**	**0.16**
Borate:			**Iron:**	**64.0**	**2.31**
Silicate:			Potassium:	993.0	25.4
			Aluminum:		
Hydrogen Sulfide:		0 PPM	Chromium:		
pH at time of sampling:		6	Copper:		
pH at time of analysis:			Lead:		
pH used in Calculation:		6	Manganese:	17.000	0.62
			Nickel:		

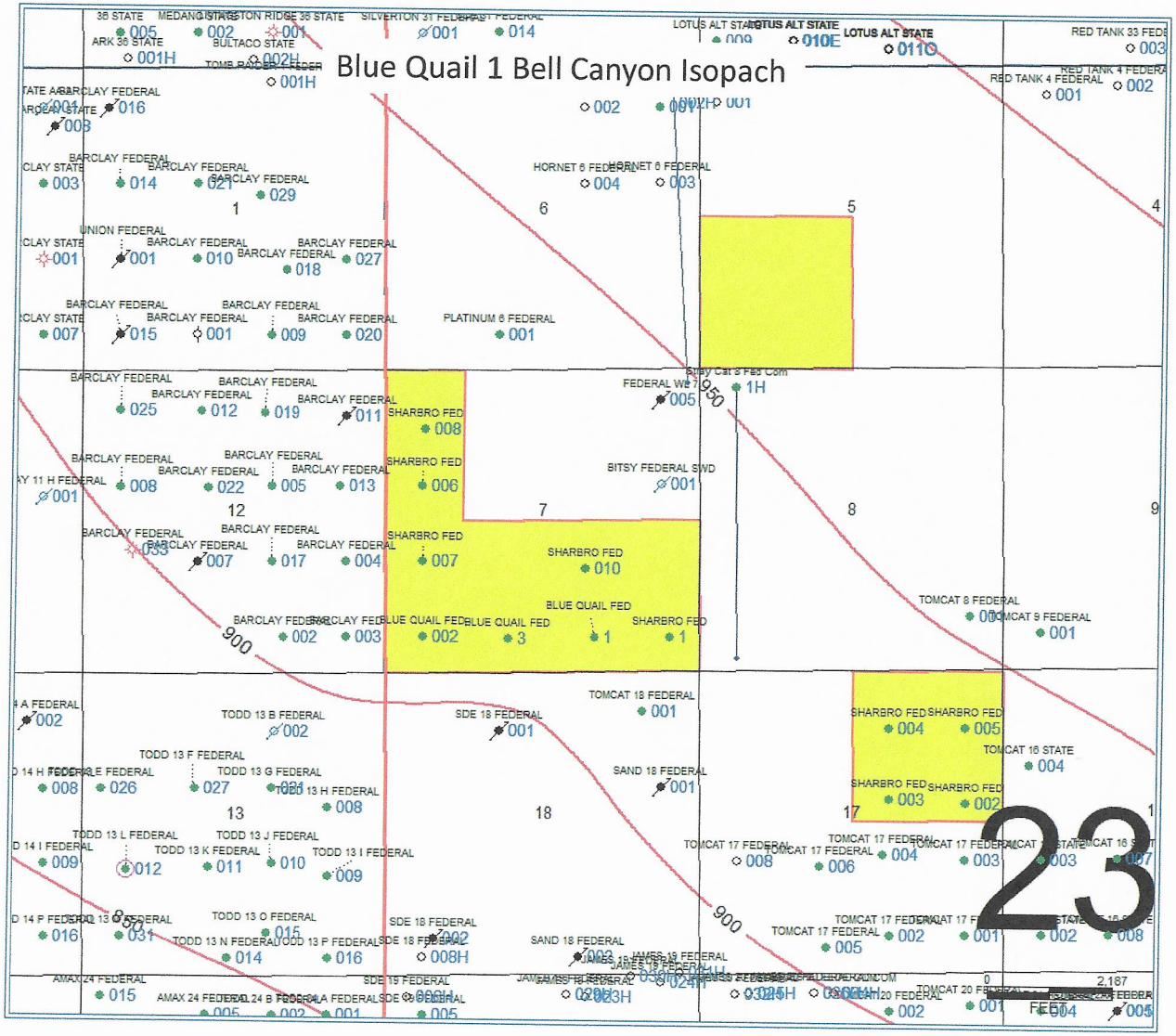
Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	-0.42	0.00	-0.27	0.00	-0.26	0.00	0.17	70.26	1.51	5.63	0.46
100	0	-0.33	0.00	-0.33	0.00	-0.26	0.00	0.15	63.44	1.32	5.63	0.57
120	0	-0.25	0.00	-0.38	0.00	-0.23	0.00	0.15	61.37	1.16	5.34	0.67
140	0	-0.15	0.00	-0.42	0.00	-0.17	0.00	0.15	62.85	1.01	5.34	0.77

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.


Blue Quail 1 Bell Canyon Structure
23


Blue Quail 1 Bell Canyon Isopach
900
23

From: Anderson Ward
To: "ken-mcqueen@outlook.com"
Subject: FW: OSE POD# C03749POD1
Date: Monday, July 1, 2019 9:22:07 AM

Ooops, seems I missed the "u" in McQueen- my apologies …

From: Anderson Ward
Sent: Tuesday, June 25, 2019 9:56 AM
To: 'Ken-mcqeen@outlook.com' <Ken-mcqeen@outlook.com>
Subject: OSE POD# C03749POD1

Hi Ken,

It was nice talking to you.

Based on the information you provided, well C03749POD1 is part of the DOE's well network (Well H-12), but is not in 7, 23S, 32E, it is actually in 15, 23S, 31E, which is about 2 miles away. The UTM Coordinates are: 13S, X: 616974, Y: 3575562. The Decimal Degree Coordinates (NAD83) are: Long: -103.757416, Lat: 32.311682. I don't know how to proceed.

Anderson

Dr. Anderson L. Ward
Office of Environmental Protection
U.S. Department of Energy, Carlsbad Field Office
Email: Anderson.Ward@cbfo.doe.gov
Office: 575-234-7018
Site: 575-234-8428
Cell: 575-706-5291

Affidavit of Publication

STATE OF NEW MEXICO)
) ss.
COUNTY OF LEA)

Joyce Clemens being first duly sworn on oath deposes and says that she is Advertising Manager of THE LOVINGTON LEADER, a once a week newspaper of general paid circulation published in the English language at Lovington, Lea County, New Mexico; that said newspaper has been so published in such county continuously and uninterruptedly for a period in excess of Twenty-six (26) consecutive weeks next prior to the first publication of the notice hereto attached as hereinafter shown; and that said newspaper is in all things duly qualified to publish legal notices within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico.

That the notice which is hereto attached, entitled Legal Notice was published in a regular and entire issue of THE LOVINGTON LEADER and not in any supplement thereof, for one (1) day(s), beginning with the issue of May 30, 2019, 2019 and ending with the issue of May 30, 2019 , 2019.

And that the cost of publishing said notice is the sum of $ 20.27 which sum has been (Paid) as Court Costs.

Joyce Clemens

Joyce Clemens, Advertising Manager
Subscribed and sworn to before me this 31st day of May , 2019.

Gina Fort

Gina Fort
Notary Public, Lea County, New Mexico
My Commission Expires June 30, 2022

Official Seal
GINA FORT
Notary Public
State of New Mexico
My Comm. Expires 6/30/22

LEGAL NOTICE

Foundation Energy Management, 5057 Keller Springs Rd., Suite 650, Addison, TX 75001 proposes to convert Blue Quail Federal #1, API 30-025-33222, located 660' FSL and 1980' FEL of Sec 7-T23S-R32E to non-commercial water disposal in Bell Canyon formation at 4,640'-4,850' with expected maximum pressure of 928 psi and maximum injection rate of 1,500 BWPD. Contact party is James Smith, HSE/Regulatory Supervisor at 918.526.5592. Interested parties may file objections or request for hearing to the Oil Conservation Division within 15 days.

Published in the Lovington Leader May 30, 2019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Return Receipt (electronic) $0.00
Certified Mail Restricted Delivery $0.00
Adult Signature Required $0.00
Adult Signature Restricted Delivery $
Postage $1.75
Total Postage and Fees $5.25
0501 06
Postmark Here
CORONADO STATION
AUG 01 2019
SANTA FE NM 87505
08/01/2019
Sent To
BANK OF AMERICA
Street and Apt. No., or PO Box No.
400 CAMINO DEL CABALLO
City, State, ZIP+4®
SEDONA AZ 86336-3010
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions
7018 1130 0000 6254 2796


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SANDY, UT 84092
OFFICIAL USE
Certified Mail Fee $3.50
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $0.00
Return Receipt (electronic) $0.00
Certified Mail Restricted Delivery $0.00
Adult Signature Required $0.00
Adult Signature Restricted Delivery $
Postage $1.75
Total Postage and Fees $5.25
0501 06
Postmark Here
CORONADO STATION
AUG 01 2019
SANTA FE NM 87505
08/01/2019
Sent To
JEAN C OAKASEN MEMORIAL LLC
Street and Apt. No., or PO Box No.
3818 E. KSEL DRIVE
City, State, ZIP+4®
SANDY, UT 84092-3587
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions
7018 1130 0000 6254 2802


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ROSWELL, NM 88201
OFFICIAL USE
Certified Mail Fee $3.50
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $0.00
Return Receipt (electronic) $0.00
Certified Mail Restricted Delivery $0.00
Adult Signature Required $0.00
Adult Signature Restricted Delivery $
Postage $1.75
Total Postage and Fees $5.25
0501 06
Postmark Here
CORONADO STATION SANTA FE, NM 87505
AUG 01 2019
08/01/2019
Sent To STRATA PRODUCTION CO.
Street and Apt. No., or PO Box No. 301 N SYCAMORE
City, State, ZIP+4 ROSWELL, NM 88201
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions
7018 1130 0000 6254 2666


