AE Order Number Banner

Application Number: pMSG2411456482

SWD-2610

MACK ENERGY CORP [13837]

Revised March 23, 2017

RECEIVED:	REVIEWER:	TYPE:	APP NO:

ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

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

ADMINISTRATIVE APPLICATION CHECKLIST

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

Applicant: _____ **OGRID Number:** _____
Well Name: _____ **API:** _____
Pool: _____ **Pool Code:** _____

SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED BELOW

1) **TYPE OF APPLICATION:** Check those which apply for [A]
   A. Location – Spacing Unit – Simultaneous Dedication
   ☐ NSL ☐ NSP (PROJECT AREA) ☐ NSP (PRORATION UNIT) ☐ SD

   B. Check one only for [I] or [II]
   [I] Commingling – Storage – Measurement
   ☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
   [II] Injection – Disposal – Pressure Increase – Enhanced Oil Recovery
   ☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

FOR OCD ONLY
☐ Notice Complete
☐ Application Content Complete

2) **NOTIFICATION REQUIRED TO:** Check those which apply.
   A. ☐ Offset operators or lease holders
   B. ☐ Royalty, overriding royalty owners, revenue owners
   C. ☐ Application requires published notice
   D. ☐ Notification and/or concurrent approval by SLO
   E. ☐ Notification and/or concurrent approval by BLM
   F. ☐ Surface owner
   G. ☐ For all of the above, proof of notification or publication is attached, and/or,
   H. ☐ No notice required

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

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

_____ Date

_____ Print or Type Name

_____ Phone Number

Deana Weaver
_____ Signature

_____ e-mail Address

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 XXX Disposal _____Storage
Application qualifies for administrative approval? XXX Yes _____No

II. OPERATOR: Mack Energy Corporation

ADDRESS: P.O. Box 960 Artesia, NM 88210

CONTACT PARTY: Deana Weaver PHONE: 575-748-1288

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? _____Yes XXX No
If yes, give the Division order number authorizing the project: _____

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

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

*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Deana Weaver TITLE: Regulatory Tech II

SIGNATURE: Deana Weaver

E-MAIL ADDRESS: dweaver@mec.com DATE: 2/28/2024

* 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

Side 2

III. WELL DATA

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

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

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

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

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

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

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

(1) The name, address, phone number, and contact party for the applicant;

(2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;

(3) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

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

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

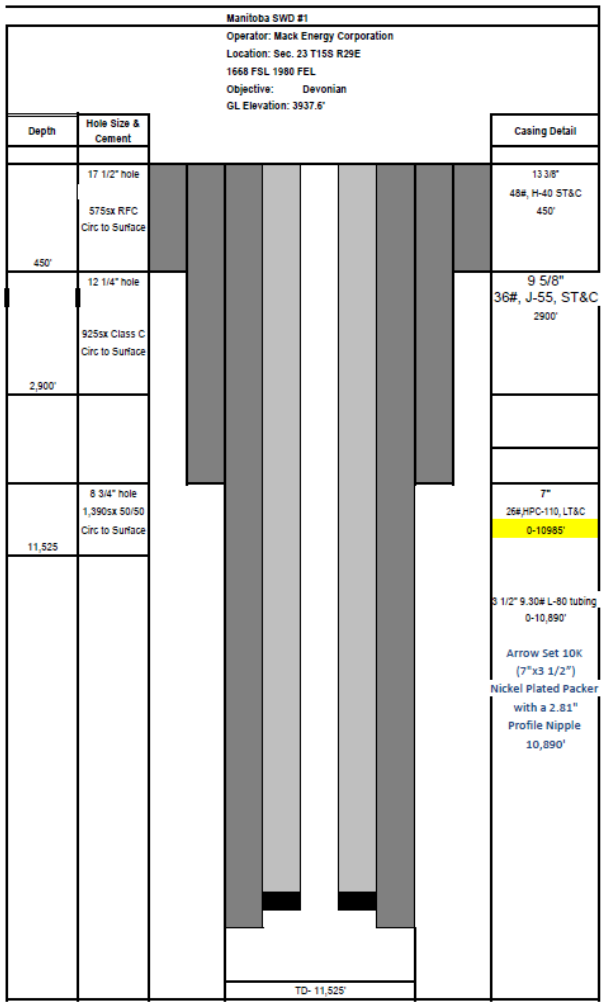
OPERATOR: Mack Energy Corporation

WELL NAME & NUMBER: Manitoba SWD #1

WELL LOCATION: 1668 FSL 1980 FEL | J | 23 | 15S | 29E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 17 1/2" Casing Size: 13 3/8"

Cemented with: 575 sx. ***or*** _____ ft^3

Top of Cement: 0 Method Determined: Circ

Intermediate Casing

Hole Size: 12 1/4" Casing Size: 9 5/8"

Cemented with: 925 sx. ***or*** _____ ft^3

Top of Cement: 0 Method Determined: Circ

Production Casing

Hole Size: 8 3/4" Casing Size: 7" @ 10,985'

Cemented with: 1390 sx. ***or*** _____ ft^3

Top of Cement: 0 Method Determined: Circ

Total Depth: 11,525' TD

Injection Interval

10,985' feet to 11,525' Open Hole

(Perforated or Open Hole; indicate which)

Side 2

INJECTION WELL DATA SHEET

Tubing Size: 3 1/2" 9.30# L-80 Lining Material: IPC Coating is 1850.

Type of Packer: Arrow Set 10K (7"x 3 1/2") Nickel Plated Packer with a 2.81" Profile Nipple

Packer Setting Depth: 10,890'

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

Additional Data

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

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

2. Name of the Injection Formation: Devonian

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

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. N/A

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: L. Miss 10,435' Devonian 10,985', Montoya 11,525' Simpson 11,725'

VII. DATA SHEET: PROPOSED OPERATIONS

1. Proposed average and maximum daily rate and volume of fluids to be injected;
Respectively, 15,000 BWPD and 20,000 BWPD
2. The system is closed or open;
Closed
3. Proposed average and maximum injection pressure;
1,000psi average-2,030psi maximum
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than re-injected produced water;
We will be re-injecting produced water

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;
N/A
6. List of Aquifers-Underground Sources of Drinking Water- There is no USDW present.
7. Well Procedures- See Attached

VIII. GEOLOGICAL DATA

1. Lithologic Detail; **Dolomite**
2. Geological Name; **Devonian**
3. Thickness; **540'**
4. Depth; **11,525' (open hole 10,985-11,525')**

IX. PROPOSED STIMULATION PROGRAM

5. To be treated with 10000 gallons 15% acid

X. LOGS AND TEST DATA

1. Well data will be filed with the OCD.

XI. ANALYSIS OF FRESHWATER WELLS

See attached
Additional Information
Waters Injected:
San Andres

XII. AFFIRMATIVE STATEMENT

RE: Manitoba SWD #1

We have examined the available geologic and engineering data and find no evidence of open faults or any other hydraulic connection between the disposal zone and any underground source of drinking water.

Mack Energy Corporation

Date: 2/15/24

Charles Sadler, Geologist

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
	96101	SWD; Devonian

[4] Property Code	[5] Property Name	[6] Well Number
	MANITOBA SWD	1

[7] OGRID No.	[8] Operator Name	[9] Elevation
13837	MACK ENERGY CORPORATION	3937.6

[10] Surface Location

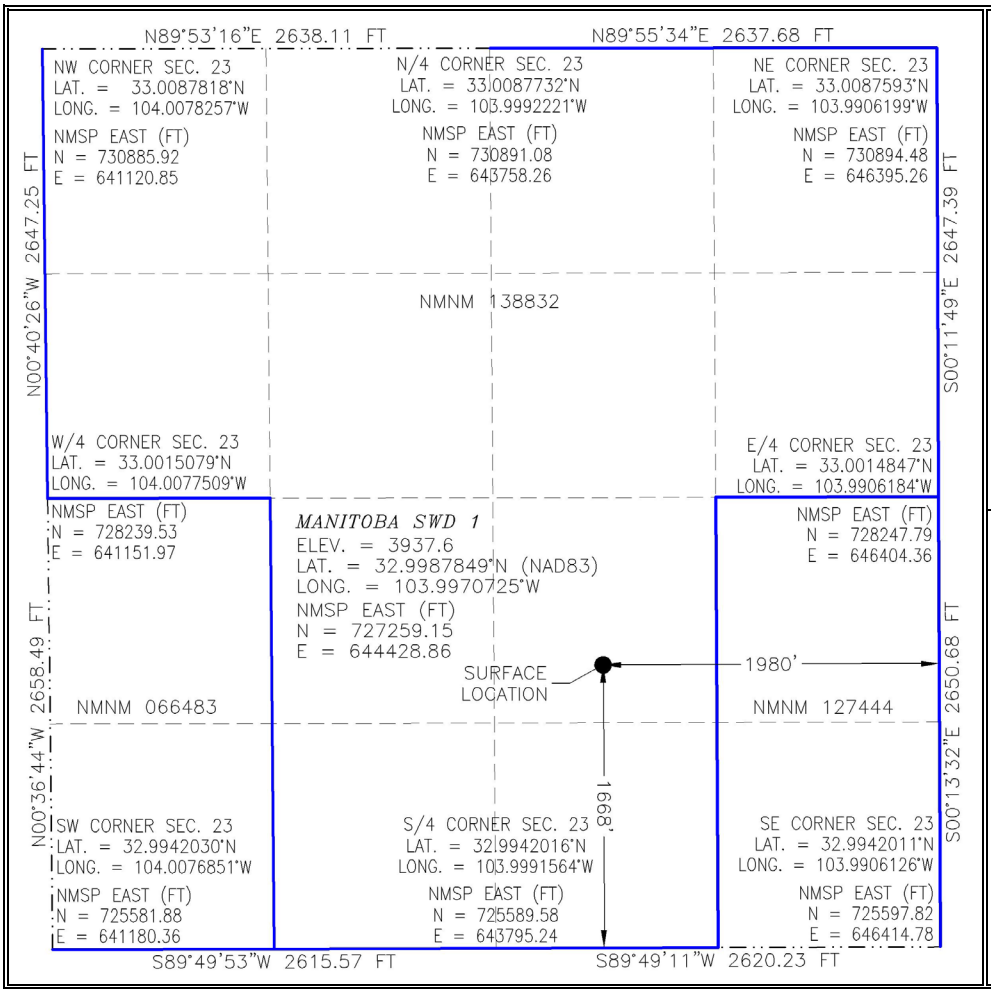
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	23	15 S	29 E		1668	SOUTH	1980	EAST	CHAVES

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
40			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Deana Weaver 2/15/2024
Signature Date

Deana Weaver
Printed Name

dweaver@mec.com
E-mail Address

[18] SURVEYOR CERTIFICATION

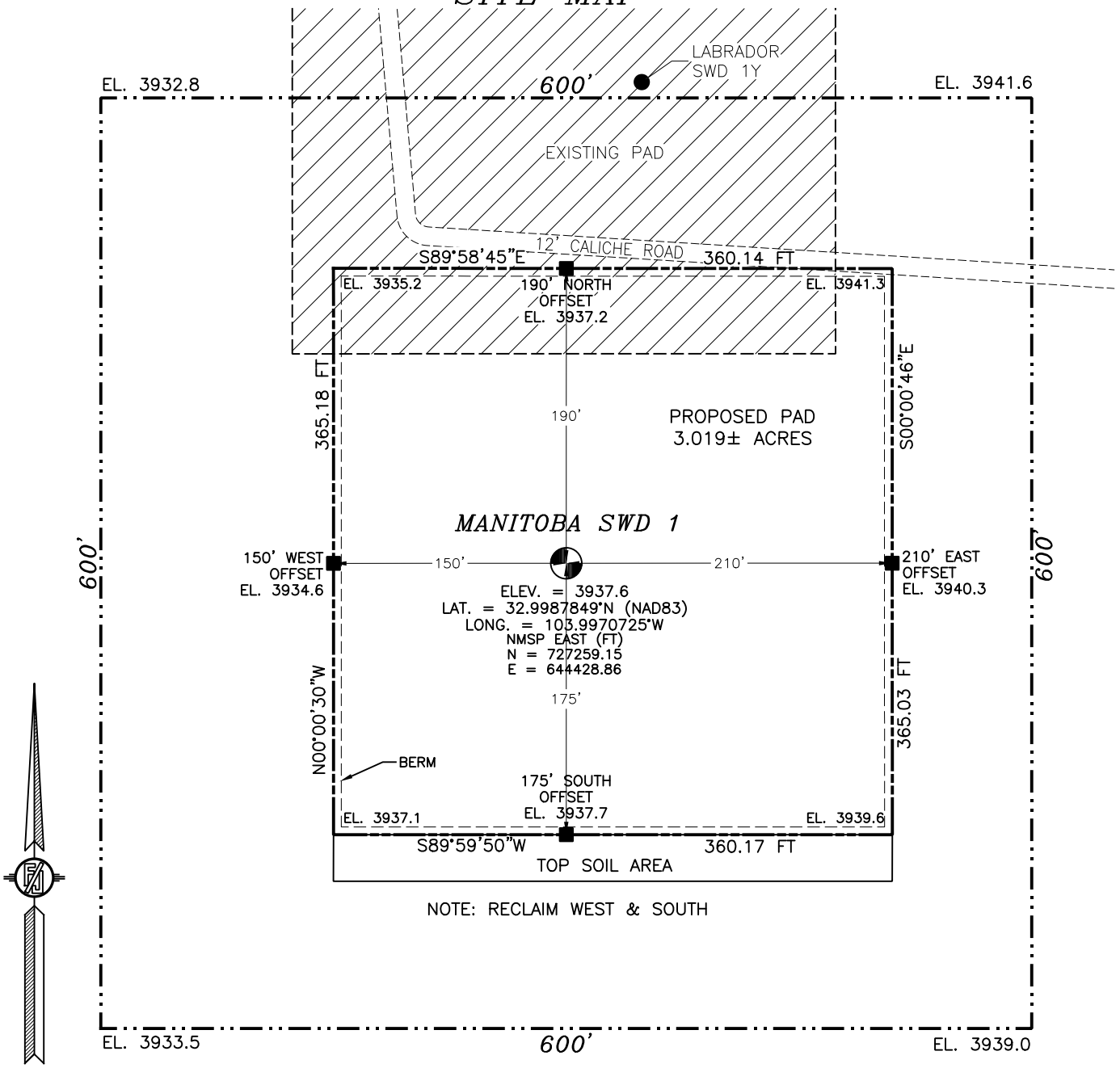
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

JANUARY 30, 2024
Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number: EDMUND F. JARAMILLO, PLS 12797

SECTION 23, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
SITE MAP



010 50 100 200
SCALE 1" = 100'

DIRECTIONS TO LOCATION
FROM THE INTERSECTION OF ST. HWY. 82 & CO. RD. 217 (HAGERMAN CUTOFF), GO NORTH ON CO. RD. 217 APPROX. 12 MILES, TURN LEFT (WEST) ON 12' CALICHE LEASE ROAD AND GO APPROX 0.6 OF A MILE TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

I, FILIMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THIS SURVEY WAS MADE TO MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