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SANTA FE, NM 87508
OFFICIAL USE
Certified Mail Fee $3.50
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $0.00
Return Receipt (electronic) $0.00
Certified Mail Restricted Delivery $0.00
Adult Signature Required $0.00
Adult Signature Restricted Delivery $
Postage $1.75
Total Postage and Fees $5.25
0501 06
Postmark Here
CORONADO STATION SANTA FE, NM 87505
AUG 01 2019
08/01/2019
Sent To Tim SPISAK, State Dir.
Street and Apt. No., or PO Box No. 301 DINOSAUR TRAIL
City, State, ZIP+4 SF, NM 87508
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions
7018 1130 0000 6254 2826


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SANTA FE, NM 87504
OFFICIAL USE
Certified Mail Fee $3.50
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $0.00
Return Receipt (electronic) $0.00
Certified Mail Restricted Delivery $0.00
Adult Signature Required $0.00
Adult Signature Restricted Delivery $
Postage $1.75
Total Postage and Fees $5.25
0501 06
Postmark Here
CORONADO STATION SANTA FE, NM 87505
AUG 01 2019
08/01/2019
Sent To STEPHANIE G. RICHARD, Commissioner
Street and Apt. No., or PO Box No. P.O. Box 1148
City, State, ZIP+4 SF, NM 87501
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions
7018 1130 0000 6254 2819


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SPRING, TX 77389
OFFICIAL USE
Certified Mail Fee $3.50
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $0.00
Return Receipt (electronic) $0.00
Certified Mail Restricted Delivery $0.00
Adult Signature Required $0.00
Adult Signature Restricted Delivery $0.00
Postage $1.75
Total Postage and Fees $5.25
0501 06
Postmark Here
CORONADO STATION SANTA FE, NM 87505
AUG 01 2019
08/01/2019
Sent To XTO ENERGY INC.
Street and Apt. No., or PO Box No. 24717 SPRINKWOODS VILLAGE PKWY
City, State, ZIP+4 SPRING, TX 77389
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions
7018 1130 0000 6254 2703


U.S. Postal Service™
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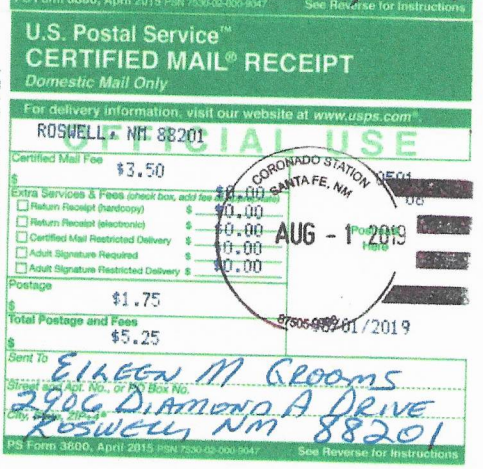
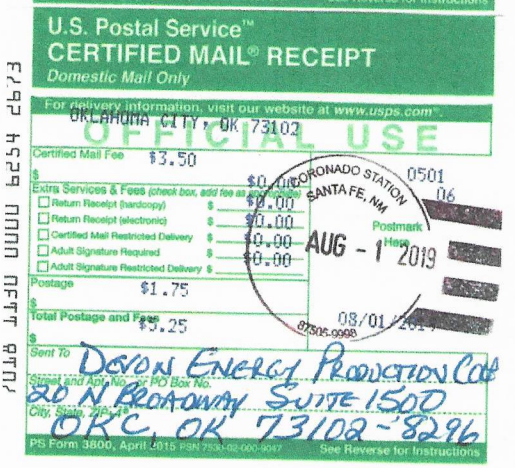
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
HENDERSON, NV 89074
OFFICIAL USE
Certified Mail Fee $3.50
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $0.00
Return Receipt (electronic) $0.00
Certified Mail Restricted Delivery $0.00
Adult Signature Required $0.00
Adult Signature Restricted Delivery $
Postage $1.75
Total Postage and Fees $5.25
0501 06
Postmark Here
CORONADO STATION SANTA FE, NM 87505
AUG 01 2019
08/01/2019
Sent To FRANKLIN J & ROXANNE HUGHES
Street and Apt. No., or PO Box No. 2738 CHOKECHERRY AVE
City, State, ZIP+4 HENDERSON, NV 89074
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions
7018 1130 0000 6254 2765


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
ROSWELL, NM 88201
OFFICIAL USE
Certified Mail Fee $3.50
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $0.00
Return Receipt (electronic) $0.00
Certified Mail Restricted Delivery $0.00
Adult Signature Required $0.00
Adult Signature Restricted Delivery $0.00
Postage $1.75
Total Postage and Fees $5.25
0501 06
Postmark Here
CORONADO STATION SANTA FE, NM
AUG - 1 2019
87505-0998
08/01/2019
Sent To EILEEN M GROOMS
Street and Apt. No., or PO Box No. 2906 DIAMOND A DRIVE
City, State, ZIP+4 ROSWELL, NM 88201
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions
7018 1130 0000 6254 2727


U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.
OKLAHOMA CITY, OK 73102
OFFICIAL USE
Certified Mail Fee $3.50
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) $0.00
Return Receipt (electronic) $0.00
Certified Mail Restricted Delivery $0.00
Adult Signature Required $0.00
Adult Signature Restricted Delivery $
Postage $1.75
Total Postage and Fees $5.25
0501 06
Postmark Here
CORONADO STATION SANTA FE, NM
AUG - 1 2019
87505-0998
08/01/2019
Sent To DEVON ENERGY PRODUCTION CO
Street and Apt. No., or PO Box No. 20 N BROADWAY SUITE 1500
City, State, ZIP+4 OKC, OK 73102-8296
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions
7018 1130 0000 6254 2673

347899-0501
(800)275-8777
08/01/2019 09:03 AM

Product	Qty	Unit Price	Price
First-Class Mail® Large Envelope (Domestic) (OKLAHOMA CITY, OK 73102) (Weight:0 Lb 5.90 Oz) (Estimated Delivery Date) (Monday 08/05/2019)	1	$1.75	$1.75
Certified (USPS Certified Mail #) (70181130000062542673)			$3.50
First-Class Mail® Large Envelope (Domestic) (ROSWELL, NM 88201) (Weight:0 Lb 5.70 Oz) (Estimated Delivery Date) (Monday 08/05/2019)	1	$1.75	$1.75
Certified (USPS Certified Mail #) (70181130000062542727)			$3.50
First-Class Mail® Large Envelope (Domestic) (HENDERSON, NV 89074) (Weight:0 Lb 5.70 Oz) (Estimated Delivery Date) (Monday 08/05/2019)	1	$1.75	$1.75
Certified (USPS Certified Mail #) (70181130000062542765)			$3.50
First-Class Mail® Large Envelope (Domestic) (SPRING, TX 77389) (Weight:0 Lb 5.70 Oz) (Estimated Delivery Date) (Monday 08/05/2019)	1	$1.75	$1.75
Certified (USPS Certified Mail #) (70181130000062542703)			$3.50
First-Class Mail® Large Envelope (Domestic) (SANTA FE, NM 87504) (Weight:0 Lb 5.70 Oz) (Estimated Delivery Date) (Saturday 08/03/2019)	1	$1.75	$1.75
Certified (USPS Certified Mail #) (70181130000062542819)			$3.50
First-Class Mail® Large Envelope (Domestic) (SANTA FE, NM 87508) (Weight:0 Lb 5.70 Oz) (Estimated Delivery Date) (Saturday 08/03/2019)	1	$1.75	$1.75
Certified (USPS Certified Mail #) (70181130000062542826)			$3.50
First-Class Mail® Large Envelope (Domestic) (ROSWELL, NM 88201) (Weight:0 Lb 5.70 Oz) (Estimated Delivery Date) (Monday 08/05/2019)	1	$1.75	$1.75
Certified (USPS Certified Mail #) (70181130000062542666)			$3.50
First-Class Mail® Large Envelope (Domestic) (SANDY, UT 84092) (Weight:0 Lb 5.70 Oz) (Estimated Delivery Date) (Monday 08/05/2019)	1	$1.75	$1.75
Certified (USPS Certified Mail #) (70181130000062542802)			$3.50
First-Class Mail® Large Envelope (Domestic) (SEDONA, AZ 86336) (Weight:0 Lb 5.70 Oz) (Estimated Delivery Date) (Monday 08/05/2019)	1	$1.75	$1.75
Certified (USPS Certified Mail #) (70181130000062542796)			$3.50
First-Class Mail® Large Envelope (Domestic) (SALT LAKE CITY, UT 84121) (Weight:0 Lb 5.70 Oz) (Estimated Delivery Date) (Monday 08/05/2019)	1	$1.75	$1.75
Certified (USPS Certified Mail #) (70181130000062542789)			$3.50
First-Class Mail® Large Envelope	1	$1.75	$1.75

(Domestic)
(SALT LAKE CITY, UT 84121)
(Weight:0 Lb 5.70 Oz)
(Estimated Delivery Date)
(Monday 08/05/2019)

Certified $3.50
(USPS Certified Mail #)
(70181130000062542772)

First-Class Mail® 1 $1.75 $1.75
Large Envelope
(Domestic)
(ROSWELL, NM 88201)
(Weight:0 Lb 5.70 Oz)
(Estimated Delivery Date)
(Monday 08/05/2019)