FILIMON F. JARAMILLO PLS 17078

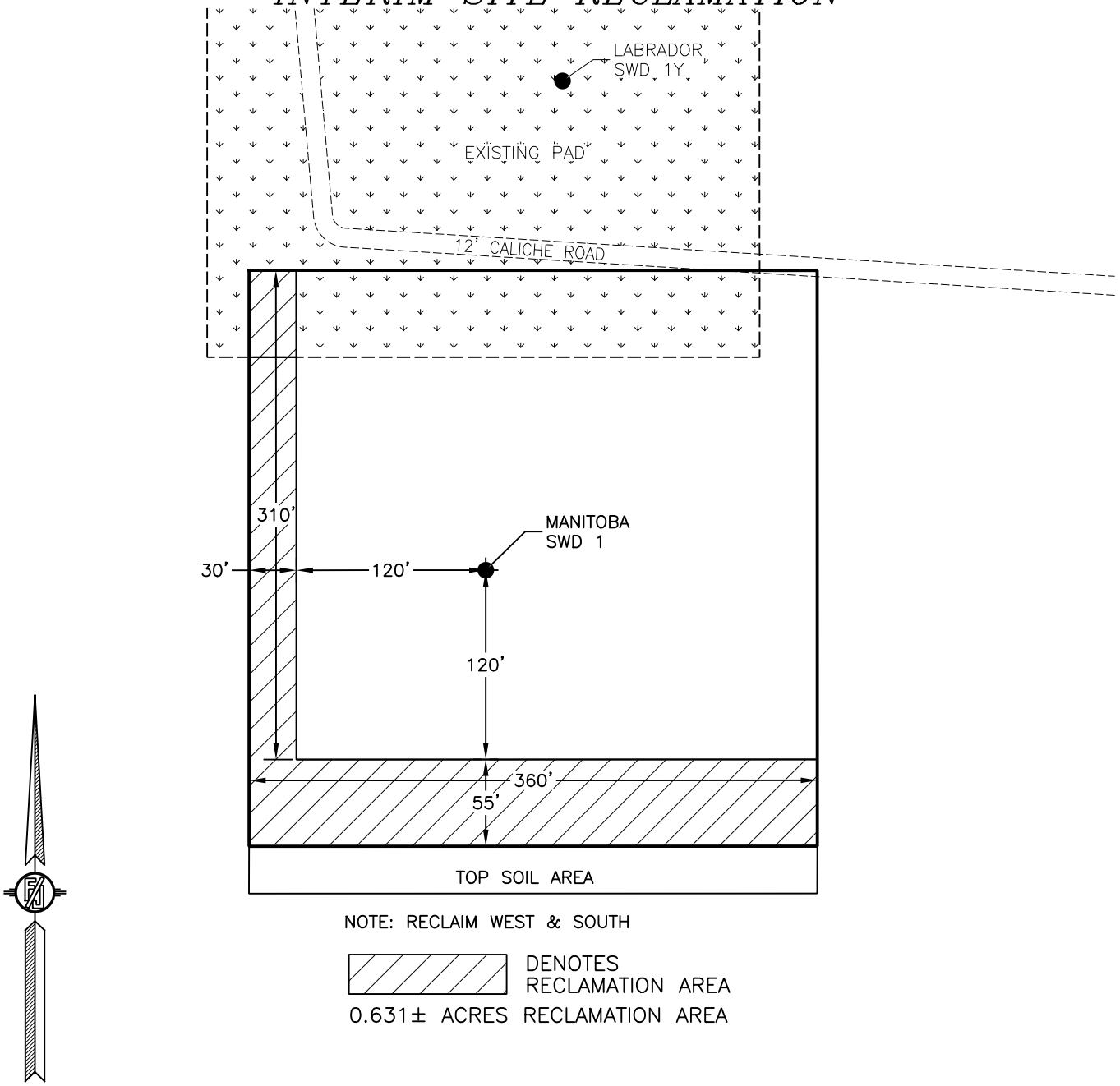
MACK ENERGY CORPORATION
MANITOBA SWD 1
LOCATED 1668 FT. FROM THE SOUTH LINE AND 1980 FT. FROM THE EAST LINE OF SECTION 23, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M. CHAVES COUNTY, STATE OF NEW MEXICO

JANUARY 30, 2024

SURVEY NO. 9999

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 *CARLSBAD, NEW MEXICO*

SECTION 23, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO
INTERIM SITE RECLAMATION



NOTE: RECLAIM WEST & SOUTH

DENOTES RECLAMATION AREA

0.631± ACRES RECLAMATION AREA

010 50 100 200
SCALE 1" = 100'

MACK ENERGY CORPORATION

MANITOBA SWD 1

LOCATED 1668 FT. FROM THE SOUTH LINE AND 1980 FT. FROM THE EAST LINE OF SECTION 23, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M. CHAVES COUNTY, STATE OF NEW MEXICO

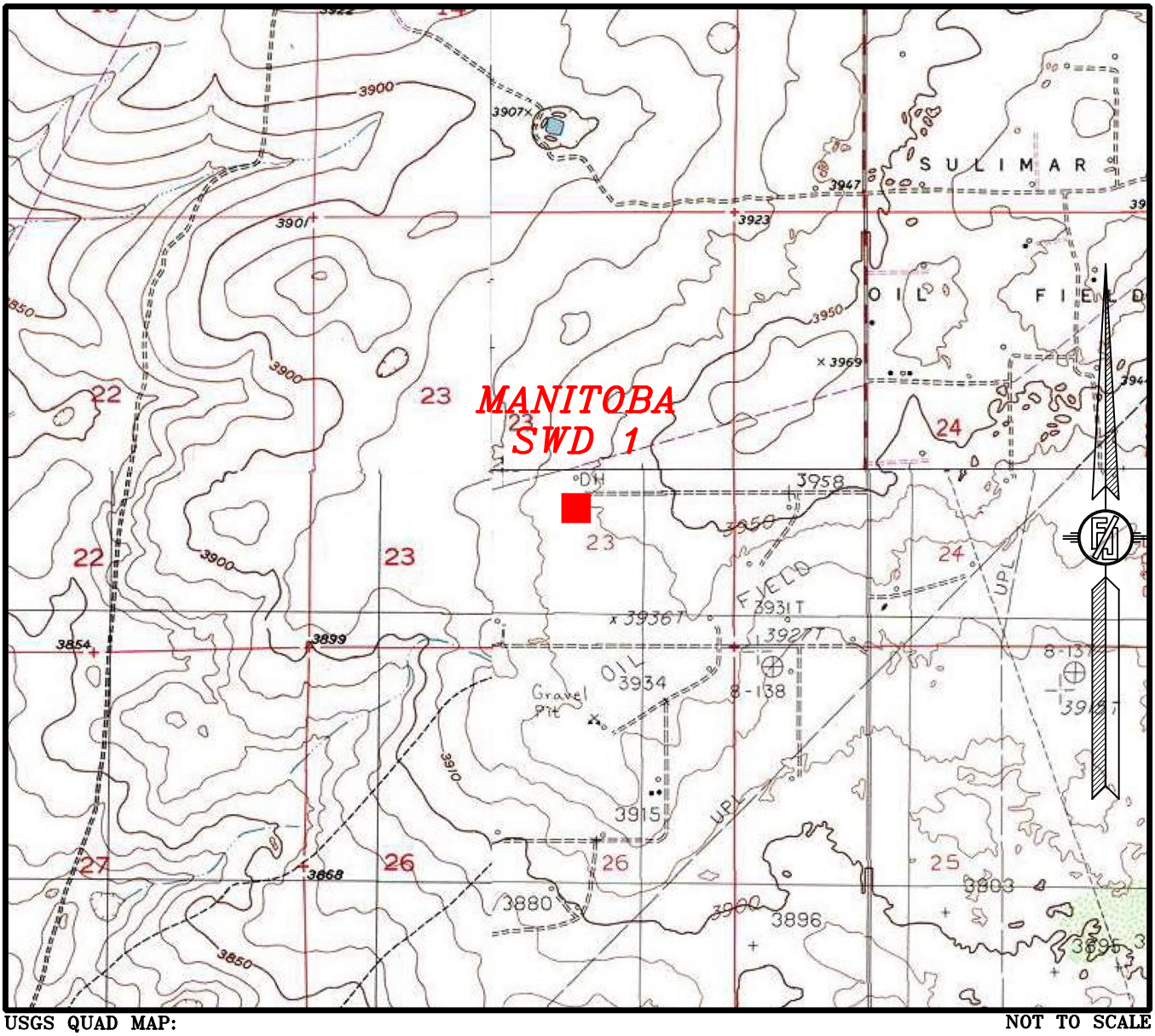
JANUARY 30, 2024

SURVEY NO. 9999

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 CARLSBAD, NEW MEXICO

SECTION 23, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

LOCATION VERIFICATION MAP



USGS QUAD MAP:
HENSHAW TANK
CEDAR POINT
KING CAMP
BASIN WELL

NOT TO SCALE

MACK ENERGY CORPORATION
MANITOBA SWD 1
LOCATED 1668 FT. FROM THE SOUTH LINE
AND 1980 FT. FROM THE EAST LINE OF
SECTION 23, TOWNSHIP 15 SOUTH,
RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

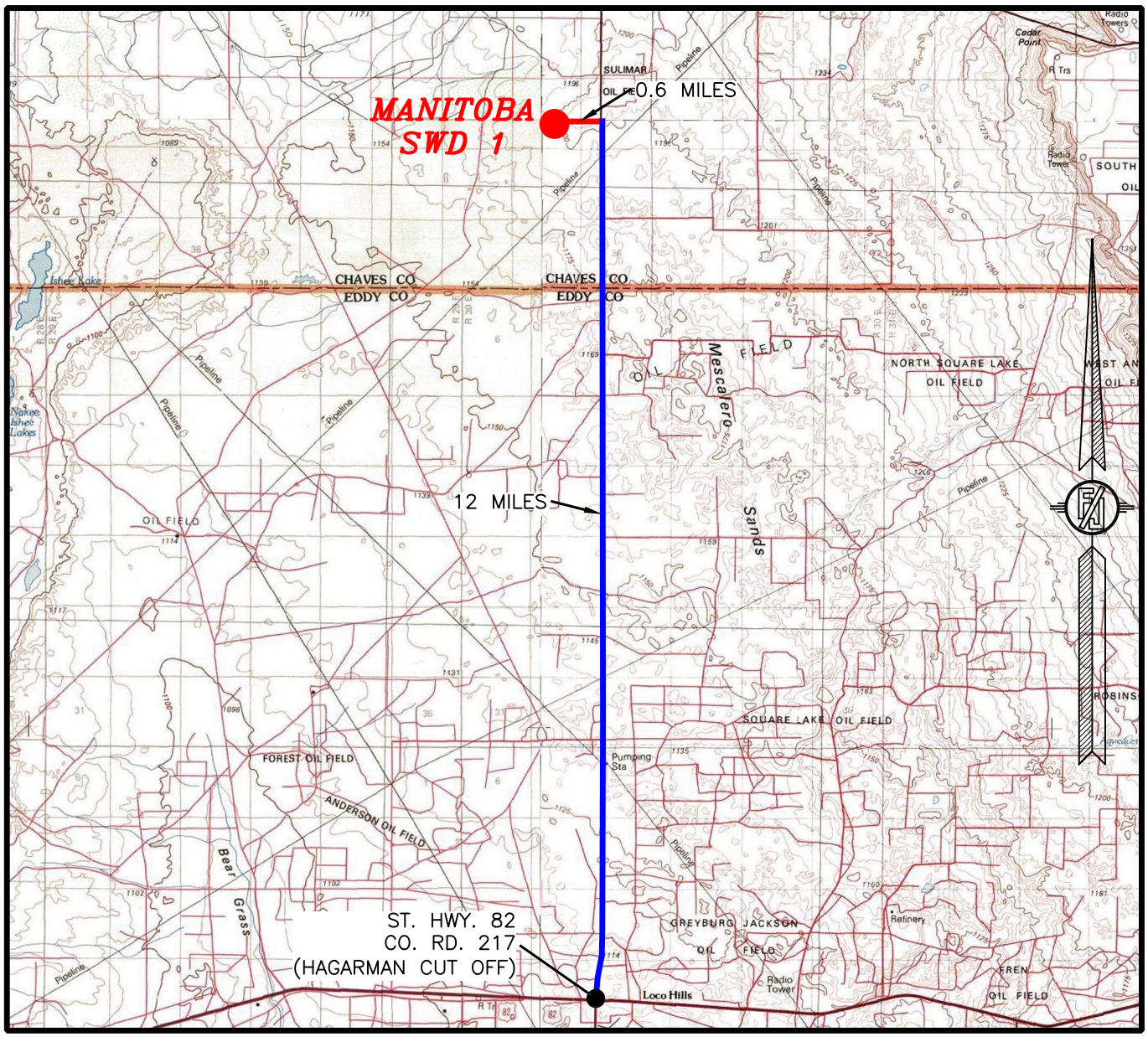
JANUARY 30, 2024

SURVEY NO. 9999

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 CARLSBAD, NEW MEXICO

SECTION 23, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION
FROM THE INTERSECTION OF ST. HWY. 82 & CO. RD. 217 (HAGERMAN CUTOFF), GO NORTH ON CO. RD. 217 APPROX. 12 MILES, TURN LEFT (WEST) ON 12' CALICHE LEASE ROAD AND GO APPROX 0.6 OF A MILE TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

MACK ENERGY CORPORATION
MANITOBA SWD 1
LOCATED 1668 FT. FROM THE SOUTH LINE
AND 1980 FT. FROM THE EAST LINE OF
SECTION 23, TOWNSHIP 15 SOUTH,
RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

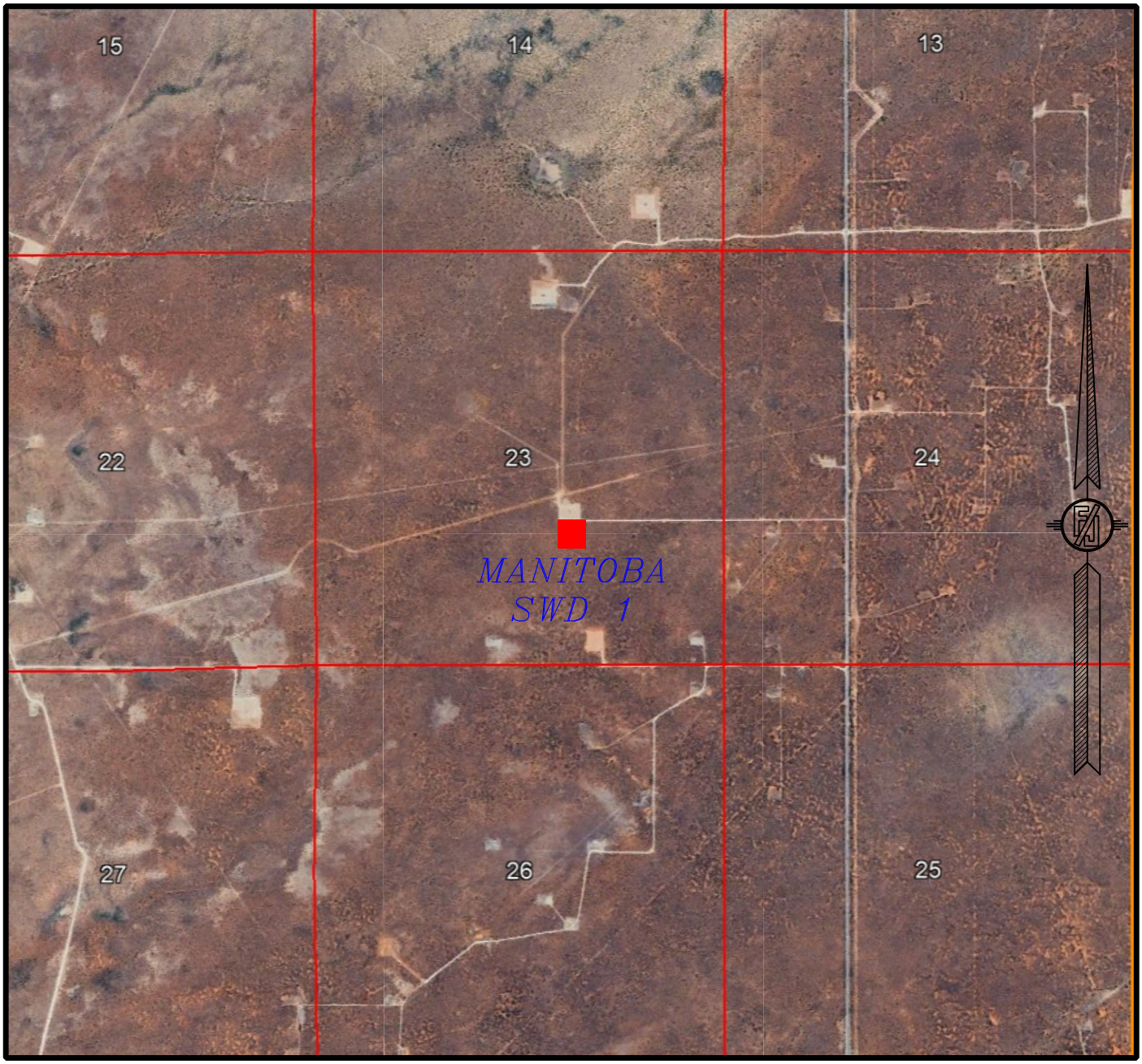
JANUARY 30, 2024

SURVEY NO. 9999

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 CARLSBAD, NEW MEXICO

SECTION 23, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
JUNE 2023

MACK ENERGY CORPORATION
MANITOBA SWD 1
LOCATED 1668 FT. FROM THE SOUTH LINE
AND 1980 FT. FROM THE EAST LINE OF
SECTION 23, TOWNSHIP 15 SOUTH,
RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