Certified $3.50
(USPS Certified Mail #)
(70181130000062542758)

First-Class Mail® 1 $1.75 $1.75
Large Envelope
(Domestic)
(ROSWELL, NM 88201)
(Weight:0 Lb 5.70 Oz)
(Estimated Delivery Date)
(Monday 08/05/2019)

Certified $3.50
(USPS Certified Mail #)
(70181130000062542734)

First-Class Mail® 1 $1.75 $1.75
Large Envelope
(Domestic)
(ROSWELL, NM 88201)
(Weight:0 Lb 5.70 Oz)
(Estimated Delivery Date)
(Monday 08/05/2019)

Certified $3.50
(USPS Certified Mail #)
(70181130000062542741)

First-Class Mail® 1 $1.75 $1.75
Large Envelope
(Domestic)
(RUIDOSO, NM 88345)
(Weight:0 Lb 5.70 Oz)
(Estimated Delivery Date)
(Saturday 08/03/2019)

Certified $3.50
(USPS Certified Mail #)
(70181130000062542697)

Total: $78.75

Debit Card Remit'd $78.75
(Card Name:VISA)
(Account #:XXXXXXXXXXXX7487)
(Approval #)
(Transaction #:418)
(Receipt #:023685)
(Debit Card Purchase:$78.75)
(Cash Back:$0.00)
(AID:A0000000980840 Chip)
(AL:US DEBIT)
(PIN:Verified)

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(2USPS) to get the latest status.
Standard Message and Data rates may
apply. You may also visit www.usps.com
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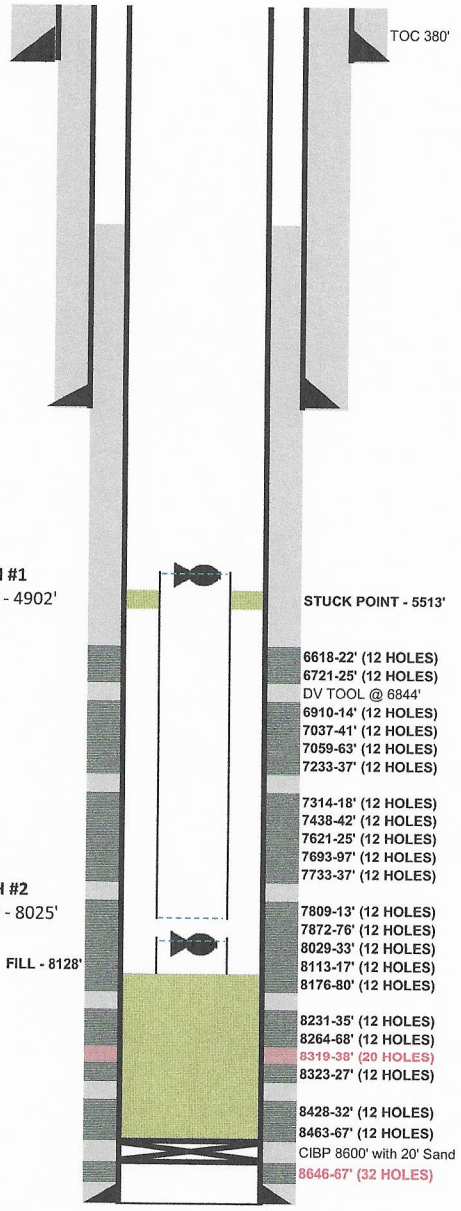
your mobile device:

or call 1-800-410-7420.

Foundation Energy Management, LLC
Current WBD

Well / Battery	Prospect Name		Total Depth	Current Status
Blue Quail Federal #1	SWD CONVERSION		8850	SI
API Number	**Sec-Twn-Rng**		**Producing Horizon**	**County & State**
30-025-33222	7H-23S-32E		DELAWARE / BRUSHY CANYON	LEA, NEW MEXICO

Wellbore Diagram



Tubing Detail
2-7/8 inch(OD)
(weight)
N80 grade

Surface Casing
13-3/8" inch (OD)
48 # (weight)
H-40 grade
850 depth from KB
surface cement top
600 sacks of cement
17-1/2" inch (OD) HOLE SIZE

Intermediate Casing
8-5/8" inch (OD)
32 # (weight)
J-55 grade
4527 depth from KB
surface cement top
1600 sacks of cement
12-1/4 inch (OD) HOLE SIZE

Production Casing
5-1/2" inch (OD)
17 # (weight)
J55/N80 grade
8849 depth from KB
7-7/8" inch (OD) HOLE SIZE

450 CMT STAGE 1 (SX)
6844 DV TOOL
900 CMT STAGE 2 (SX)
1906 TOC (CALC)

Notes:

OCT '17
FISH #1 - CHEM CUT TBG
TOF - 4902'
BOF - 8024' (CHEM CUT)
STUCK POINT - 5513'

FISH #2 - ESP/TBG
TOF - 8025' (CHEM CUT)
BOF - FILL

MARCH '13
PERF 6618-7237'

PBTD:8128 (10/17)
TD: 8850

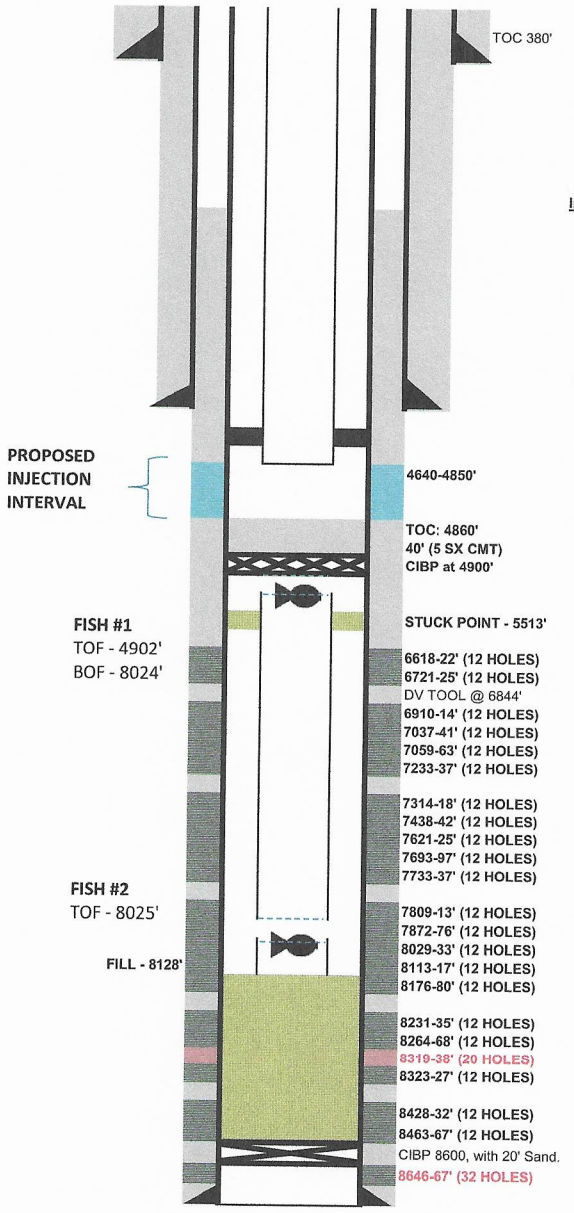
Foundation Energy Management, LLC
Proposed WBD

Well / Battery	Prospect Name		Total Depth	Current Status
Blue Quail Federal #1	SWD CONVERSION		8850	SI
API Number	**Sec-Twn-Rng**		**Producing Horizon**	**County & State**
30-025-33222	7H-23S-32E		DELAWARE / BRUSHY CANYON	LEA, NEW MEXICO

Wellbore Diagram

Updated Date: 5/29/2019

Tubing Detail
2-7/8 inch(OD)
(weight)
N80 grade



Surface Casing
13-3/8" inch (OD)
48 # (weight)
H-40 grade
850 depth from KB
surface cement top
600 sacks of cement
17-1/2" inch (OD) HOLE SIZE

Intermediate Casing
8-5/8" inch (OD)
32 # (weight)
J-55 grade
4527 depth from KB
surface cement top
1600 sacks of cement
12-1/4 inch (OD) HOLE SIZE

Production Casing
5-1/2" inch (OD)
17 # (weight)
J55/N80 grade
8849 depth from KB
7-7/8" inch (OD) HOLE SIZE

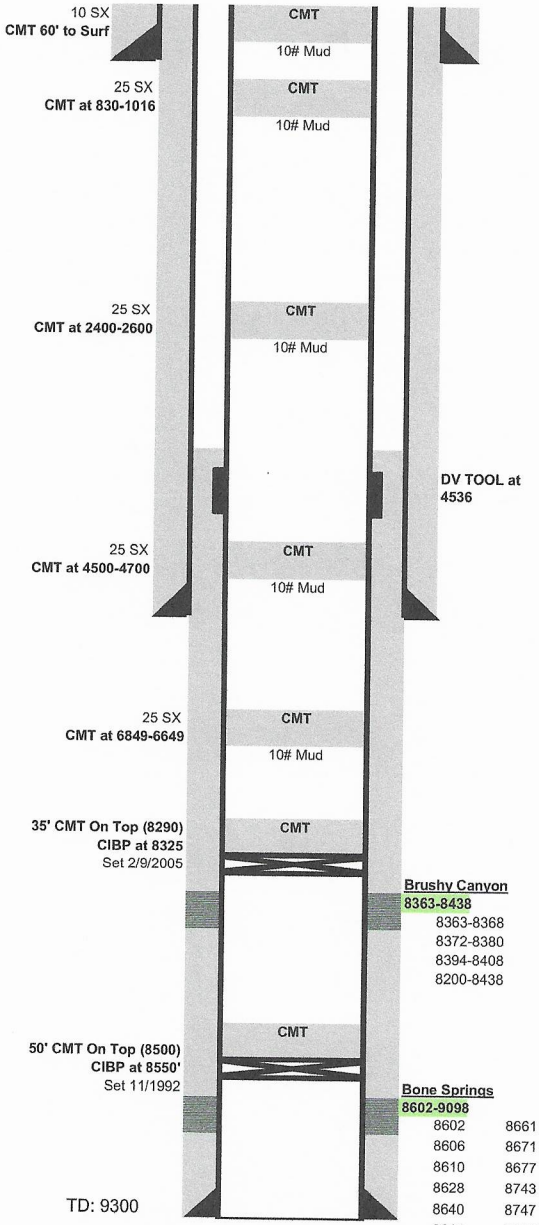
450 CMT STAGE 1 (SX)
6844 DV TOOL
900 CMT STAGE 2 (SX)
1906 TOC (CALC)

PBTD:8128 (10/17)
TD: 8850

SDE 18 FEDERAL

Well / Battery	API Number		Total Depth	Sec - Twn - Rng
SDE 18 Federal	30-025-25622		9300	18C- 23S - 32E

WELLBORE DIAGRAM



Surface Casing
11- 3/4 inch (OD)
42 # (weight)
996 depth from KB
surface cement top
900 sacks of cement
15 inch (OD) HOLE SIZE

Intermediate Casing
8-5/8" inch (OD)
24,32 # (weight)
4650 depth from KB
surface cement top
220 sacks of cement
10 5/8 inch (OD) HOLE SIZE

Production Casing
5-1/2" inch (OD)
15.5,17 # (weight)
9298 depth from KB
cement top
2150 sacks of cement
7-7/8" inch (OD) HOLE SIZE

Brushy Canyon
8363-8438
8363-8368
8372-8380
8394-8408
8200-8438

Bone Springs
8602-9098

8602	8661	8888	8986	9058
8606	8671	8945	8990	9068
8610	8677	8950	8994	9074
8628	8743	8966	9010	9080
8640	8747	8969	9014	9098
8644	8776	8976	9030	
8656	8780	8980	9045	

Additional Information

Notice, AOR Wells and Map

Well	Type/Status	Date Drilled	Location	Depth
Blue Quail Federal 3	Active oil	10/18/2010	32.3133400, -103.71608	8800
Sharbro Federal 1	Active oil	8/30/1995	32.31341, -103.7069200	10630
Sharbro Federal 10	Active oil	8/28/2011	32.3166894, -103.7116847	8900
Tomcat 18 Federal 1	Active oil	5/9/1996	32.3098622, -103.7084537	9349
SDE 18 Federal 1	Plugged Oil	11/7/1979	32.3089112, -103.7165412	9300
Stray Cat 8 Federal Com 1H	Active oil	8/23/2016	32.3123755, -103.7031042	10450

STATE OF New Mexico §
§
COUNTY OF Santa Fe §

AFFIDAVIT OF SERVICE

Before me, the undersigned authority, personally appeared William E. Hackett, who, after being duly sworn by me, swore as follows:

My name is William E. Hackett, I am over the age of eighteen, of sound mind and capable of making this affidavit.

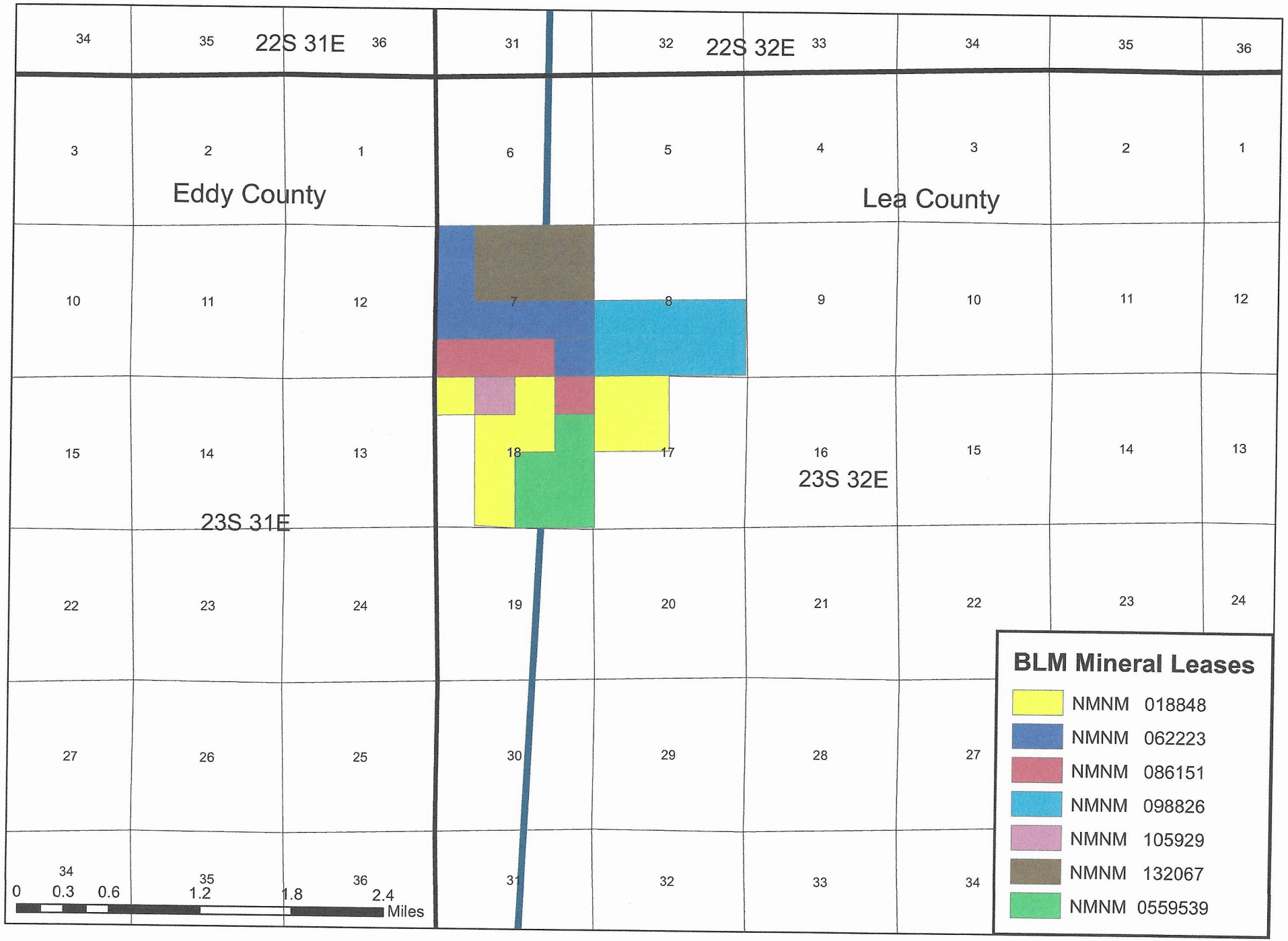
On August 1st, 2019, I personally served the Bureau of Land Management and the New Mexico State Land Office with the Application for Authorization to Inject for Foundation Energy Management, LLC. The Bureau of Land Management and the New Mexico State Land Office were served with this Application pursuant to 19.15.2.7 NMAC.

Affiant

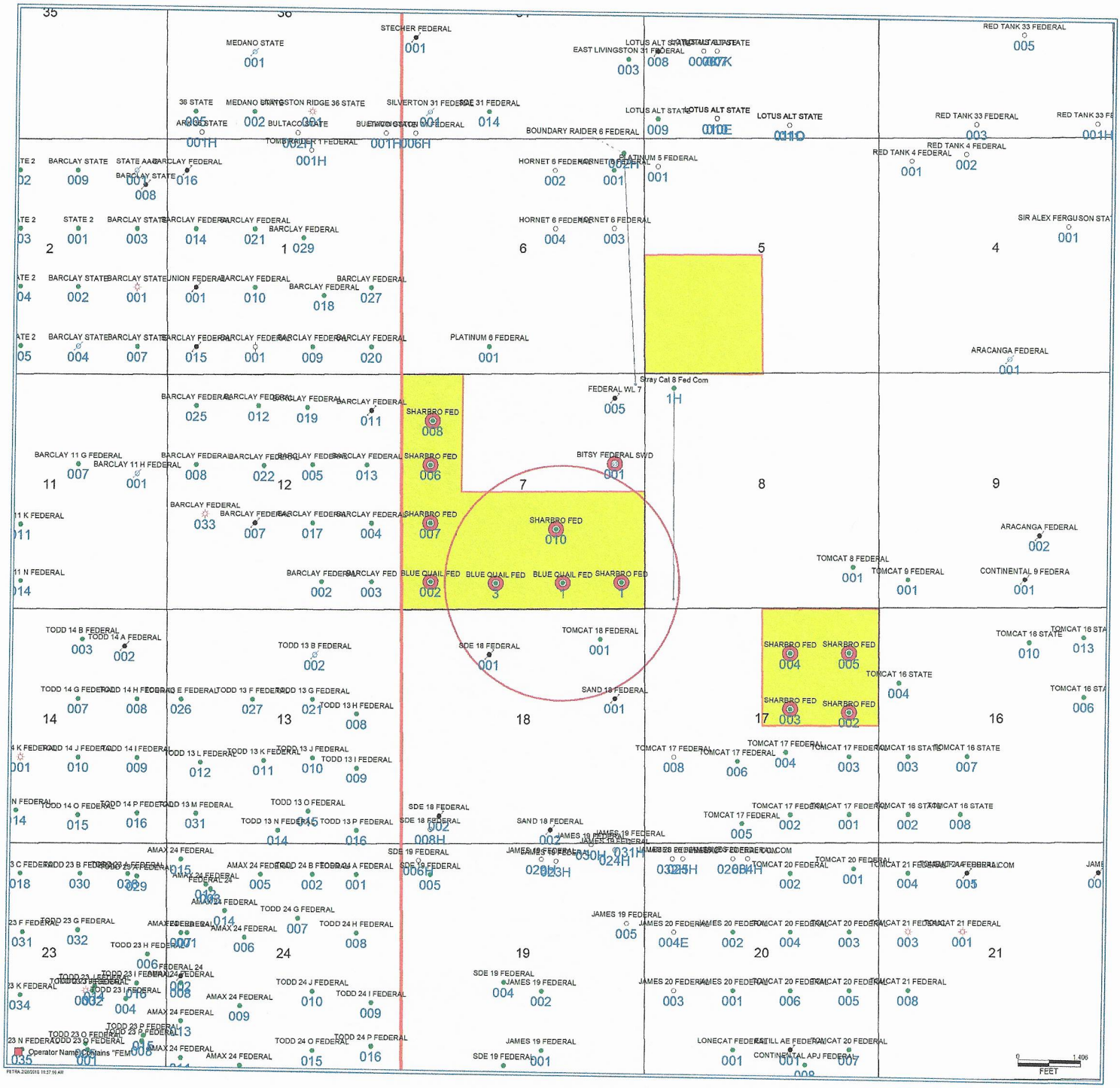
This instrument was acknowledged before me on 21 day of JANUARY, 2020, by JOHN TODD.