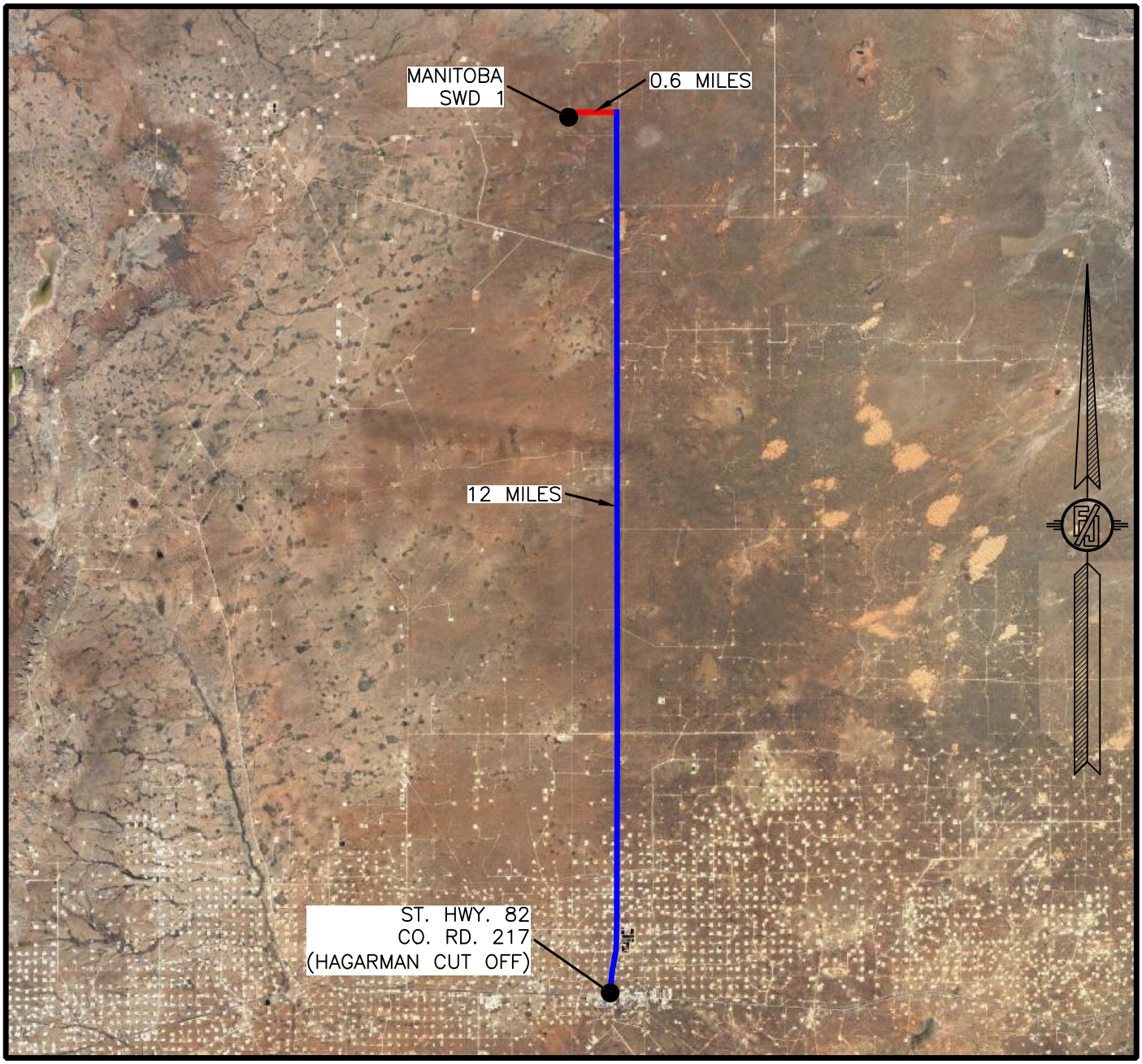
JANUARY 30, 2024

SURVEY NO. 9999

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 CARLSBAD, NEW MEXICO

SECTION 23, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
JUNE 2023

MACK ENERGY CORPORATION

MANITOBA SWD 1

LOCATED 1668 FT. FROM THE SOUTH LINE
AND 1980 FT. FROM THE EAST LINE OF
SECTION 23, TOWNSHIP 15 SOUTH,
RANGE 29 EAST, N.M.P.M.
CHAVES COUNTY, STATE OF NEW MEXICO

JANUARY 30, 2024

SURVEY NO. 9999

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 CARLSBAD, NEW MEXICO

Manitoba SWD #1
1668 FSL 1980 FEL
Sec. 23 T15S R29E
Formation Tops

Quaternary	Surface
Top Salt	462’
Base Salt	1023’
Yates	1187’
San Andres	2605’
Glorieta	4060’
Tubb	5382’
Abo	6155’
Wolfcamp	7495’
Atoka	9689’
U. Miss	10,200’
L. Miss	10,435’
Devonian	10,985’
Montoya	11,525’
Simpson	11,725’
Ellenburger	11,992’

Manitoba SWD #1

Operator: Mack Energy Corporation
Location: Sec. 23 T15S R29E
1668 FSL 1980 FEL
Objective: Devonian
GL Elevation: 3937.6'

Depth	Hole Size & Cement	Casing Detail
450'	17 1/2" hole 575sx RFC Circ to Surface	13 3/8" 48#, H-40 ST&C 450'
2,900'	12 1/4" hole 925sx Class C Circ to Surface	9 5/8" 36#, J-55, ST&C 2900'
11,525	8 3/4" hole 1,390sx 50/50 Circ to Surface	**7"** 26#,HPC-110, LT&C 0-10985'
		3 1/2" 9.30# L-80 tubing 0-10,890' Arrow Set 10K (7"x3 1/2") Nickel Plated Packer with a 2.81" Profile Nipple 10,890'

TD- 11,525'

MACK Energy Corporation

P.O. Box 960
Artesia, NM 88211-0960
Office (575) 748-1288
Fax (575) 746-9539

February 28, 2024

Via Certified Mail 9589 0710 5270 0130 1877 53
Return Receipt Requested

Bam Permian Operating LLC
4418 Briarwood Ave Ste 110 PMB 53
Midland, TX 87508

To all Interest Owners:

Enclosed for your review is a copy of Mack Energy Corporation's application for a Devonian SWD well. Produced water will be injected at a proposed depth of 10,985-11,525'. The Manitoba SWD #1 located 1668 FSL & 1980 FEL, Sec. 23 T15S R29E, Chaves County.

The letter will serve as a notice that Mack Energy Corporation has requested administrative approval from the NMOCD to drill this well as a water disposal. If you have any objections, you must notify the Oil Conservation Division in Santa Fe in writing at 1220 South St. Francis Drive, Santa Fe, NM 87505 within fifteen (15) days of receiving this letter.

Sincerely,

Mack Energy Corporation

Deana Weaver

Deana Weaver
Regulatory Technician II

DW/

Attachments

MANITOBA SWD #1
C-108
Well Tabulation Penetrating Injection Zone in Review Area
Mack Energy Corporation
Proposed Disposal Well

Operator	Well Name	API #	County	Footage	Sec	TWN	RNG	Type	Status	Spud Date	Comp Date	TD	PBTD	Comp Zone	Comp Interval	Casing Prog	Cement
Mack Energy Corporation	MANITOBA SWD #1		Chaves	1668 FSL 1980 FEL	23	15S	29E	SWD	Not Drilled			11,525'		SWD; Devonian	10,985-11,525'	13 3/8" @ 450'	575sx
																9 5/8" @ 2,900'	925sx
																7" @ 10,985'	1390sx
Mack Energy Corporation	Labrador SWD #1	30-005-64374	Chaves	1980 FNL 1980 FWL	23	15S	29E	Oil (Dry Hole)	P&A	12/26/2008	3/18/2009	1900'	1900'	Unders Sulimar; Queen		13 3/8" @40'	350sx
									3/18/2009							8 5/8" @ 370'	
Mack Energy Corporation	Sarilyn Federal #1	30-005-64370	Chaves	330 FSL 1650 FEL	23	15S	29E	Oil (Dry Hole)	P&A 12/10/2022	12/8/2022	12/10/2022	4018'		San Andres		8 5/8" @ 423'	200sx
									35sx @ 4018'								
									45sx 3993'								
									50sx @ 3967'								
									70sx @ 3923'								
									60sx @ 1250'								
									37sx @ 503'								
									104 @ 92-Surface Circ 42sx								
Jack L McClellan	Getty Federal #1	30-005-60103	Chaves	330 FSL 2310 FWL	23	15S	29E	Oil (Dry Hole)	P&A 12/28/1969	11/23/1969	12/23/1969	1915	1915	Undesignated		8 5/8" @ 387'	50sx
									Plug @ 1815-1915								
									Plug @ 965-1065'								
									Plug @ 328-428'								
									Plug @ 175 to Surface								
Mack Energy Corporation	Powell River Federal Com #1H	30-005-64352	Chaves	602 FSL 990 FEL	14	15S	29E	Oil Well	Producing	7/20/2021	6/28/2021	9025'/3501'TVD	8976/3501'TVD	San Andres	3497-3501' TVD	13 3/8" @ 252'	417sx
																9 5/8" @ 1230'	848sx
																7" & 5 1/2" @ 9025'	1240sx
NM Institute of Mining & Tech	Sulimar Queen Unit #9	30-005-60121	Chaves	330 FSL 990 FWL	13	15S	29E	Oil Well	P&A 2/20/2006	4/24/1970	5/15/1970	1995'	1992'	Queen	1958-1970'	8 5/8" @ 317'	100sx
									25sx @ 1715-1921'							5 1/2" @ 1992'	150sx
									Perf @ 1193'								
									40sx @ 848-1243'								
									Pull 406' 5 1/2" Csg								
									60sx @ 237-465'								
									20sx @ 60' to Surface								
Mack Energy Corporation	Maple Ridge Federal #1H	30-005-64324	Chaves	565 FNL 2285 FEL	23	15S	29E	Oil Well	Producing	3/18/2019	7/12/2019	8940'/3424' TVD	8912'/3424'TVD	San Andres	3794-8824'	13 3/8" @ 352'	350sx
																9 5/8" @ 1206'	405sx
																7" @ 3505'	315sx
																5 1/2" @ 3505-8940'	1400sx
Pre-Ongard Well Operator	Pre-Ongard Well #1	30-005-62275	Chaves	660 FNL 1980 FEL	23	15S	29E	Oil Well	P&A 1/22/1986	6/26/1985	9/4/1985	3800'	3800'	San Andres	3391-3489'	8 5/8" @ 410'	250sx
								Dry Hole	35sx @ 3500'							4 1/2" @ 3800'	850sx
									25sx @ 1600-1950'								
									25sx @ 300-500'								
									50sx 350'								
									10sx to surface								
NM Institute of Mining & Tech	Sulimar Queen Unit #12	30-005-60385	Chaves	810 FNL 1490 FWL	24	15S	29E	Injection	P&A 2/15/2006	6/17/1976	8/1/1976	2012'	2000'	Queen	1960-1970'	8 5/8" @ 380'	100sx
									25sx @ 1675-1921'							5 1/2" @ 2010'	150sx
									Perf @ 1277'								
									25sx @ 1093-1323'								
									Pull 475' 5 1/2" csg								
									60sx @ 328-535'								
									20sx @ 60' to Surface								
EOG Y Resources Inc	Carthel BGT Federal #3	30-005-64031	Chaves	1980 FNL 1980 FWL	23	15S	29E	Oil Well	P&A 3/18/2009	12/26/2008	3/18/2009	1900'	1900'	Queen		13 3/8" @ 40'	
									80sx @ 1524'							8 5/8" @ 370'	350sx
									40sx @ 300'							7 7/8" hole @ 370-1900'	openhole
									Surface Plug								
NM Institute of Mining & Tech	Sulimar Queen Unit #2	30-005-60068	Chaves	1980 FNL 1980 FWL	24	15S	29E	Injection	P&A 3/28/2006	3/10/1969	4/5/1969	2008'	2004'	Queen	1968-1982'	8 5/8" @ 390'	50sx
									25sx @ 1950'							5 1/2" @ 2005'	150sx
									25sx @ 1874-1950'								
									25sx @ 1798-1874'								
									Perf @ 1270'								
									Squ 80sx @ 972-1270'								
									Pull 467' 5 1/2" Csg								
									60sx @ 332-512								
									Perf @ 258'								
									35sx @ 211-315'								
									60sx @ 22-189'								
									10sx @ 22' to Surface								
NM Institute of Mining & Tech	Sulimar Queen Unit #11	30-005-60370	Chaves	2615 FSL 1370 FWL	24	15S	29E	Injection	P&A 3/24/1986	2/2/1976	3/1/1976	2015'	2009'	Queen	1970-1980'	8 5/8" @ 387'	200sx
									30sx @ 1980'							5 1/2" @ 2014'	150sx
									25sx @ 450'								
									Circ cmt @ 60' to surface								
									50sx between 5 1/2" & 8 5/8" csg								

NM Institute of Mining & Tech	Sulimar Queen Unit #4	30-005-60077	Chaves	2410 FSL 2310 FWL	24	15S	29E	Injection	P&A 4/17/2006	6/13/1969	7/2/1969	2012'	2005'	Sulimar	1975-1988'	8 5/8" @ 383'	50sx
									25sx @ 1828-1922'							5 1/2" @ 2012'	150sx
									Perf @ 1290'								
									40sx @ 976-1354'								
									Pull 431' of 5 1/2" csg								
									60sx @ 283-478'								
									Perf @230'								
									30sx @ 150-264'								
									Perf @ 90'								
									SQU 100sx @ 3-90'								
									2sx @ 2' to surface								
NM Institute of Mining & Tech	Sulimar Queen Unit #6	30-005-60085	Chaves	1650 FSL 660 FWL	24	15S	29E	Oil Well	P&A 5/4/2006	8/6/1969	8/27/1969	2003'	1999'	Queen	1967-1975'	8 5/8" @ 390'	50sx
									50sx @ 1953'							5 1/2" @ 2003'	150sx
									65sx @ 1953'								
									25sx @ 1649-1890'								
									Perfs @ 1276'								
									45sx @ 955-1323'								
									Pull 424' of 5 1/2" csg								
									60sx @ 257-535'								
									20sx @ 60' to Surface								
NM Institute of Mining & Tech	Sulimar Queen Unit #14	30-005-60612	Chaves	1345 FSL 1450 FWL	24	15S	29E	Injection	P&A 4/28/2006	2/23/1980	3/7/1980	2010'	2001'	Queen	1970-1978'	8 5/8" @ 406'	230sx
									25sx @ 1780-1953'							4 1/2" @ 2010'	200sx
									Perfs @ 1276'								
									30sx @ 896-1323'								
									Pull 397' of 4 1/2" Csg								
									75sx @ 270-535'								
									20sx @ 60' to Surface								
NM Institute of Mining & Tech	Sulimar Queen Unit #6	30-005-60318	Chaves	990 FSL 2310 FEL	24	15S	29E	Oil Well	P&A 6/6/2006	10/5/1974	11/12/1974	2024'	2005'	Queen	1988-1994'	10 3/4" @ 30'	1 1/2 yds Circ
									25sx @ 460-690'							5 1/2" @ 2023'	150sx
									Holes in casing @ 220-250'								
									SQZ 160sx @220' to Surface								
NM Institute of Mining & Tech	Sulimar Queen Unit #5	30-005-60081	Chaves	660 FSL 1980 FWL	24	15S	29E	Injection	P&A 4/24/2006	7/6/1969	7/26/1969	2020'	2015'	Queen	1976-1988'	8 5/8" @ 383'	50sx
									25sx @ 1938-1984'						2004-2006'	5 1/2" @ 2016'	150sx
									20sx @ 1738-1938'								
									Perfs @ 1280'								
									45sx @ 1221-1323'								
									Pull 336' of 5 1/2" Csg								
									50sx @ 380-504'								
									30sx @ 376-380'								
									Perfs @ 90' SQZ 100sx 3-90'								
									2sx @ 3' to Surface								
NM Institute of Mining & Tech	Sulimar Queen Unit #13	30-005-60433	Chaves	990 FSL 150 FWL	24	15S	29E	Injection	P&A 5/9/2006	6/28/1977	8/5/1977	1975'	1973'	Queen	1955-1957'	8 5/8" @ 388'	100sx Circ
									25sx @ 1710-1890'							5 1/2" @ 1975'	150sx
									Perfs @ 1260								
									40sx @ 969-1323'								
									Perfs @ 420'								
									Pull 353' of 5 1/2" Csg								
									40sx @ 262-472'								
									20sx @ 60' to Surface								
Pre-Ongard Well Operator	Pre-Ongard Well #10	30-005-60331	Chaves	50 FSL 1450 FWL	24	15S	29E	Oil Well	P&A 7/21/1992	1/29/1975	2/16/1975	2025'		Queen		10 3/4" @30'	1 1/2 yards
NM Institute of Mining & Tech	Sulimar Queen Unit #10								35sx @ 1780-2010'							5 1/2" @ 2025'	150sx
									35sx @ 910-1112'								
									Perf @ 400'								
									35sx @ 200-400'								
									Plug @ 60' to Surface								
NM Institute of Mining & Tech	Sulimar Queen Unit #7	30-005-60091	Chaves	330 FSL 660 FWL	24	15S	29E	Oil Well	P&A 5/11/2006	9/14/1969	10/5/1969	1999'	1987'	Queen	1960-1967'	8 5/8" @ 382'	50sx
									25sx @ 1653-1890'							5 1/2" @ 1999'	150sx
									Perfs @ 1270'								
									40sx 942-1323'								
									Perfs @ 330'								
									SQZ 87sx @ 330' to Surface								
NM Institute of Mining & Tech	Sulimar Queen Unit #2	30-005-60100	Chaves	330 FSL 330 FEL	23	15S	29E	Injection	P&A 3/24/1986	11/14/1969	12/18/1969	1994'	1991'	Queen	1954-1964'	8 5/8" @ 364'	50sx
									30sx @ 1820-1970'							5 1/2" @ 1992'	150sx
									25sx @ 950-1050'								
									25sx @ 320-420'								
									15sx @ 60' to Surface								
									50sx between 8 5/8" & 5 1/2"								
Mack Energy Corporation	Grand Forks Federal Com #2H	30-005-64328	Chaves	565 FNL 900 FEL	27	15S	29E	Oil Well	Producing	2/16/2019	3/29/2019	9012' 3422'TVD	8978' 3442' TVD	San Andres	3819-8920'	13 3/8" @ 303'	1020sx
																9 5/8" @ 1193'	410sx
																7" @ 3542'	
																5 1/2" @ 3542-9005'	1820sx
NM Institute of Mining & Tech	Sulimar Queen Unit #1	30-005-60095	Chaves	330 FNL 330 FEL	26	15S	29E	Oil Well	P&A 5/18/2006	10/17/1969	11/4/1969	2006'	1989'	Queen	1962-1972'	8 5/8" @ 392'	150sx
									25sx @ 1733-1984'							4 1/2" @ 2006'	150sx
									Perfs @ 1233								