Notary Public State of NM
My commission expires: 8/19/23

OFFICIAL SEAL
JOHN TODD
NOTARY PUBLIC, STATE OF NEW MEXICO
MY COMMISSION EXPIRES 8/19/23


22S 31E
22S 32E
Eddy County
Lea County
23S 31E
23S 32E
34 35 36 31 32 33 34 35 36
3 2 1 6 5 4 3 2 1
10 11 12 7 8 9 10 11 12
15 14 13 18 17 16 15 14 13
22 23 24 19 20 21 22 23 24
27 26 25 30 29 28 27
34 35 36 31 32 33 34
0 0.3 0.6 1.2 1.8 2.4 Miles
BLM Mineral Leases
NMNM 018848
NMNM 062223
NMNM 086151
NMNM 098826
NMNM 105929
NMNM 132067
NMNM 0559539

OGL Serial #	Aliquot	Section	Township	Range	Operating Rights / Leaseholder	Surface Owner
NMNM 062223	Lots 1, 2, 3, NESW, N2SE, SESE	7	23S	32E	Foundation Energy Fund V-B Holding, LLC	BLM / USA
NMNM 132067	NE, E2NW	7	23S	32E	Devon Energy Production Co	BLM / USA
NMNM 086151	Lot 4, SESW, SWSE	7	23S	32E	Devon Energy Production Co	BLM / USA
	NENE	18				
NMNM 018848	NW	17	23S	32E	Devon Energy Production Co	BLM / USA
	Lot 1, W2NE, E2W2	18				
NMNM 105929	NENW	18	23S	32E	Strata Production Company	BLM / USA
NMNM 098826	S2	8	23S	32E	Devon Energy Production Co	BLM / USA
NMNM 0 559539	SENE, SE	18	23S	32E	XTO Energy Incorporated	BLM / USA


35
36
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21
STECHER FEDERAL 001
MEDANO STATE 001
EAST LIVINGSTON 31 FEDERAL 003
LOTUS ALT STATE 009
LOTUS ALT STATE 010E
LOTUS ALT STATE 011D
RED TANK 33 FEDERAL 005
RED TANK 33 FEDERAL 003
RED TANK 4 FEDERAL 001
RED TANK 4 FEDERAL 002
SILVERTON 31 FEDERAL 001
SDE 31 FEDERAL 014
BOUNDARY RAIDER 6 FEDERAL
HORNET 6 FEDERAL 002
HORNET 6 FEDERAL 001
PLATINUM 5 FEDERAL 001
HORNET 6 FEDERAL 004
HORNET 6 FEDERAL 003
SIR ALEX FERGUSON STA 001
BARCLAY FEDERAL 016
BARCLAY FEDERAL 021
BARCLAY FEDERAL 029
BARCLAY FEDERAL 018
BARCLAY FEDERAL 027
PLATINUM 6 FEDERAL 001
ARACANGA FEDERAL 001
Stray Cat 8 Fed Com 1H
FEDERAL WL 7 005
SHARBRO FED 008
BARCLAY FEDERAL 025
BARCLAY FEDERAL 012
BARCLAY FEDERAL 019
BARCLAY FEDERAL 011
BITSY FEDERAL SWD 001
BARCLAY 11 G FEDERAL 007
BARCLAY 11 H FEDERAL 001
BARCLAY FEDERAL 008
BARCLAY FEDERAL 022
BARCLAY FEDERAL 005
BARCLAY FEDERAL 013
SHARBRO FED 006
BARCLAY FEDERAL 033
BARCLAY FEDERAL 007
BARCLAY FEDERAL 017
BARCLAY FEDERAL 004
SHARBRO FED 007
SHARBRO FED 010
ARACANGA FEDERAL 002
TOMCAT 8 FEDERAL 001
TOMCAT 9 FEDERAL 001
CONTINENTAL 9 FEDERA 001
BARCLAY FEDERAL 002
BARCLAY FED 003
BLUE QUAIL FED 002
BLUE QUAIL FED 3
BLUE QUAIL FED 1
SHARBRO FED 1
TODD 14 B FEDERAL 003
TODD 14 A FEDERAL 002
TODD 13 B FEDERAL 002
SDE 18 FEDERAL 001
TOMCAT 18 FEDERAL 001
SHARBRO FED 004
SHARBRO FED 005
TOMCAT 16 STATE 004
TOMCAT 16 STATE 010
TOMCAT 16 STATE 013
TOMCAT 16 STATE 006
SAND 18 FEDERAL 001
SHARBRO FED 003
SHARBRO FED 002
TODD 14 G FEDERAL 007
TODD 14 H FEDERAL 008
TODD 13 E FEDERAL 026
TODD 13 F FEDERAL 027
TODD 13 G FEDERAL 021
TODD 13 H FEDERAL 008
TOMCAT 17 FEDERAL 008
TOMCAT 17 FEDERAL 006
TOMCAT 17 FEDERAL 004
TOMCAT 17 FEDERAL 003
TOMCAT 16 STATE 003
TOMCAT 16 STATE 007
TODD 14 K FEDERAL 001
TODD 14 J FEDERAL 010
TODD 14 I FEDERAL 009
TODD 13 L FEDERAL 012
TODD 13 K FEDERAL 011
TODD 13 J FEDERAL 010
TODD 13 I FEDERAL 009
TODD 14 O FEDERAL 015
TODD 14 P FEDERAL 016
TODD 13 M FEDERAL 031
TODD 13 O FEDERAL 015
TODD 13 N FEDERAL 014
TODD 13 P FEDERAL 016
SDE 18 FEDERAL 002
SDE 18 FEDERAL 008H
SAND 18 FEDERAL 002
JAMES 19 FEDERAL 030H
JAMES 19 FEDERAL 031H
TOMCAT 17 FEDERAL 005
TOMCAT 17 FEDERAL 002
TOMCAT 17 FEDERAL 001
TOMCAT 16 STATE 002
TOMCAT 16 STATE 008
AMAX 24 FEDERAL 015
AMAX 24 FEDERAL 005
TODD 24 B FEDERAL 002
TODD 24 A FEDERAL 001
SDE 19 FEDERAL 006H
SDE 19 FEDERAL 005
JAMES 19 FEDERAL 028H
JAMES 19 FEDERAL 023H
TOMCAT 20 FEDERAL 002
TOMCAT 20 FEDERAL 001
TOMCAT 21 FEDERAL 004
TOMCAT 21 FEDERAL 005
TODD 23 C FEDERAL 018
TODD 23 B FEDERAL 030
TODD 23 A FEDERAL 029
AMAX 24 FEDERAL 012
AMAX 24 FEDERAL 014
AMAX 24 FEDERAL 007
TODD 24 G FEDERAL 006
TODD 24 H FEDERAL 008
JAMES 19 FEDERAL 005
JAMES 20 FEDERAL 004E
JAMES 20 FEDERAL 002
TOMCAT 20 FEDERAL 004
TOMCAT 20 FEDERAL 003
TOMCAT 21 FEDERAL 003
TOMCAT 21 FEDERAL 001
TODD 23 F FEDERAL 031
TODD 23 G FEDERAL 032
TODD 23 H FEDERAL 007
AMAX 24 FEDERAL 006
TODD 23 E FEDERAL 006
FEDERAL 24 002
TODD 23 I FEDERAL 016
TODD 23 K FEDERAL 034
AMAX 24 FEDERAL 004
AMAX 24 FEDERAL 009
TODD 24 J FEDERAL 010
TODD 24 I FEDERAL 009
SDE 19 FEDERAL 004
JAMES 19 FEDERAL 002
JAMES 20 FEDERAL 003
JAMES 20 FEDERAL 001
TOMCAT 20 FEDERAL 006
TOMCAT 20 FEDERAL 005
TOMCAT 21 FEDERAL 008
TODD 23 O FEDERAL 035
TODD 23 P FEDERAL 008
AMAX 24 FEDERAL 013
AMAX 24 FEDERAL 015
TODD 24 O FEDERAL 015
TODD 24 P FEDERAL 016
JAMES 19 FEDERAL 001
LONECAT FEDERAL 001
CONTINENTAL APJ FEDERAL 007
Operator Name Contains "FEM
0
1,406
FEET

Form 3160-4
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD-HOBBS

FORM APPROVED
OMB NO. 1004-0137
Expires July 31, 2010

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. Lease Serial No. NMNM 86151

1a. Type of Well [X] Oil Well [ ] Gas Well [ ] Dry Other

b. Type of Completion: [X] New Well [ ] Work Over [ ] Deepen [ ] Plug Back [ ] Diff.Resvr,. Other

6. If Indian, Allotee or Tribe Name

7. Unit or CA Agreement Name and No.

2. Name of Operator: Enervest Operating, LLC

8. Lease Name and Well No.: Blue Quail Federal #3

3. Address: 1001 Fannin St. Ste 800 Houston, Tx 77002

3a. Phone No. (include area code): 713-496-6530

9. API Well No.: 30-025-39818

4. Location of Well (Report location clearly and in accordance with Federal requirements)*

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HOBBSOCD

At surface: SE/4 SW/4 660' FSL & 1,980' FWL

At top prod. interval reported below

At total depth: SE/4 SW/4 600' FSL & 1,980' FWL

10. Field and Pool, or Exploratory: Sand Dunes (Bone Springs)

11. Sec., T., R., M., or Block and Survey or Area: UL N, Sec 07, 23 S, 32 E

12. County or Parish: Lea

13. State: N M

14. Date Spudded	15. Date T.D. Reached	16. Date Completed	17. Elevations (DF, RKB, RT, GL)*
10/18/2010	10/22/2010	[ ] D & A [X] Ready to Prod. 12/16/2010	3,548 GL

18. Total Depth: MD / TVD	19. Plug Back T.D.: MD / TVD	20. Depth Bridge Plug Set: MD / TVD
8,800 / 8,800	8 664 / 8,664	

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)

GR/CCL/CBL

22. Was well cored? [ ] No [X] Yes (Submit analysis)
Was DST run [ ] No [X] Yes (Submit report)
Directional Survey? [ ] No [X] Yes (Submit copy)

23. Casing and Liner Record (Report all strings set in well)

Hole Size	Size/Grade	Wt.(#ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No.of Sks. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
17 1/2	13 3/8								
	H-40	48	0	943		800 'C'		Surf	0
12 1/4	8 5/8								
	J-55	32	0	4,555		1,230 'C'		Surf	0
7 7/8	5 1/2								
	N-80	17	0	8,800	6,000	660 'C'		2936	0

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2 7/8	8,622							

25. Producing Intervals / 26. Perforation Record

	Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A)	Bone Springs	8,522		8,610 - 8,624	0.4	30	Open
B)							
C)							
D)							

27. Acid, Fracture, Treatment, Cement Squeeze, Etc.

Depth Interval	Amount and Type of Material
8,610 - 8,624	3,000 gal 7.5% NEFE acid;
	Frac w/ 121,128 gal 25# BXL & 20,538 gal 10# Lincar;
	& 123,500# 20/40 white sand + 54,647# 20/40 SLC Resin Coated Sd;

28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
12/16/10	01/07/11	24	→	50	340	6			Pumping
Choke Size	**Tbg. Press. Flwg. SI**	**Csg. Press.**	**24 Hr.**	**Oil BBL**	**Gas MCF**	**Water BBL**	**Gas: Oil Ratio**	**Well Status**	
64/64	30	0	→	50	340	6			Producing

28a. Production-Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						
Choke Size	**Tbg. Press. Flwg. SI**	**Csg. Press.**	**24 Hr.**	**Oil BBL**	**Gas MCF**	**Water BBL**	**Gas: Oil Ratio**	**Well Status**	
			→						

(See instructions and spaces for additional data on page 2)

ACCEPTED FOR RECORD
APR 12 2011
/s/ Dustin Winkler
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

APR 12 2011

28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	**Tbg. Press. Flwg. SI**	**Csg. Press.**	**24 Hr. →**	**Oil BBL**	**Gas MCF**	**Water BBL**	**Gas: Oil Ratio**	**Well Status**	

28c. Production-Interval D

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	**Tbg. Press. Flwg. SI**	**Csg. Press.**	**24 Hr. →**	**Oil BBL**	**Gas MCF**	**Water BBL**	**Gas: Oil Ratio**	**Well Status**	

29. Disposition of Gas *(Sold,used for fuel, vented, etc.)* Sold

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top Meas.Depth
Lamar Lime	4,572				
Ramsey Sd	4,608				
Cherry Can.	5,511				
Brushy Can.	8,235				
Bone Spr.	8,522				

RECEIVED
2011 FEB 10 PM 3:13
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

32. Additional remarks (include plugging procedure):

33. Indicate which items have bee attached by placing a check in the appropriate boxes:

☐ Electrical/Mechanical Logs (1 full set req'd) ☐ Geologic Report ☐ DST Report ☐ Directional Survey
☐ Sundry Notice for plugging and cement verification ☐ Core Analysis ☐ Other:

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name *(please print)* Ronnie L. Young Title Compliance Supervisor

Signature Ronnie L Young Date 1-8-11

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 3)

WELL NAME AND NUMBER **Blue Quail Federal #3** 30-025-39818
LOCATION **Section 7, T23S, R32E, 660 FSL, 1980 FWL, Lea County**
OPERATOR **Enervest Ltd.**
DRILLING CONTRACTOR *United Drilling, Inc.*

The undersigned hereby certifies that he is an authorized representative of the drilling contractor who drilled the above described well and had conducted deviation test and obtained the following results:

Degrees @ Depth	Degrees @ Depth	Degrees @ Depth
.7 @ 360'		
.5 @ 933'		
.6 @ 1902'		
1.0 @ 2885'		
3 @ 3907'		
2.1 @ 4057'		
.5 @ 5035'		
0 @ 5736'		
.2 @ 6528'		
.5 @ 7383'		
.7 @ 8175'		
.7 @ 8733'		

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DEC 21 2010
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Drilling Contractor- **UNITED DRILLING, INC.**

By: Luisa Noriega
(Luisa Noriega)

Title: Assistant Office Manager

Subscribed and sworn to before me this 10th day of November, 2010.

Carlos Martin
Notary Public

My Commission Expires: 10-8-12

Chaves New Mexico
County State

APR 12 2011

5-USGS-HOBBS, 1-R.J. STARRAK-TULSA, 1-A.B. CARY-MIDLAND, 1-H.COX, [illegible]
Form 9-330 (Rev. 5-63) 1,BH, FLD CLK, 1-BB,OFC [illegible]CH.

COPY TO O. C. C.

SUBMIT IN DUPLICATE (See other instructions on reverse side)

Form approved. Budget Bureau No. 42-R355.5.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: NM-18848

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: –

7. UNIT AGREEMENT NAME: –

8. FARM OR LEASE NAME: SDE 18 Fed.

9. WELL NO.: 1

10. FIELD AND POOL, OR WILDCAT: Sand Dunes

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 18, T-23S, R-32E

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

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JAN - 1980
U. S. GEOLOGICAL SURVEY
HOBBS, NEW MEXICO

2. NAME OF OPERATOR: Getty Oil Company

3. ADDRESS OF OPERATOR: P. O. Box 730, Hobbs, NM 88240

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: Ltr. C, 1980' FWL, 990' FNL
At top prod. interval reported below
At total depth

14. PERMIT NO. | DATE ISSUED

12. COUNTY OR PARISH: Lea | 13. STATE: NM

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
11-7-79	11-28-79	12-16-79	3555' GR	–

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
9300'	–		→	0-9300'	–

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 8602-9098' - Bone Springs

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: Schlumberger - CNL-Density 0-9300'; DLL-MSFL 9300-4650'; BHC-Sonic 9300-4650'. Dresser Atlas - CBL & Spectrolog

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
11 3/4	42#	966	15	900 sxs	
8 5/8	24 & 32#	4650	10 5/8	2250 sxs	
5 1/2	17 & 15.50#	9300	7 7/8	2150 sxs	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 7/8	8501	8501

31. PERFORATION RECORD (*Interval, size and number*)
8602,06,10,28,40,44,56,61,71,77,8743,47, 76,80, 8888, 8945,50,66,69,76,80,86,90,94, 9010,14,30,45,58,68,74,80, & 98' = 33 (.34") holes

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
8602-9098'	7000 gals. 15% NE and 50 ball sealers, 75,000 gals. 2% HCl, 98,250# 20/40 sand, 12 ball sealers, 750# benzoic acid flake and 1875# salt.