									30sx @ 874-1290'									
									Perfs @ 437'									
									Pull 338' of 4 1/2" Csg									
									40sx @ 251-480'									
									25sx @ 60' to surface									
NM Institute of Mining & Tech	Sulimar Queen Unit #1	30-005-60087	Chaves	330 FNL 660 FWL	25	15S	29E	Injection	P&A 5/16/2006	8/25/1969	9/14/1969	1995'	1980'	Queen	1958-1970'	8 5/8" @ 385'	50sx	
									25sx @ 1850-1953'							4 1/2" @ 1996'	150sx	
									Holes @ 1764-1850'									
									25sx @ 1649-1827'									
									Perfs @ 1254'									
									30sx @ 900-1323'									
									Pull 435' of 4 1/2" Csg									
									55sx @ 330-441'									
									Holes in 8 5/8" csg 150'+-									
									SQZ 95sx @ 14-150'									
									5sx @ 14' to Surface									
NM Institute of Mining & Tech	Sulimar Queen Unit #2	30-005-60101	Chaves	990 FNL 1650 FEL	26	15S	29E	Injection	P&A 5/23/2006	11/26/1969	1/2/1970	1986'	1962'	Queen	1940-1952'	8 5/8" @ 405'	75sx	
									75sx @ 1531-1890'							4 1/2" @ 1980'	150sx	
									Pull 1219' of 4 1/2" csg									
									55sx @ 838-1260'									
									40sx @ 348-472'									
									30sx @ 90' to Surface									
Pre-Ongard Well Operator	Pre-Ongard Well #2	30-005-60094	Chaves	1650 FNL 660 FWL	25	15S	29E	Dry	P&A 10/23/1969	10/4/1969	10/23/1969	2014'		Queen		8 5/8" @ 381	50sx	
Pan American Petroleum Corp	LaRue Federal #2								50sx @ 1837-2014									
									20sx @ 1020-1090'									
									30sx @ 381'									
									10sx to Surface									
NM Institute of Mining & Tech	Sulimar Queen Unit #1	30-005-60115	Chaves	1650 FNL 990 FEL	26	15S	29E	Oil Well	P&A 05/26/2006	3/17/1970	4/5/1970	2005'	1994'	Queen	1973-1982'	8 5/8" @ 425'	175sx	
									50sx @ 1842-1984'							5 1/2" @ 2004'	135sx	
									Perfs @ 1250'									
									45sx 935-1323'									
									Pull 456' of 5 1/2" csg									
									50sx @ 368-504'									
									20sx @ 60' to Surface									
Pre-Ongard Well Operator	Pre-Ongard Well #1	30-005-60139	Chaves	2310 FNL 2310 FWL	26	15S	29E	Dry	P&A 10/8/1970	9/18/1970	10/8/1970	2113'		Queen		8 5/8" @ 411'	275sx	
									28sx @ 1850-1950'									
									28sx @ 1135-1035'									
									28sx @ 364-465'									
									10sx @ Surface									
NM Institute of Mining & Tech	Sulimar Queen Unit #2	30-005-60120	Chaves	2310 FNL 1650 FEL	26	15S	29E	Oil Well	P&A 6/02/2006	5/17/1970	6/17/1970	1991'	1975'	Queen	1954-1963'	8 5/8" @ 421	175sx	
									25sx @ 1732-1890'							5 1/2" @ 1985'	130sx	
									Perf @ 1255'									
									50sx @ 651-1260'									
									Pull 433' of 5 1/2" csg									
									55sx @ 426-505'									
									30sx @ 238-413'									
									20sx @ 60' to Surface									
NM Institute of Mining & Tech	Sulimar Queen Unit #3	30-005-60217	Chaves	2310 FSL 2310 FEL	26	15S	29E	Oil Well	P&A 5/31/2006	6/4/1972	7/7/1972	1975'	1974'	Queen	1938-1948'	8 5/8" @ 250'	100sx	
									25sx @ 1539-1858'							4 1/2" @ 1975'	150sx	
									Perfs @ 1238'									
									30sx @ 854-1291'									
									Pull 320' of 4 1/2" Csg									
									55sx @ 238-378'									
									67sx @ 238' to Surface									
Pre-Ongard Well Operator	Pre-Ongard Well #3	30-005-60130	Chaves	1980 FSL 1980 FEL	26	15S	29E	Dry	P&A 7/27/1970	6/29/1970	7/16/1970	1997'		Queen		8 5/8" @ 421'	175sx	
Cities Service Oil Company	Snyder Federal #3								35sx @ 1885-1995'									
									35sx @ 1150-1260'									
									35sx @ 375-430'									
									10sx @ 30' to Surface									
NM Institute of Mining & Tech	Sulimar Queen Unit #4	30-005-60070	Chaves	1980 FSL 1980 FEL	24	15S	29E	Oil	P&A 4/10/2006	4/12/1969	4/28/1969	2038'	2034'	Queen	1989-2018'	8 5/8" @ 401'	50sx	
									25sx @ 1827-1960							5 1/2" @ 2038'	150sx	
									Perf @ 1287', 30sx 976-1323'									
									Perf @ 455'									
									25sx @ 291'-504'									
									Perf @ 92', SQZ 27sx @ 92' to Surface									
NM Institute of Mining & Tech	Sulimar Queen Unit #3	30-005-60073	Chaves	660 FNL 2310 FWL	24	15S	29E	Oil	P&A 2/9/2006	5/2/1969	5/19/1969	2025'	2019'	Queen	1980-1992'	8 5/8" @ 398'	50sx	
									25sx @ 1788-1958'							5 1/2" @ 2020'	150sx	
									Perf @ 1286									
									25sx @ 1154-1333'									
									Pull 433' of 5 1/2" csg									
									45sx @ 349-496'									
									Perf @ 250'									
									SQZ 100sx @ 250 to surface									
Read & Stevens Inc	Sulimar #1	30-005-60194	Chaves	1800 FSL 2150 FWL	26	15S	29E	Oil	P&A 8/29/2002	10/7/1971	10/26/1971	1957'	1940'	Queen	1916-1932'	8 5/8" @ 318'	200sx	

									CIBP @ 1900' 35' cmt top							4 1/2" @ 1957'	150sx
									40sx @ 746-850'								
									Pulled 788' of 4 1/2" csg								
									40sx @ 302-378'								
									25sx @ 222-302'								
									15sx @ 60 to surface								

P&A 12/10/2022

Sarilyn Federal #1 30-005-64370

Operator: Mack Energy Corporation
Location: Sec. 23 T15S R29E
324 FSL 1639 FEL
Objective: San Andres
GL Elevation: 3937'

Depth	Hole Size & Cement	Casing Detail
	10' Hole 8 5/8" Set in 12/6/1980 200sx CMT Circ to Surface	Plug @ Surface w/ 42sx CMT 104sx Plug @ 92'
423'		
	7 7/8" Hole	
4018'		
		37sx Plug @ 503'
		60sx Plug @ 1250'
		70sx Plug @ 3923'
		50sx Plug @ 3967'
		45sx Plug @ 3993'
		35sx Plug @ 4018'
	TD- 4018'	

P&A 12/28/1969

Getty Federal #1 30-005-60103

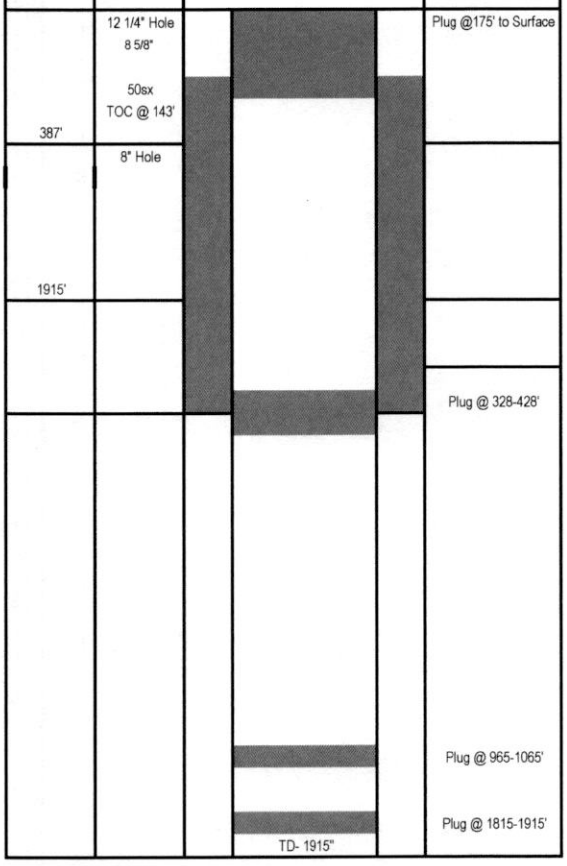
Operator: jack L McClellan

Location: Sec. 23 T15S R29E

330 FSL 2310 FWL

Objective: Undesignated

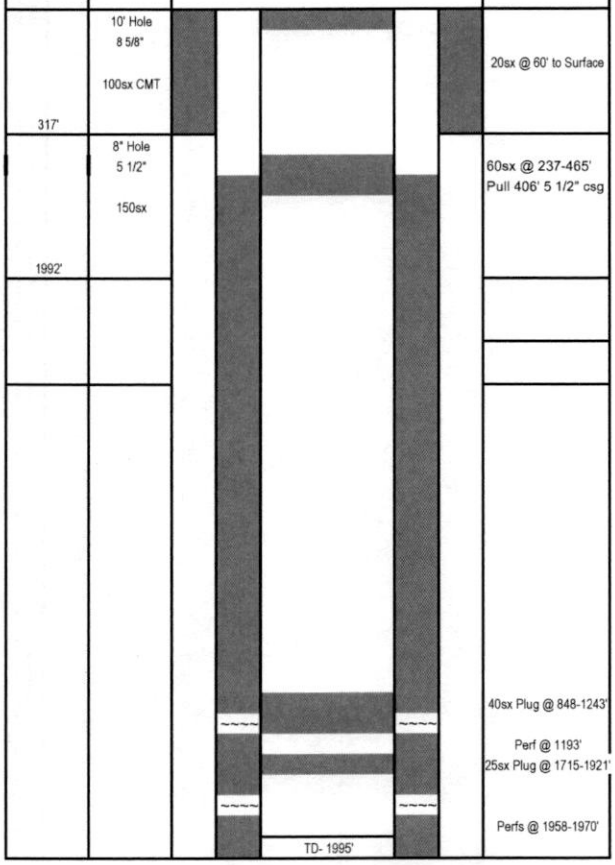
GL Elevation: 3920'



P&A 2/20/2006

Sulimar Queen Unit #9 30-005-60121

Operator: NM Institute of Mining and Tech
Location: Sec. 13 T15S R29E
330 FSL 990 FWL
Objective: Queen
GL Elevation: 3938'

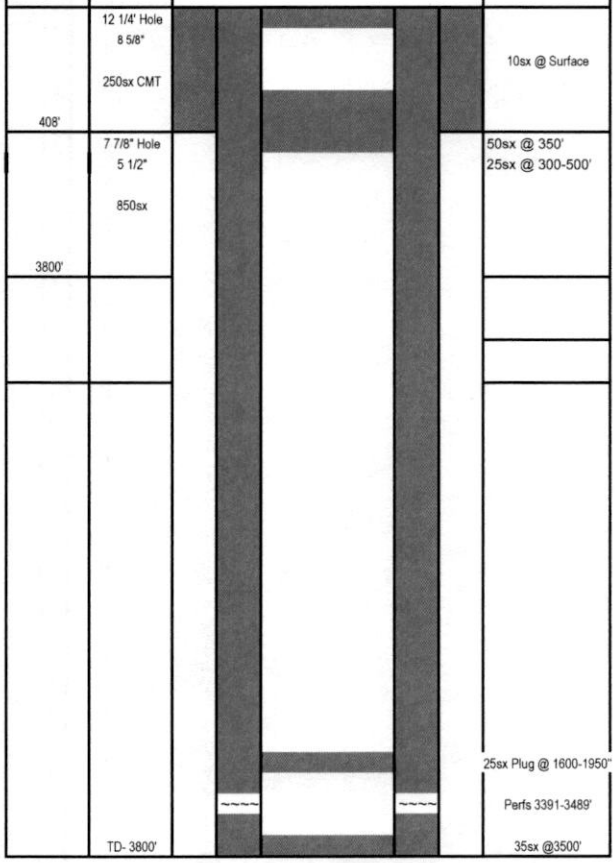


P&A 1/22/1986

Pre-Ongard Well #1 30-005-62275

Operator: Pre-Ongard Well Operator
Location: Sec. 23 T15S R29E
660 FNL 1980 FEL
Objective: San Andres
GL Elevation: 3921'

Depth	Hole Size & Cement	Casing Detail
	12 1/4' Hole 8 5/8" 250sx CMT	10sx @ Surface
408'		
	7 7/8" Hole 5 1/2" 850sx	50sx @ 350' 25sx @ 300-500'
3800'		
		25sx Plug @ 1600-1950'
		Perfs 3391-3489'
	TD- 3800'	35sx @3500'



P&A 2/15/2006

Sulimar Queen Unit #12 API # 30-005-60385

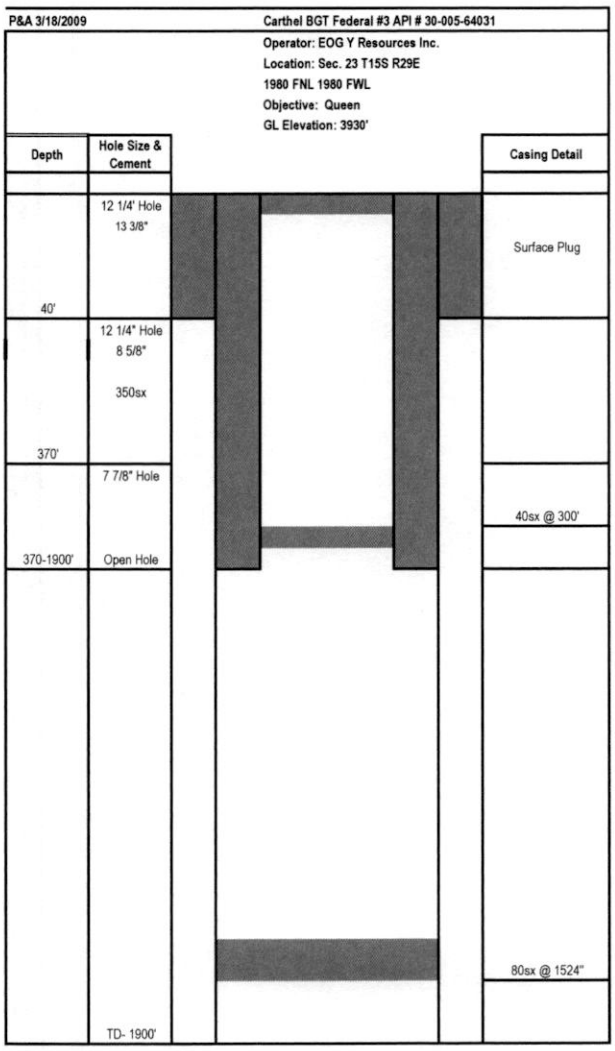
Operator: NM Institute of Mining & Tech
Location: Sec. 24 T15S R29E
810 FNL 1490 FWL
Objective: Queen
GL Elevation: 3930'

Depth	Hole Size & Cement	Casing Detail
	10 1/4' Hole 8 5/8" 100sx CMT	20sx @ 60' to Surface
380'		
	8" Hole 5 1/2" 150sx	60sx @ 328-535' Pull 475' 5 1/2" csg
2010'		
		25sx @ 1093-1323' Perfs @ 1277'
		25sx @1675-1921'
		Perfs 1960-1970'
	TD- 2012'	

P&A 3/18/2009

Carthel BGT Federal #3 API # 30-005-64031

Operator: EOG Y Resources Inc.
Location: Sec. 23 T15S R29E
1980 FNL 1980 FWL
Objective: Queen
GL Elevation: 3930'



P&A 3/28/2006

Sulimar Queen Unit #2 API # 30-005-60068

Operator: NM Institute of Mining & Tech

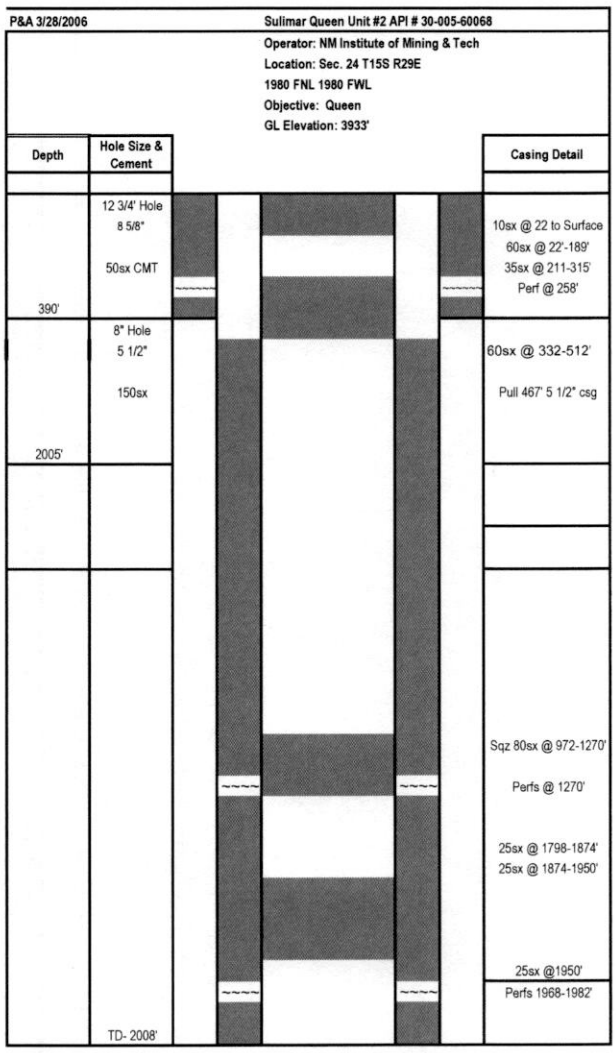
Location: Sec. 24 T15S R29E

1980 FNL 1980 FWL

Objective: Queen

GL Elevation: 3933'

Depth	Hole Size & Cement	Casing Detail
390'	12 3/4' Hole 8 5/8" 50sx CMT	10sx @ 22 to Surface 60sx @ 22'-189' 35sx @ 211-315' Perf @ 258'
2005'	8" Hole 5 1/2" 150sx	60sx @ 332-512' Pull 467' 5 1/2" csg
		Sqz 80sx @ 972-1270' Perfs @ 1270' 25sx @ 1798-1874' 25sx @ 1874-1950'
TD- 2008'		25sx @1950' Perfs 1968-1982'



P&A 3/24/1986

Sulimar Queen Unit #11 API # 30-005-60370

Operator: NM Institute of Mining & Tech

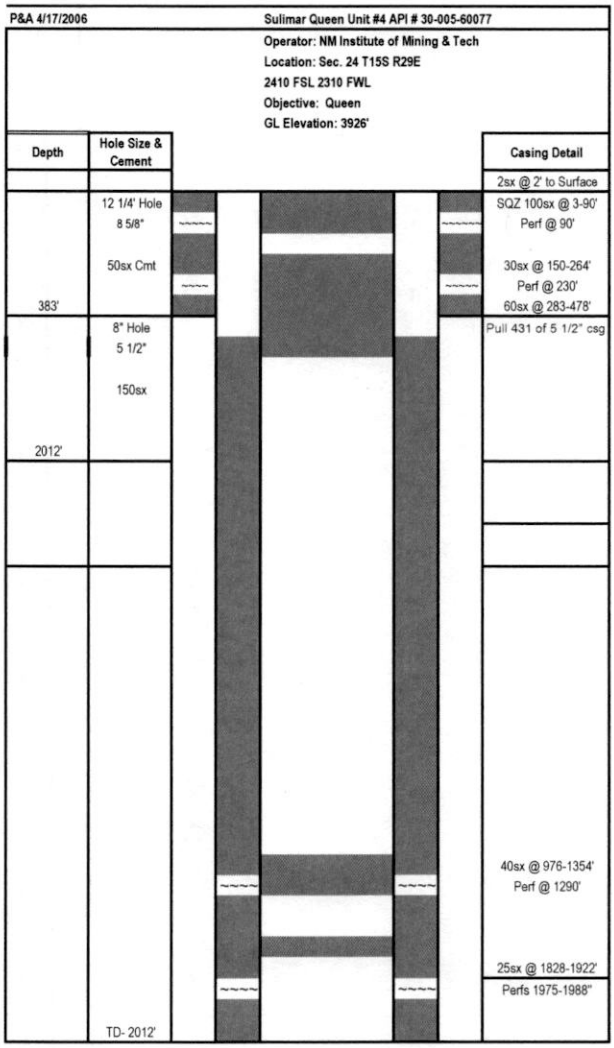
Location: Sec. 24 T15S R29E

2615 FSL 1370 FWL

Objective: Queen

GL Elevation: 3536'

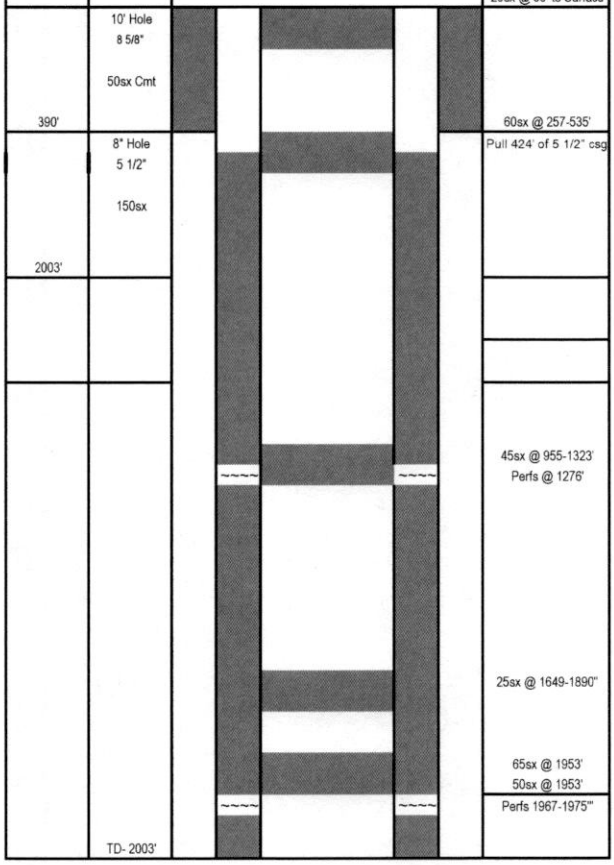
Depth	Hole Size & Cement	Casing Detail
	10 3/4' Hole 8 5/8" 200sx CMT	Cmt Plug @60' to Surface
387'		
	8" Hole 5 1/2" 150sx	25sx @ 450' 50sx between 5 1/2 & 8 5/8" csg
2014'		
		30sx @ 1980'
		Perfs 1970-1980'
TD- 2015'		


P&A 4/17/2006
Sulimar Queen Unit #4 API # 30-005-60077
Operator: NM Institute of Mining & Tech
Location: Sec. 24 T15S R29E
2410 FSL 2310 FWL
Objective: Queen
GL Elevation: 3926'
Depth
Hole Size & Cement
Casing Detail
2sx @ 2' to Surface
12 1/4' Hole
8 5/8"
50sx Cmt
383'
SQZ 100sx @ 3-90'
Perf @ 90'
30sx @ 150-264'
Perf @ 230'
60sx @ 283-478'
8" Hole
5 1/2"
150sx
2012'
Pull 431 of 5 1/2" csg
40sx @ 976-1354'
Perf @ 1290'
25sx @ 1828-1922'
Perfs 1975-1988"
TD- 2012'

P&A 5/4/2006

Sulimar Queen Unit #6 API # 30-005-60085

Operator: NM Institute of Mining & Tech
Location: Sec. 24 T15S R29E
1650 FSL 660 FWL
Objective: Queen
GL Elevation: 3948'

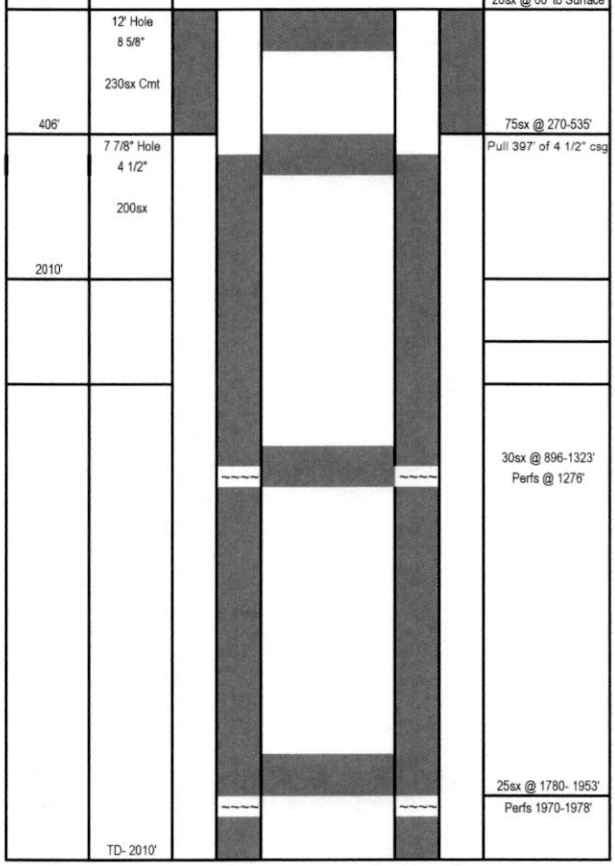


P&A 4/28/2006

Sulimar Queen Unit #14 API # 30-005-60612

Operator: NM Institute of Mining & Tech
Location: Sec. 24 T15S R29E
1345 FSL 1450 FWL
Objective: Queen
GL Elevation: 3937'

Depth	Hole Size & Cement	Casing Detail
		20sx @ 60' to Surface
406'	12' Hole 8 5/8" 230sx Cmt	75sx @ 270-535'
2010'	7 7/8" Hole 4 1/2" 200sx	Pull 397' of 4 1/2" csg
		30sx @ 896-1323' Perfs @ 1276'
		25sx @ 1780- 1953'
TD- 2010'		Perfs 1970-1978'

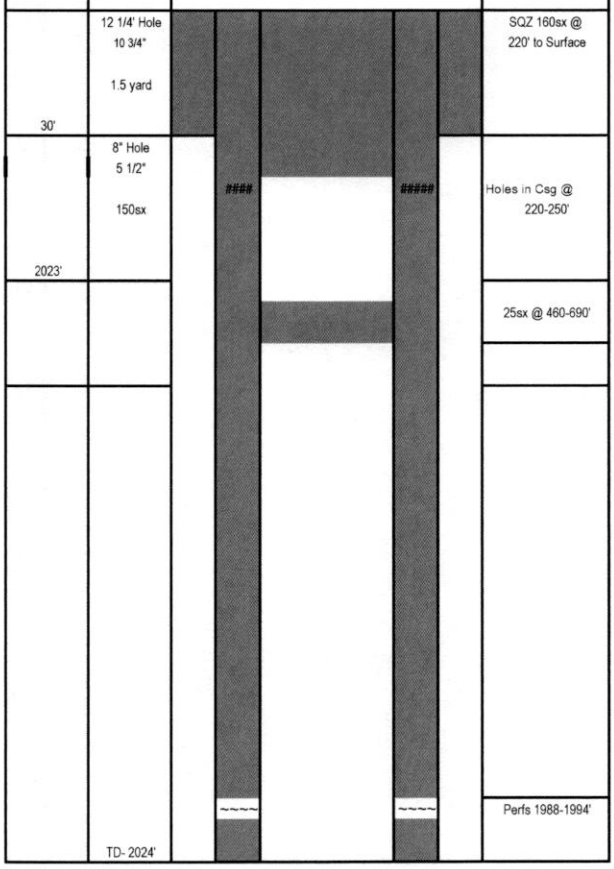


P&A 6/6/2006

Sulimar Queen Unit #6 API # 30-005-60318

Operator: NM Institute of Mining & Tech
Location: Sec. 24 T15S R29E
990 FSL 2310 FEL
Objective: Queen
GL Elevation: 3929'

Depth	Hole Size & Cement	Casing Detail
30'	12 1/4' Hole 10 3/4" 1.5 yard	SQZ 160sx @ 220' to Surface
2023'	8" Hole 5 1/2" 150sx	Holes in Csg @ 220-250'
		25sx @ 460-690'
TD- 2024'		Perfs 1988-1994'



P&A 4/24/2006

Sulimar Queen Unit #5 API # 30-005-60081

Operator: NM Institute of Mining & Tech

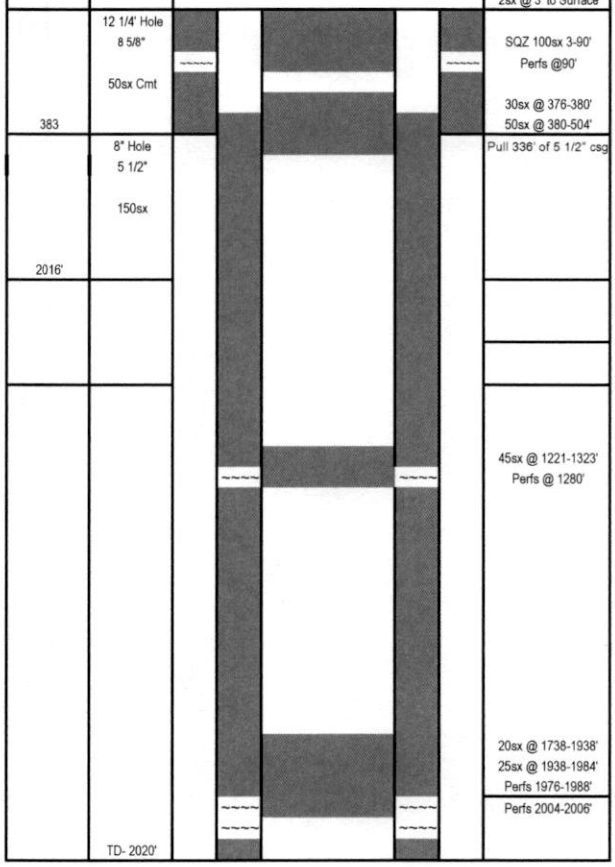
Location: Sec. 24 T15S R29E

660 FSL 1980 FWL

Objective: Queen

GL Elevation: 3907'