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
12-16-79	Flowing	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
12-27-79	24	1/4"		52	36	0	692/1

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
150#	–		52	36	0	40.1

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*): Vented

TEST WITNESSED BY

35. LIST OF ATTACHMENTS: Deviation Schedule

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Dale R. Crockett TITLE Area Superintendent DATE 1-2-80

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "*Sacks Cement*": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
Bone Springs	8602	8780 = 15'	
Bone Springs	8944	9100 = 57'	

38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
Rustler	913	
Delaware	4580	
Cherry Canyon	5672	
Brushy Canyon	6789	
Bone Springs	8501	

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1980
OIL CONSERVATION DIV

☆ U.S. GOVERNMENT PRINTING OFFICE: 1974-780-680/VIII-238

Form 3160-5
(JUNE 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

N.M. Oil Cons. Division
1625 N. French Dr.
Hobbs, NM 88240

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT-" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well
   [X] Oil Well [ ] Gas Well [ ] Other
2. Name of Operator: STRATA PRODUCTION COMPANY
3. Address and Telephone No.: P. O. Box 1030, Roswell, New Mexico 88202-1030 505-622-1127
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 990' FNL & 1980' FWL, Section 18-23S-32E

5. Lease Designation and Serial No.: NM-18848
6. If Indian, Allottee or Tribe Name:
7. If Unit or CA, Agreement Designation:
8. Well Name and No.: SDE 18 Federal #1
9. API Well No.: 30-025-25622
10. Field and Pool, or Exploratory Area: Sand Dunes Delaware East
11. County or Parish, State: Lea County, New Mexico

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[X] Notice of Intent	[X] Abandonment	[ ] Change of Plans
[ ] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[X] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[ ] OTHER _____	[ ] Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Plugging Procedure:

CIBP @ 8325' with 35' of cement. 100' plug 6749' - 6849', 15 sacks. 100' plug 4600' - 4700', 15 sacks. Tag plug. 100' plug 2500' - 2600', 15 sacks. 100' plug 916'-1016'. Tag plug. 50' surface plug, 10 sacks. Install dry hole marker, remove equipment, clean location and rip and reseed location.

APPROVED
MAY 16 2002
GARY GOURLEY
PETROLEUM ENGINEER

14. I hereby certify that the foregoing is true and correct
Signed Kelly McBride Title Production Records Date 05/13/2002

(This space for Federal or State office use)
Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

* See Instruction on Reverse Side

F3160-5

C GWW

EXISTING

SDE "18" FED. #1
990' FNL & 1980' FWL
SEC. 18C-T23S-R32E
LEA COUNTY, NM
API # 30-025-25622
SPUD DATE: 11-7-79
LEASE: NM-18848

PROPOSED

15" HOLE

RUSTLER 913'

11 3/4" @ 966'
900 SX.
CIRC.

10 5/8" HOLE

DEKAWARE 4580'

8 5/8" @4650'
2250 SX.
CIRC.

PLUGGING PROCEDURE

1. CIBP @ 8325' W/ 35' OF CEMENT
2. 100' PLUG 6749'-6849', 15 SX.
3. 100' PLUG 4600'-4700', 15 SX.. TAG PLUG
4. 100' PLUG 2500'-2600', 15 SX.
5. 100' PLUG 916'-1016', TAG PLUG
6. 50' SURFACE PLUG, 10 SX
7. INSTALL DRY HOLE MARKER
8. REMOVE EQUIPMENT
9. CLEAN LOCATION
10. RIP AND RESEED LOCATION

CHERRY CANYON 5672'

BRUSHY CANYON 6789'

8363-68', 8372-80', 8394-8408', 8420-38'

BONE SPRING 8501'

CIBP @ 8550' W/ 50' OF CEMENT ON TOP, PBTD 8500'

8602-77', 8743-80', 8888, 8945-9098'

PBTD 9256'
51/2" 15.5 & 17 #/FT. K-55 CASING @ 9300'
CEMENTED W/ 2150 SX., CIRC

(November 1983)
(Formerly 9-330)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved. Budget Bureau No. 1004-0137 Expires August 31, 1985

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: 622223

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEP EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: MYCO INDUSTRIES, INC.

8. FARM OR LEASE NAME: SHARBRO FEDERAL

3. ADDRESS OF OPERATOR: P.O. BOX 840, Artesia, NM 88210 505-748-4260

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface 660' FSL & 660' FEL
At top prod. interval reported below
At total depth

10. FIELD AND POOL, OR WILDCAT: SAND DUNES BONE SPRING

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 7-T23S-R32E

CERTIFIED RETURN: Z 061 313 140

14. PERMIT NO.: API 30-015-33054 | DATE ISSUED:

12. COUNTY OR PARISH: LEA | 13. STATE: NM

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
8/30/95	9/23/95	11/2/95	3588' KB	3588'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
10,638'	10,529'			0-10,638'	-

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
8674-8700' (AVALON SAND) RBP SET @ 8925' KB

ACCEPTED FOR RECORD
DEC 16 1996
CARLSBAD, NEW MEXICO

25. WAS DIRECTIONAL SURVEY MADE: TOTCO-ATTACHED

26. TYPE ELECTRIC AND OTHER LOGS RUN: DLL-MSFL, GR-LD-DN

27. WAS WELL CORED: SIDEWALL CORES

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB/FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	54.5#	880'	17-½"	550-sxs (CIRC CMT)	
8-5/8"	32#	4455'	12¼"	1500-sxs (CIRC CMT)	
5-½"	6#	10,630'	7-7/8"	750-sxs stage I (CIRC CMT) DV @ 7500'	
				1300-sxs stage II (TOC CBL)	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM MD	SACKS CMT	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-7/8"	8686'	

31. PERFORATION RECORD (Interval, size & number)
8976,87,9017,25,29,32,57,67,72,79,83,9104,08,9115,19,26,32,35,39,85,95,9204,08
(23-0.41" Holes)
8674,76,81,83,85,92,94,96,98,8700
(2-SPF 0.41" Holes - 20 Holes Total)

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
8976' - 9208'	65,755 GAL + 184,000 # SAND
8674' - 8700'	139,000 GAL + 267,489 # SAND

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
11/2/95	PUMPING (2.5 X 1.5 X 30' ROD PUMP)	PRODUCING

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
12/12/95	24-HRS			244	465	4	1906:1

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
			244	465	4	38°

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)
SOLD TO GPM (FIRST GAS SALES: 11-2-95)

TEST WITNESSED BY: CARLOS GUERERRO

35. LIST OF ATTACHMENTS
WELL CHRONOLOGY, TOTCO SURVEY

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Isabel Lopez TITLE ENGINEERING TECHNICIAN DATE 12/13/95

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

HOBBS OCD

Form 3160-4
(August 2007)

DEC 0 6 2011

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OPERATOR'S COPY

FORM APPROVED
OMB NO. 1004-0137
Expires July 31, 2010

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

DEC 13 2011

5. Lease Serial No. NMNM62223

1a. Type of Well: [X] Oil Well [ ] Gas Well [ ] Dry Other

6. If Indian, Allotee or Tribe Name

b. Type of Completion: [X] New Well [ ] Work Over [ ] Deepen [ ] Plug Back [ ] Diff.Resvr.
Other

7. Unit or CA Agreement Name and No.

2. Name of Operator: Chevron U.S.A. Inc.

8. Lease Name and Well No. Sharbro Federal 10

3. Address: 1001 Fannin St., Ste 800 Houston, Texas 77002

3a. Phone No. (include area code): 713-495-1571

9. API Well No. 30-025-40218

4. Location of Well (Report location clearly and in accordance with Federal requirements)*

At surface: UL J 1830' FSL & 1,980' FEL

10. Field and Pool, or Exploratory: Sand Dunes (Bone Springs)

At top prod. interval reported below

11. Sec., T., R., M., or Block and Survey or Area: UL J, Sec 7, 23S, 32E

At total depth

12. County or Parish: Lea

13. State: NM

14. Date Spudded	15. Date T.D. Reached	16. Date Completed	17. Elevations (DF, RKB, RT, GL)*
08/29/2011	09/14/2011	[ ] D & A [X] Ready to Prod. 10/20/11	3554' GL

18. Total Depth: MD / TVD	19. Plug Back T.D.: MD / TVD	20. Depth Bridge Plug Set: MD / TVD
8,900'	8857'	

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)

Triple Combo & Micro CEL, CBL

22. Was well cored? [X] No [ ] Yes (Submit analysis)
Was DST run [X] No [ ] Yes (Submit report)
Directional Survey? [X] No [ ] Yes (Submit copy)

23. Casing and Liner Record (Report all strings set in well)

Hole Size	Size/Grade	Wt.(#ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No.of Sks. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
17 1/2	13 3/8								
	H-40	48	0	990		875 'C'		surf	
12 1/4	8 5/8								
	J-55	32	0	4,595		1375 'C'		surf	
7 7/8	5 1/2								
	N-80	17	0	8,900		805 'C'		surf	

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2-7/8"	8717.8							

25. Producing Intervals

	Formation	Top	Bottom
A)	Bone Springs	8485'	
B)			
C)			
D)			

26. Perforation Record

Perforated Interval	Size	No. Holes	Perf. Status
8630-56'	0.400	54	Open

27. Acid, Fracture, Treatment, Cement Squeeze, Etc.

Depth Interval	Amount and Type of Material
8,630 - 8,656	Frac w/4409 bbls wtr w/229840# of sand 72020# resin coated
	Loaded tbg w/11 bbls of 2% KCL.