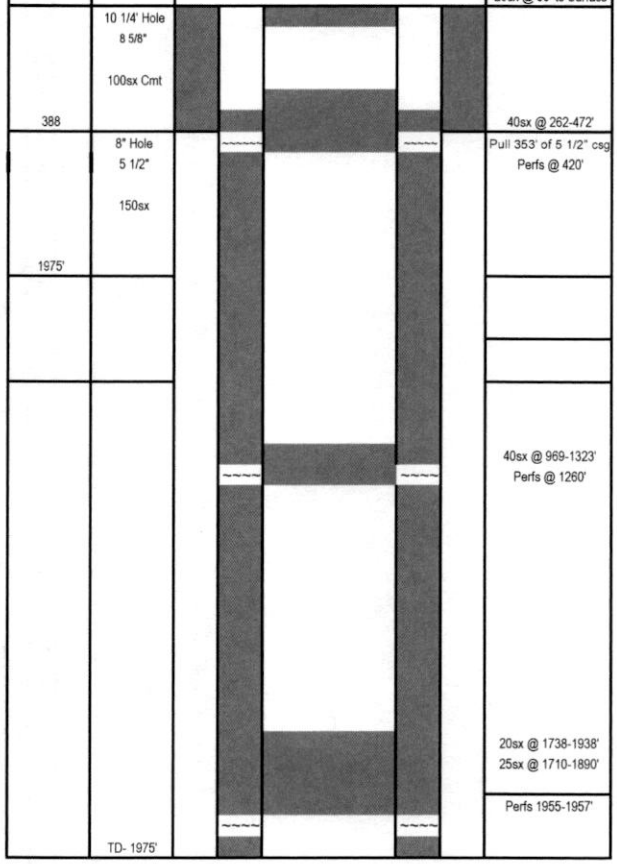
Depth	Hole Size & Cement	Casing Detail
		2sx @ 3' to Surface
383	12 1/4' Hole 8 5/8" 50sx Cmt	SQZ 100sx 3-90' Perfs @90' 30sx @ 376-380' 50sx @ 380-504'
2016'	8" Hole 5 1/2" 150sx	Pull 336' of 5 1/2" csg
		45sx @ 1221-1323' Perfs @ 1280'
		20sx @ 1738-1938' 25sx @ 1938-1984' Perfs 1976-1988'
TD- 2020'		Perfs 2004-2006'



P&A 5/9/2006

Sulimar Queen Unit #13 API # 30-005-60433

Operator: NM Institute of Mining & Tech
Location: Sec. 24 T15S R29E
990 FSL 150 FWL
Objective: Queen
GL Elevation: 3926'



P&A 7/21/1992

Pre-Ongard Well #10 API # 30-005-60331

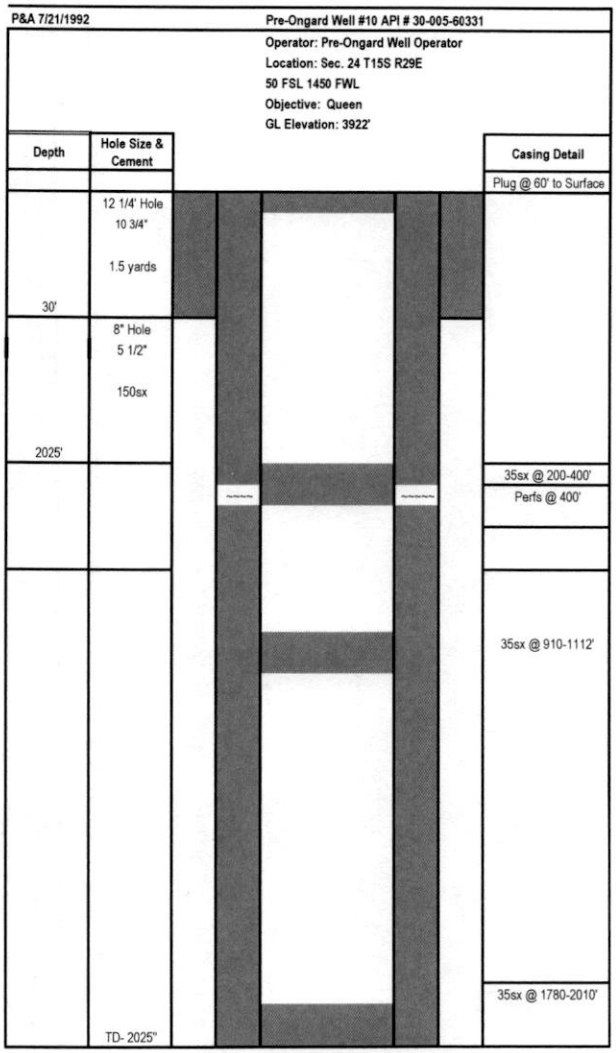
Operator: Pre-Ongard Well Operator

Location: Sec. 24 T15S R29E

50 FSL 1450 FWL

Objective: Queen

GL Elevation: 3922'



P&A 5/11/2006

Sulimar Queen Unit #7 API # 30-005-60091

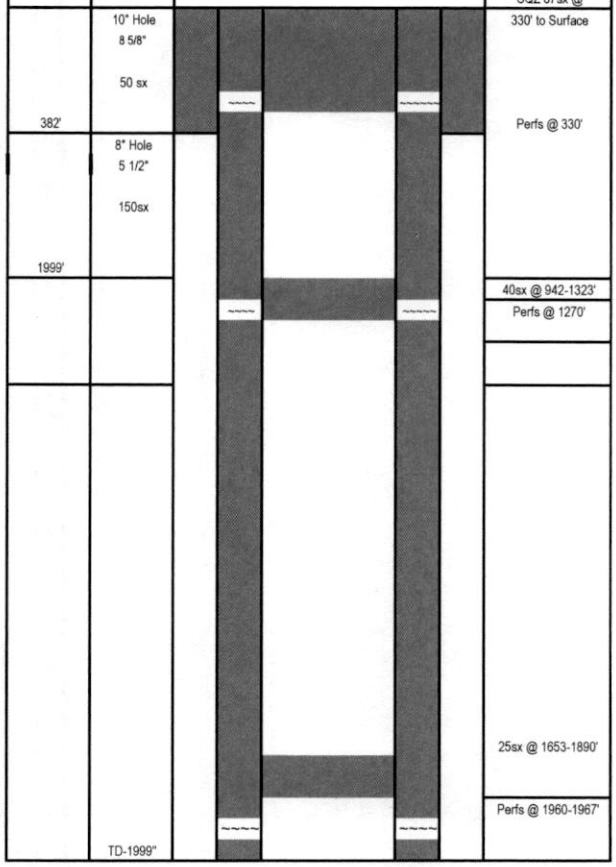
Operator: NM Institute of Mining & Tech

Location: Sec. 24 T15S R29E

330 FSL 660 FWL

Objective: Queen

GL Elevation: 3927'

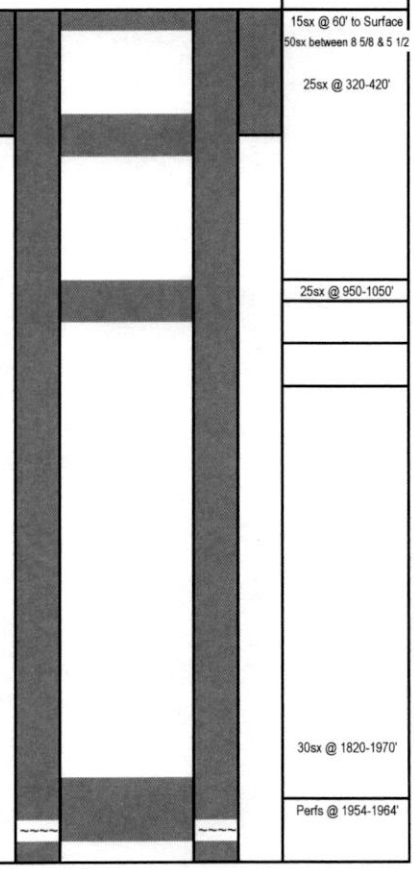


P&A 3/24/1986

Sulimar Queen Unit #2 API # 30-005-60100

Operator: NM Institute of Mining & Tech
Location: Sec. 23 T15S R29E
330 FSL 330 FEL
Objective: Queen
GL Elevation: 3938'

Depth	Hole Size & Cement	Casing Detail
	12 1/2" Hole 8 5/8" 50 sx	15sx @ 60' to Surface 50sx between 8 5/8 & 5 1/2 25sx @ 320-420'
364'		
	8" Hole 5 1/2" 150sx	
1992'		
		25sx @ 950-1050'
		30sx @ 1820-1970'
		Perfs @ 1954-1964'
TD-1994'		

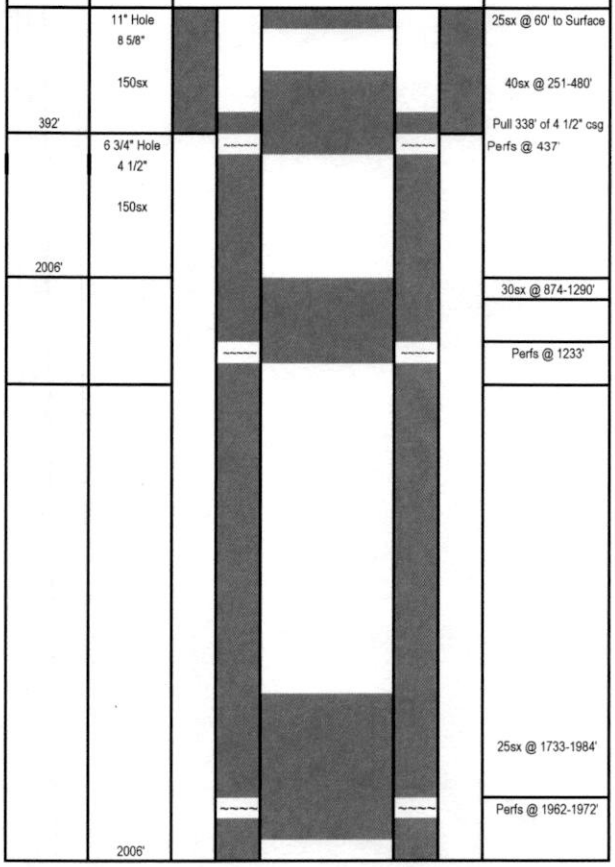


P&A 5/18/2006

Sulimar Queen Unit #1 API # 30-005-60095

Operator: NM Institute of Mining & Tech
Location: Sec. 26 T15S R29E
330 FNL 330 FEL
Objective: Queen
GL Elevation: 3935'

Depth	Hole Size & Cement	Casing Detail
392'	11" Hole 8 5/8" 150sx	25sx @ 60' to Surface 40sx @ 251-480' Pull 338' of 4 1/2" csg
2006'	6 3/4" Hole 4 1/2" 150sx	Perfs @ 437'
		30sx @ 874-1290'
		Perfs @ 1233'
2006'		25sx @ 1733-1984' Perfs @ 1962-1972'



P&A 5/16/2006

Sulimar Queen Unit #1 API # 30-005-60087

Operator: NM Institute of Mining & Tech
Location: Sec. 25 T15S R29E
330 FNL 660 FWL
Objective: Queen
GL Elevation: 3919'

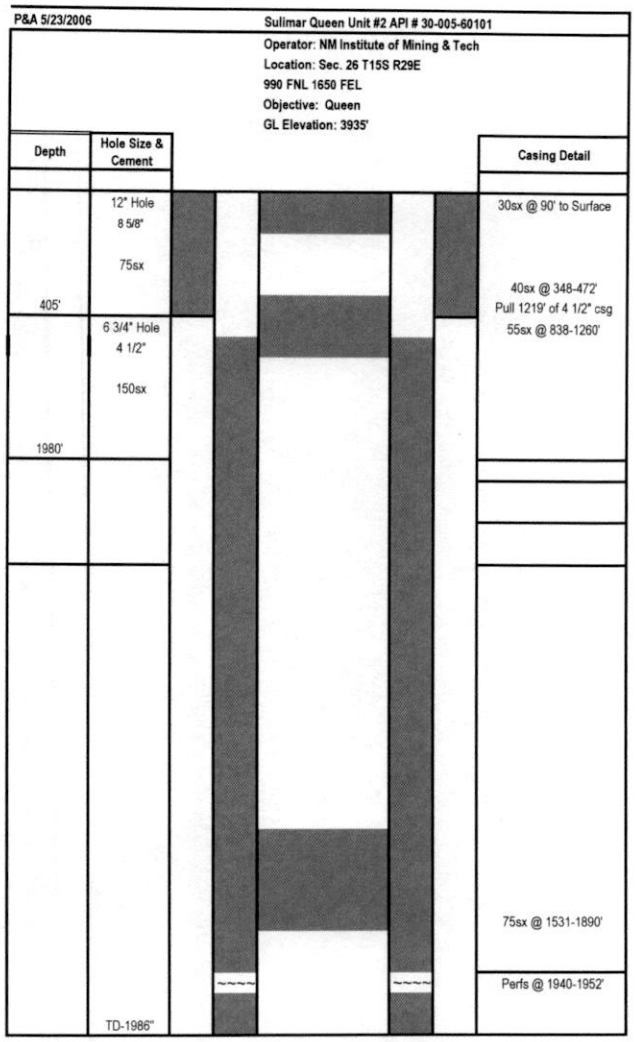
Depth	Hole Size & Cement	Casing Detail
385'	12" Hole 8 5/8" 50sx	5sx @ 14' to Surface SQZ 95sx @ 14-150' Holes in 8 5/8" csg 150+- 55sx @ 330-441' Pull 435' of 4 1/2" csg
1996'	7 7/8" Hole 4 1/2" 150sx	
		30sx @ 900-1323'
		Perfs @ 1254'
		25sx @ 1649-1827 Holes @ 1764-1850' 25sx @ 1850-1953'
TD-1996'		Perfs @ 1958-1970'

P&A 5/23/2006

Sulimar Queen Unit #2 API # 30-005-60101

Operator: NM Institute of Mining & Tech
Location: Sec. 26 T15S R29E
990 FNL 1650 FEL
Objective: Queen
GL Elevation: 3935'

Depth	Hole Size & Cement	Casing Detail
405'	12" Hole 8 5/8" 75sx	30sx @ 90' to Surface 40sx @ 348-472'
1980'	6 3/4" Hole 4 1/2" 150sx	Pull 1219' of 4 1/2" csg 55sx @ 838-1260'
		75sx @ 1531-1890'
TD-1986'		Perfs @ 1940-1952'



P&A 10/23/1969

Per-Ongard Well #2 API # 30-005-60094

Operator: NM Institute of Mining & Tech

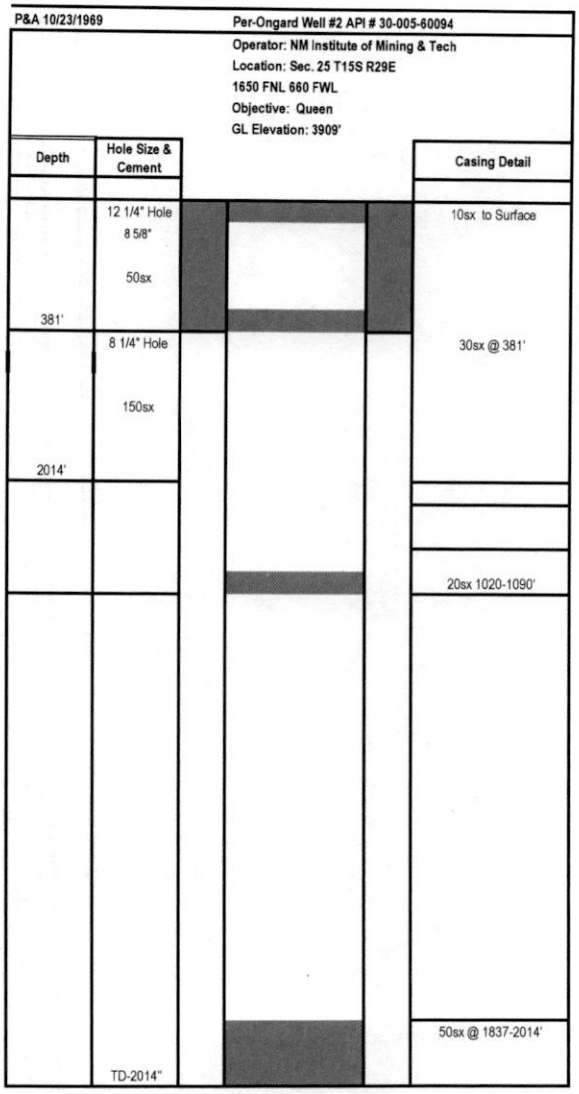
Location: Sec. 25 T15S R29E

1650 FNL 660 FWL

Objective: Queen

GL Elevation: 3909'

Depth	Hole Size & Cement	Casing Detail
381'	12 1/4" Hole 8 5/8" 50sx	10sx to Surface
2014'	8 1/4" Hole 150sx	30sx @ 381'
		20sx 1020-1090'
TD-2014"		50sx @ 1837-2014'

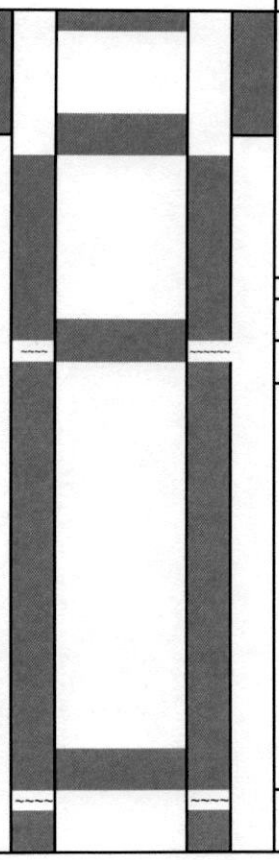


P&A 5/16/2006

Sulimar Queen Unit #1 API # 30-005-60115

Operator: NM Institute of Mining & Tech
Location: Sec. 26 T15S R29E
1650 FNL 9900 FEL
Objective: Queen
GL Elevation: 3926'

Depth	Hole Size & Cement	Casing Detail
	11 1/4" Hole 8 5/8" 175sx	20sx @ 60' to Surface 50sx @ 368-504'
425'		Pull 456' of 5 1/2" csg
	7 7/8" Hole 5 1/2" 135sx	
2004		45sx @ 935-1323'
		Perfs @ 1250'
		50sx @ 1842-1984'
		Perfs @ 1973-1982'
TD-2005'		



P&A 10/8/1970

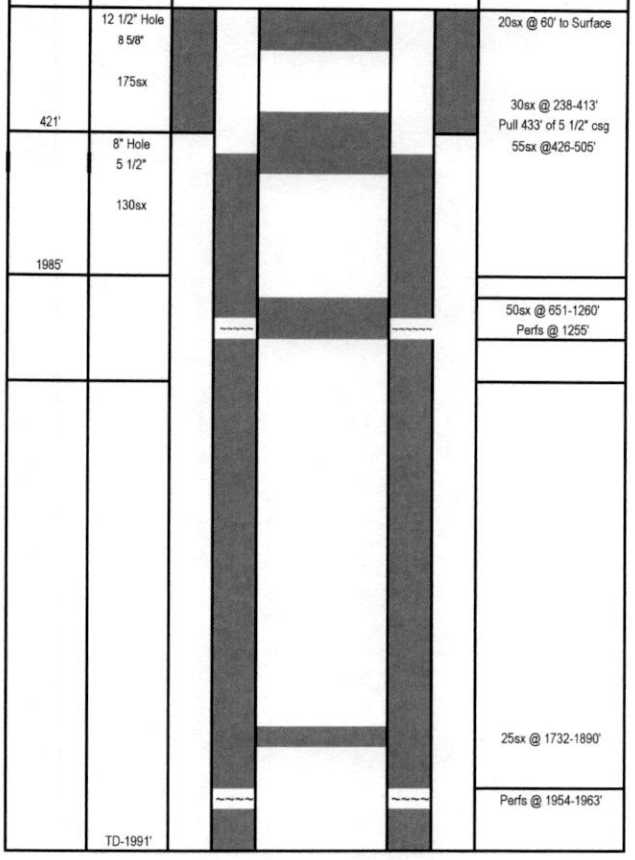
Per-Ongard Well #1 API # 30-005-60139
Operator: Pre-Ongard Well Operator
Location: Sec. 26 T15S R29E
2310 FNL 2310 FWL
Objective: Queen
GL Elevation: 3905'

Depth	Hole Size & Cement	Casing Detail
	12 1/4" Hole 8 5/8" 275sx	10sx to Surface
411'		28sx @ 364-465'
2014'		
		28sx 1035-1135'
		28sx @ 1850-1950'
	TD-2113"	

P&A 6/02/2006

Sulimar Queen Unit #2 API # 30-005-60120

Operator: NM Institute of Mining & Tech
Location: Sec. 26 T15S R29E
2310 FNL 1650 FEL
Objective: Queen
GL Elevation: 3915'

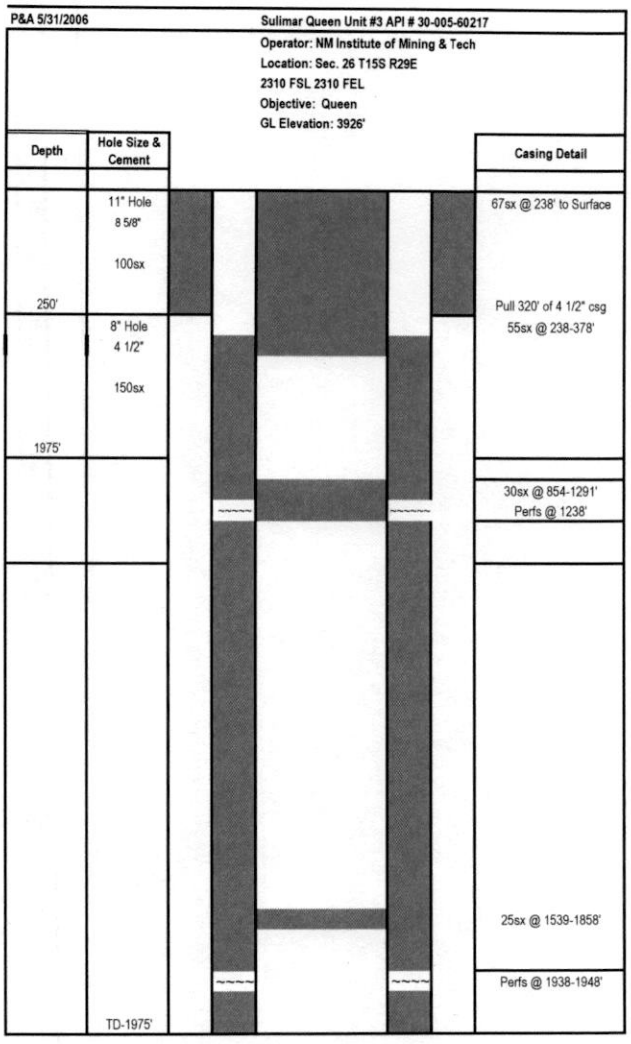


P&A 5/31/2006

Sulimar Queen Unit #3 API # 30-005-60217

Operator: NM Institute of Mining & Tech
Location: Sec. 26 T15S R29E
2310 FSL 2310 FEL
Objective: Queen
GL Elevation: 3926'

Depth	Hole Size & Cement	Casing Detail
	11" Hole 8 5/8" 100sx	67sx @ 238' to Surface
250'		Pull 320' of 4 1/2" csg
	8" Hole 4 1/2" 150sx	55sx @ 238-378'
1975'		
		30sx @ 854-1291'
		Perfs @ 1238'
		25sx @ 1539-1858'
		Perfs @ 1938-1948'
	TD-1975'	



P&A 7/27/1970

Pre-Ongard Well #3 API # 30-005-60130

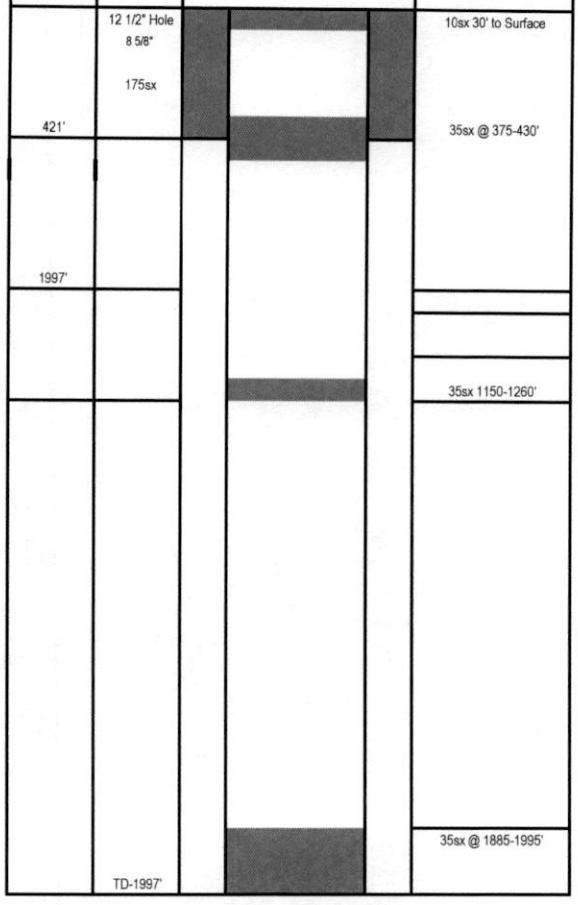
Operator: Pre-Ongard Well Operator

Location: Sec. 26 T15S R29E

1980 FSL 1980 FEL

Objective: Queen

GL Elevation: 2915'



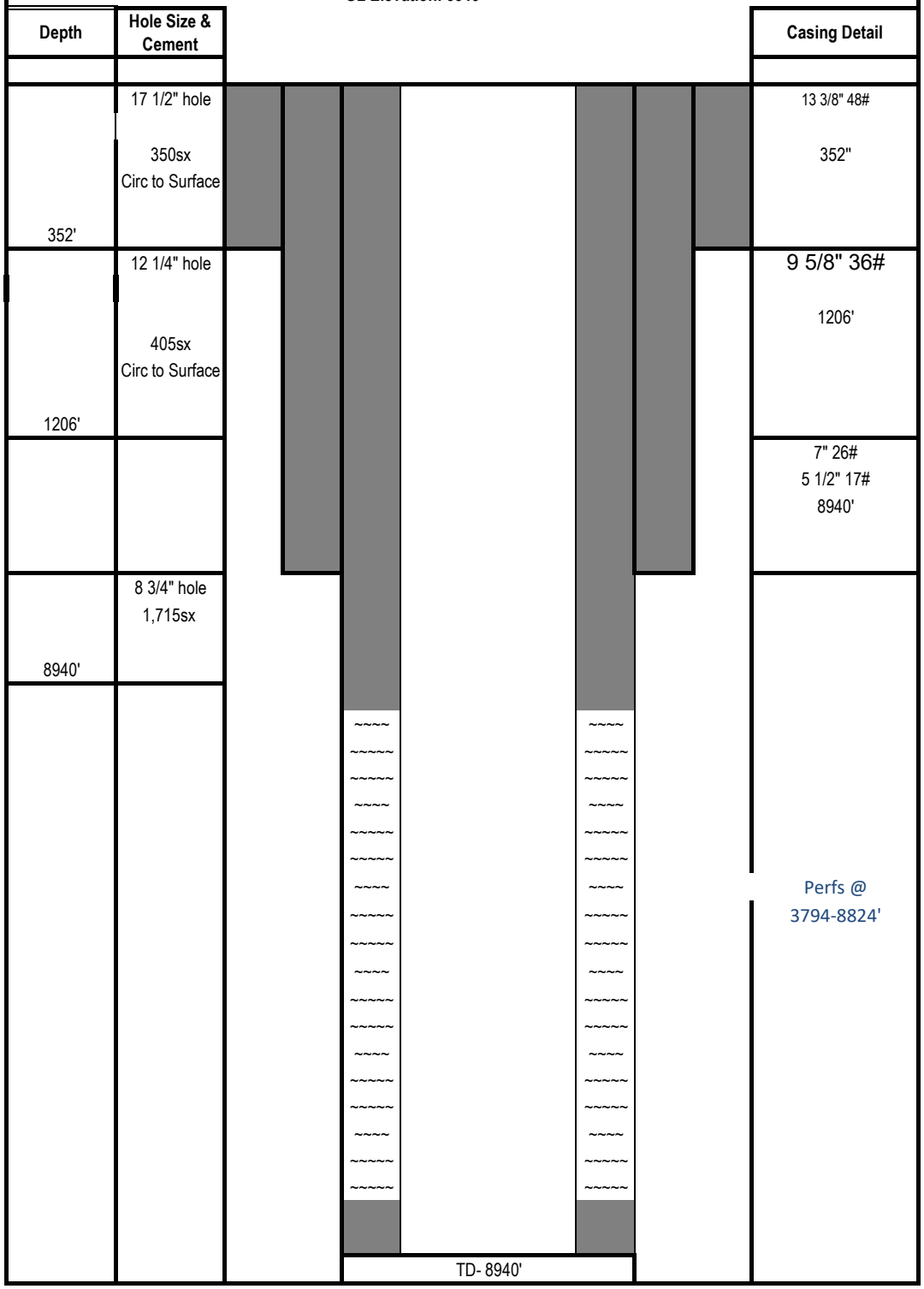
Powell River Federal Com #1H

Operator: Mack Energy Corporation
Location: Sec. 14 T15S R29E
602 FSL 990 FEL
Objective: San Andres
GL Elevation: 3920'

Depth	Hole Size & Cement	Casing Detail
252'	17 1/2" hole 417sx Circ to Surface	13 3/8" 48# 252'
1230'	12 1/4" hole 848sx Circ to Surface	9 5/8" 36# 1230'
9025'	8 3/4" hole 1,240sx TOC @ 1800'	7" 26# 5 1/2" 17# 9025'
TD- 9,025'		Perfs @ 3831-8917'

Maple Ridge Federal #1H

Operator: Mack Energy Corporation
Location: Sec. 23 T15S R29E
565 FNL 2285 FEL
Objective: San Andres
GL Elevation: 3919'

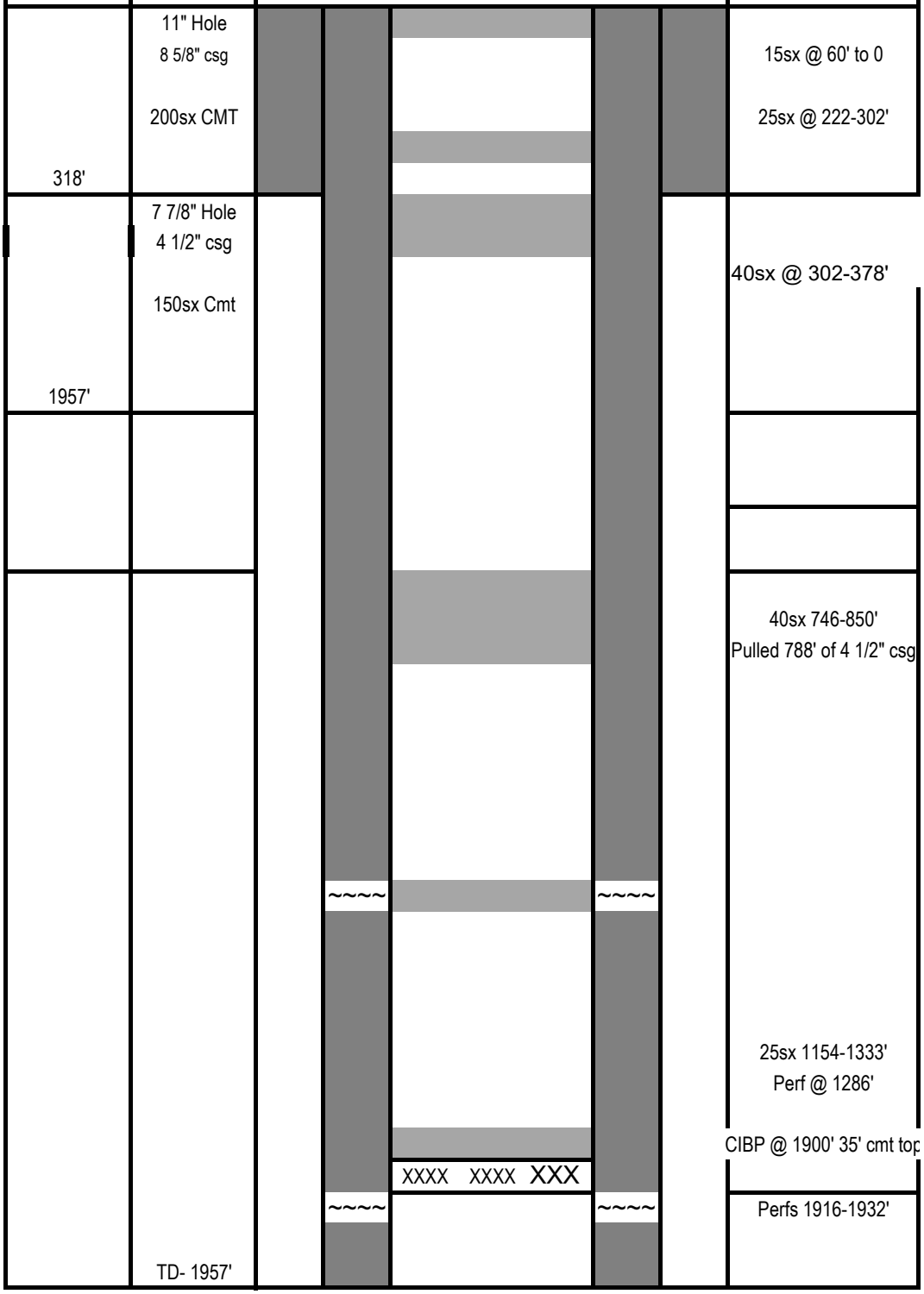


P&A 8/29/2002

Sulimar #1 API # 30-005-60194

Operator: Read & Stevens
Location: Sec. 26 T15S R29E
1800 FSL 2150 FWL
Objective: Queen
GL Elevation: 3881'