RECLAMATION
DUE 4-20-12

28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
10/20/11	10/22/11	24		77	261	30			Flows from well
Choke Size	**Tbg. Press. Flwg. SI**	**Csg. Press.**	**24 Hr. →**	**Oil BBL**	**Gas MCF**	**Water BBL**	**Gas: Oil Ratio**	**Well Status**	
64/64	150	200		77	261	30		POW	

28a. Production-Interval B

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	**Tbg. Press. Flwg. SI**	**Csg. Press.**	**24 Hr. →**	**Oil BBL**	**Gas MCF**	**Water BBL**	**Gas: Oil Ratio**	**Well Status**	

ACCEPTED FOR RECORD
NOV 20 2011
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

(See instructions and spaces for additional data on page 2)

28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method

Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. →	Oil BBL	Gas MCF	Water BBL	Gas: Oil Ratio	Well Status

28c. Production-Interval D

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method

Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. →	Oil BBL	Gas MCF	Water BBL	Gas: Oil Ratio	Well Status

29. Disposition of Gas *(Sold, used for fuel, vented, etc.)*

Sold

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top Meas.Depth
Lamar Line	4600'		Limestone		
Ramsey Sd	4625'		Sandstone		
Cherry Can.	5529'		Sandstone/shale		
Brushy Can.	6828'		Sandstone/shale		
Bone Spr.	8485'		Limestone		

RECEIVED
2011 NOV -4 AM 11:57
BUREAU OF LAND MGMT
CARLSBAD FIELD OFFICE

32. Additional remarks (include plugging procedure):

33. Indicate which items have bee attached by placing a check in the appropriate boxes:

[X] Electrical/Mechanical Logs (1 full set req'd) [ ] Geologic Report [ ] DST Report [ ] Directional Survey

[ ] Sundry Notice for plugging and cement verification [ ] Core Analysis [ ] Other:

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name *(please print)* Janet M. Bienski Title Regulatory Assistant

Signature Janet M Bienski Date 11-8-11

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 3)

NMOCD
Hobbs

HOBBS OCD
MAR 13 2017
RECEIVED

Form 3160-4
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. Lease Serial No. NMNM98826

1a. Type of Well ☒ Oil Well ☐ Gas Well ☐ Dry ☐ Other
b. Type of Completion ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr.
Other

6. If Indian, Allottee or Tribe Name

7. Unit or CA Agreement Name and No. NMNM136568

2. Name of Operator DEVON ENERGY PRODUCTION COMPANY Contact: CHANCE BLAND E-Mail: chance.bland@dvn.com

8. Lease Name and Well No. STRAY CAT 8 FED COM 1H

3. Address 6488 SEVEN RIVERS HIGHWAY ARTESIA, NM 88211

3a. Phone No. (include area code) Ph: 405-693-9277

9. API Well No. 30-025-42982-00-S1

4. Location of Well (Report location clearly and in accordance with Federal requirements)*

At surface SWSW 211FSL 660FWL

At top prod interval reported below SWSW 50FSL 408FWL

At total depth NWNW 291FNL 363FWL

10. Field and Pool, or Exploratory SAND DUNES-BONE SPRING

11. Sec., T., R., M., or Block and Survey or Area Sec 8 T23S R32E Mer NMP

12. County or Parish LEA

13. State NM

14. Date Spudded 08/23/2016

15. Date T.D. Reached 09/06/2016

16. Date Completed ☐ D & A ☒ Ready to Prod. 10/21/2016

17. Elevations (DF, KB, RT, GL)* 3593 GL

18. Total Depth: MD 15203 TVD 10478

19. Plug Back T.D.: MD TVD

20. Depth Bridge Plug Set: MD TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each) GAMMARAY

22. Was well cored? ☒ No ☐ Yes (Submit analysis)
Was DST run? ☒ No ☐ Yes (Submit analysis)
Directional Survey? ☐ No ☒ Yes (Submit analysis)

23. Casing and Liner Record *(Report all strings set in well)*

Hole Size	Size/Grade	Wt. (#/ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sks. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
17.500	13.375 J-55	54.5	0	1100		1140	272	0	
12.250	9.625 J-55	40.0	0	4660		1630	502	0	
8.750	5.500 P-110	17.0	0	15203		1682	669	2000	

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2.875	10029							

25. Producing Intervals

26. Perforation Record

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A) BONE SPRING 2ND	10602	14987	10602 TO 14987		544	OPEN - Bone Spring
B)						
C)						
D)						

27. Acid, Fracture, Treatment, Cement Squeeze, Etc.

Depth Interval	Amount and Type of Material
10602 TO 14987	6970000 LBS OF PROPPANT USED & 4494 GALS OF ACID

28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
10/21/2016	11/18/2016	24	→	1289.0	1561.0	869.0			FLOWS FROM WELL
Choke Size	**Tbg. Press. Flwg. SI**	**Csg. Press.**	**24 Hr. Rate**	**Oil BBL**	**Gas MCF**	**Water BBL**	**Gas:Oil Ratio**	**Well Status**	
30	1081	89.0	→	1289	1561	869	1211	POW	

28a. Production - Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						
Choke Size	**Tbg. Press. Flwg. SI**	**Csg. Press.**	**24 Hr. Rate**	**Oil BBL**	**Gas MCF**	**Water BBL**	**Gas:Oil Ratio**	**Well Status**	
			→						

ACCEPTED FOR RECORD
BUREAU OF LAND MANAGEMENT
FEB 21 2017
DAVID R. GLASS
PETROLEUM ENGINEER

(See Instructions and spaces for additional data on reverse side)
ELECTRONIC SUBMISSION #359422 VERIFIED BY THE BLM WELL INFORMATION SYSTEM
**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

RECLAMATION DUE:
APR 21 2017

28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						

Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status
			→					

28c. Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						

Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status
			→					

29. Disposition of Gas *(Sold, used for fuel, vented, etc.)*
SOLD

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top Meas. Depth
RED BEDS	0	1300			
RUSTLER	1300	2248	BARREN	RUSTLER	1300
SALADO	2248	4620	SALT	SALADO	2248
BASE OF SALT	4620	4670	SALT	BASE OF SALT	4620
DELAWARE	4670	8637	OIL/GAS/WATER	DELAWARE	4670
BONE SPRING	8637	9698	OIL/GAS/WATER	BONE SPRING	8637
BONE SPRING 1ST	9698	9943	OIL/GAS/WATER	BONE SPRING 1ST	9698
BONE SPRING LIME	9943	10289	OIL/GAS/WATER	BONE SPRING LIME	9943
BONE SPRING 2ND	10602	14987	OIL/GAS/WATER	BONE SPRING 2ND	10289

32. Additional remarks (include plugging procedure):
Production csg as follows: 8 3/4 inch hole @ 10724', 8 1/2 inch hole @ 15203', RIH w/ 353 jts 5 1/2" 17# P110ry cdc/htq csg, set at 15203.

33. Circle enclosed attachments:

1. Electrical/Mechanical Logs (1 full set req'd.)
2. Geologic Report
3. DST Report
4. Directional Survey
5. Sundry Notice for plugging and cement verification
6. Core Analysis
7 Other:

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions):

Electronic Submission #359422 Verified by the BLM Well Information System.
For DEVON ENERGY PRODUCTION COM LP, sent to the Hobbs
Committed to AFMSS for processing by DEBORAH HAM on 12/12/2016 (17DMH0031SE)

Name *(please print)* CHANCE BLAND Title AUTHORIZED REPRESENTATIVE

Signature (Electronic Submission) Date 11/30/2016

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fradulent statements or representations as to any matter within its jurisdiction.

**** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ****

Form 3160-4
(July 1992)

P.O. BOX 1980
HOBBS NEW MEXICO 88240

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE (See other instructions on reverse side)

FORM APPROVED
OMB NO. 1004-0137
Expires: February 28, 1995

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: NM-86151

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Santa Fe Energy Resources, Inc.

8. FARM OR LEASE NAME, WELL NO.: Tomcat "18" Federal #1

3. ADDRESS AND TELEPHONE NO.: 550 W. Texas, Suite 1330, Midland, TX 79701 915/687-3551

9. API WELL NO.: 30-025-33364

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: (A), 660' FNL & 990' FEL, Sec. 18, T-23S, R-32E
At top prod. interval reported below
At total depth

10. FIELD AND POOL, OR WILDCAT: Sand Dunes Bone Spring

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 18, T-23S, R-32E

14. PERMIT NO. / DATE ISSUED

12. COUNTY OR PARISH: Lea

13. STATE: NM

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
5/9/96	5/23/96	6/8/96	3575' GL	

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
9349'	9021'	N/A	→	All	N/A

24. PRODUCING INTERVAL(S), OF THIS COMPLETION - TOP, BOTTOM, NAME (MD AND TVD)*: 8677'-8694' (Bone Spring)

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: SDL/DSN; Microlog; HRI/GR

27. WAS WELL CORED: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
13-3/8" H-40	48.0	622'	17-1/2"	600 sx Cl C (circ'd)	None
8-5/8" K-55	32.0	4450'	11"	1000 sx Poz & C (circ'd)	None
5-1/2" K-55	15.5 & 17.0	9348'	7-7/8"	1050 sx C-Lite & "H"	None

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
N/A				

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-7/8"	8585'	N/A

31. PERFORATION RECORD (Interval, size and number): 8677-85' & 8690-94' w/4" csg gun, 26 holes

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
8677'-8694'	Frac'd w/ 24,000 gal gel & 81,000# Ottawa, 14,000# resin coated sand.

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping - size and type of pump)	WELL STATUS (Producing or shut-in)
6/6/96	Flowing	Shut-in

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL - BBL.	GAS - MCF.	WATER - BBL.	GAS - OIL RATIO
6/9/96	24	20/64"		175	632	0	3611

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL - BBL.	GAS - MCF.	WATER - BBL.	OIL GRAVITY - API (CORR.)
200	700		175	632	0	38 deg

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.): Currently shut-in waiting on connection

TEST WITNESSED BY

35. LIST OF ATTACHMENTS: C-104, Deviation Survey, Logs

ACCEPTED FOR RECORD
JUL 19 1996
CARLSBAD, NEW MEXICO

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Jessyn McCullough TITLE Sr. Production Clerk DATE 6/17/96

(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
Delaware	4606	
Ramsey	4660	
Cherry Canyon	5634	
Brushy Canyon	7220	
Bone Spring	8564	
Avalon Sand	8671	
1st BS Sand	8960	

U S. GOVERNMENT PRINTING OFFICE: 1992-774-672

Completion Report	Plugging Details
Attached	
Attached	
Attached	
Attached	
Attached	Attached
Attached	