Depth	Hole Size & Cement	Casing Detail
	11" Hole 8 5/8" csg 200sx CMT	15sx @ 60' to 0 25sx @ 222-302'
318'		
	7 7/8" Hole 4 1/2" csg 150sx Cmt	40sx @ 302-378'
1957'		
		40sx 746-850' Pulled 788' of 4 1/2" csg
		25sx 1154-1333' Perf @ 1286'
		CIBP @ 1900' 35' cmt top
		Perfs 1916-1932'
	TD- 1957'	



P&A 4/17/2006

Sulimar Queen Unit #4 API # 30-005-60077

Operator: NM Institute of Mining & Tech
Location: Sec. 24 T15S R29E
2410 FSL 2310 FWL
Objective: Queen
GL Elevation: 3926'

Depth	Hole Size & Cement	Casing Detail
		2sx @ 2' to Surface
	12 1/4' Hole	SQZ 100sx @ 3-90'
	8 5/8"	Perf @ 90'
	50sx Cmt	30sx @ 150-264'
383'		Perf @ 230'
		60sx @ 283-478'
	8" Hole	Pull 431 of 5 1/2" csg
	5 1/2"	
	150sx	
2012'		
		40sx @ 976-1354'
		Perf @ 1290'
		25sx @ 1828-1922'
		Perfs 1975-1988"
	TD- 2012'	

P&A 2/9/2006

Sulimar Queen Unit #3 API # 30-005-60073

Operator: NM Institute of Mining & Tech
Location: Sec. 24 T15S R29E
660 FNL 2310 FWL
Objective: Queen
GL Elevation: 3936'

Depth	Hole Size & Cement	Casing Detail
	12 3/4' Hole 8 5/8" csg 50sx CMT	100sx @ 250' to 0 Perf @ 250'
398'		
	8" Hole 5 1/2" csg 150sx	45sx @ 349-496'
2020'		
		Pulled 433' of 5 1/2" csg
		25sx 1154-1333' Perf @ 1286'
		25sx @ 1788-1958'
		Perfs 1980-1992'
	TD- 2025'	

P&A 8/29/2002

Sulimar #1 API # 30-005-60194

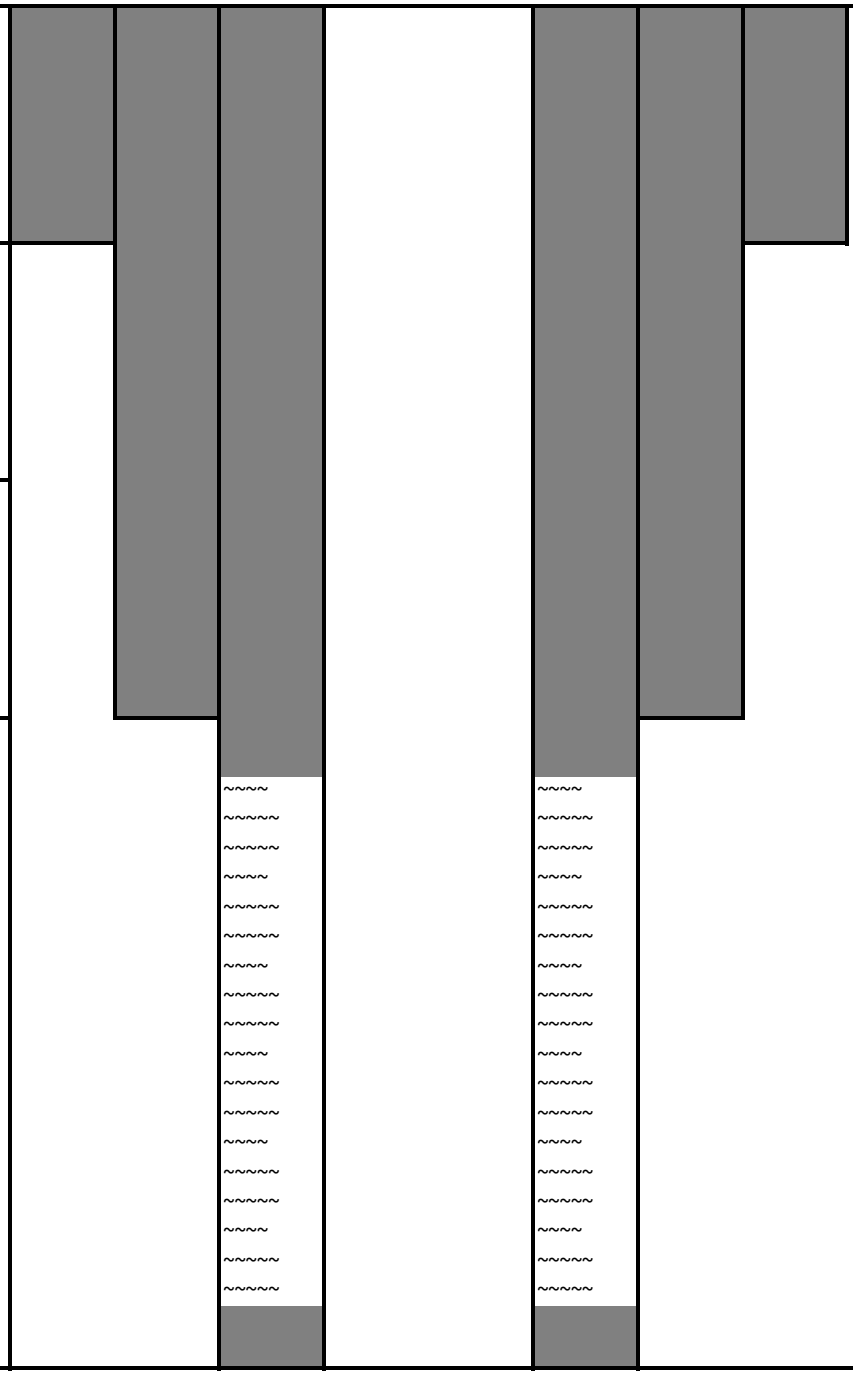
Operator: Read & Stevens
Location: Sec. 26 T15S R29E
1800 FSL 2150 FWL
Objective: Queen
GL Elevation: 3881'

Depth	Hole Size & Cement	Casing Detail
	11" Hole 8 5/8" csg 200sx CMT	15sx @ 60' to 0 25sx @ 222-302'
318'		
	7 7/8" Hole 4 1/2" csg 150sx Cmt	40sx @ 302-378'
1957'		
		40sx 746-850' Pulled 788' of 4 1/2" csg
		25sx 1154-1333' Perf @ 1286'
		CIBP @ 1900' 35' cmt top
		Perfs 1916-1932'
	TD- 1957'	

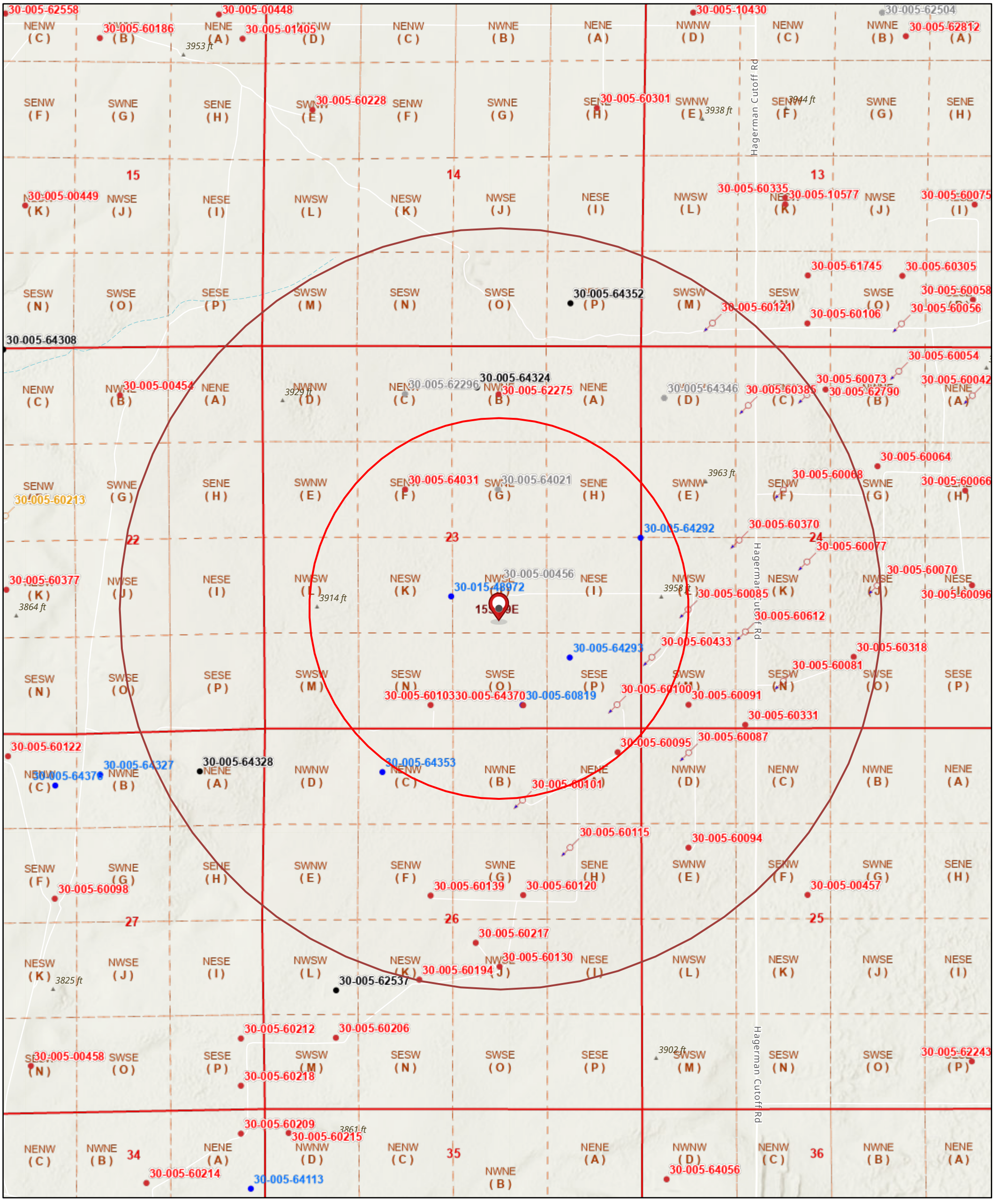
Grand Fork Federal Com #2H

Operator: Mack Energy Corporation
Location: Sec.27 T15S R29E
565 FNL 900 FEL
Objective: San Andres
GL Elevation: 3880'

Depth	Hole Size & Cement	Casing Detail
303'	17 1/2" hole 1020sx Circ to Surface	13 3/8" 48# 303'
1193'	12 1/4" hole 410sx Circ to Surface	9 5/8" 36# 1193'
9005'	8 3/4" hole 1820sx	7" 26# 5 1/2" 17# 9005'
TD- 9,012''		Perfs @ 3819-8920'



Map



2/15/2024, 10:37:54 AM

Override 1

Wells - Large Scale

- Gas, Cancelled
- Injection, Plugged
- Injection, Temporarily Abandoned
- Oil, Active
- Oil, Cancelled
- Oil, New
- Oil, Plugged
- PLSS Second Division
- PLSS First Division
- PLSS Townships

1:18,056

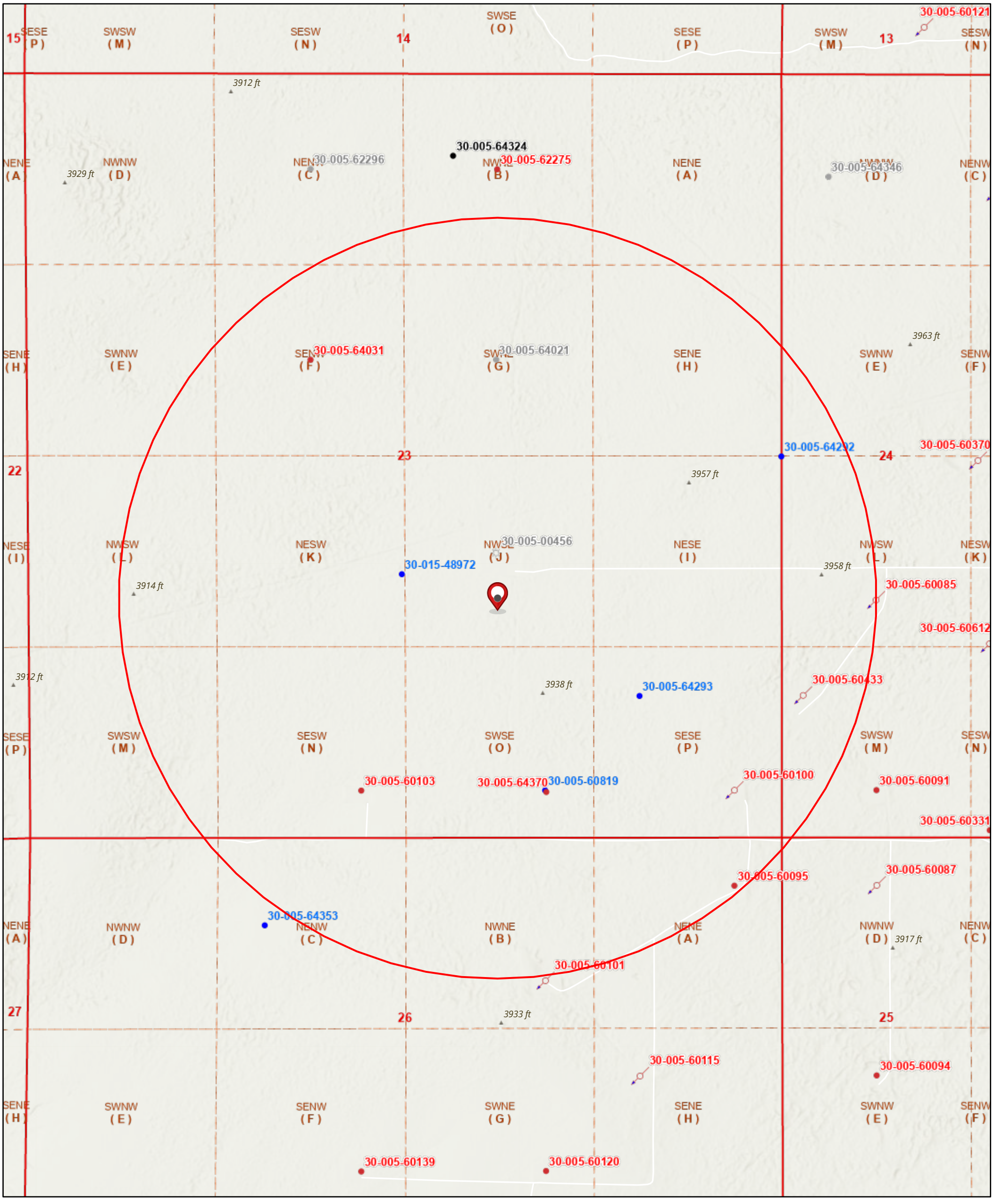
0 0.17 0.35 0.7 mi

0 0.28 0.55 1.1 km

Esri, NASA, NGA, USGS, FEMA, Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department., OCD, Esri Community Maps Contributors, New Mexico State University, Texas Parks & Wildlife, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/

New Mexico Oil Conservation Division

0.50 Mile Map



2/15/2024, 10:33:04 AM

Wells - Large Scale

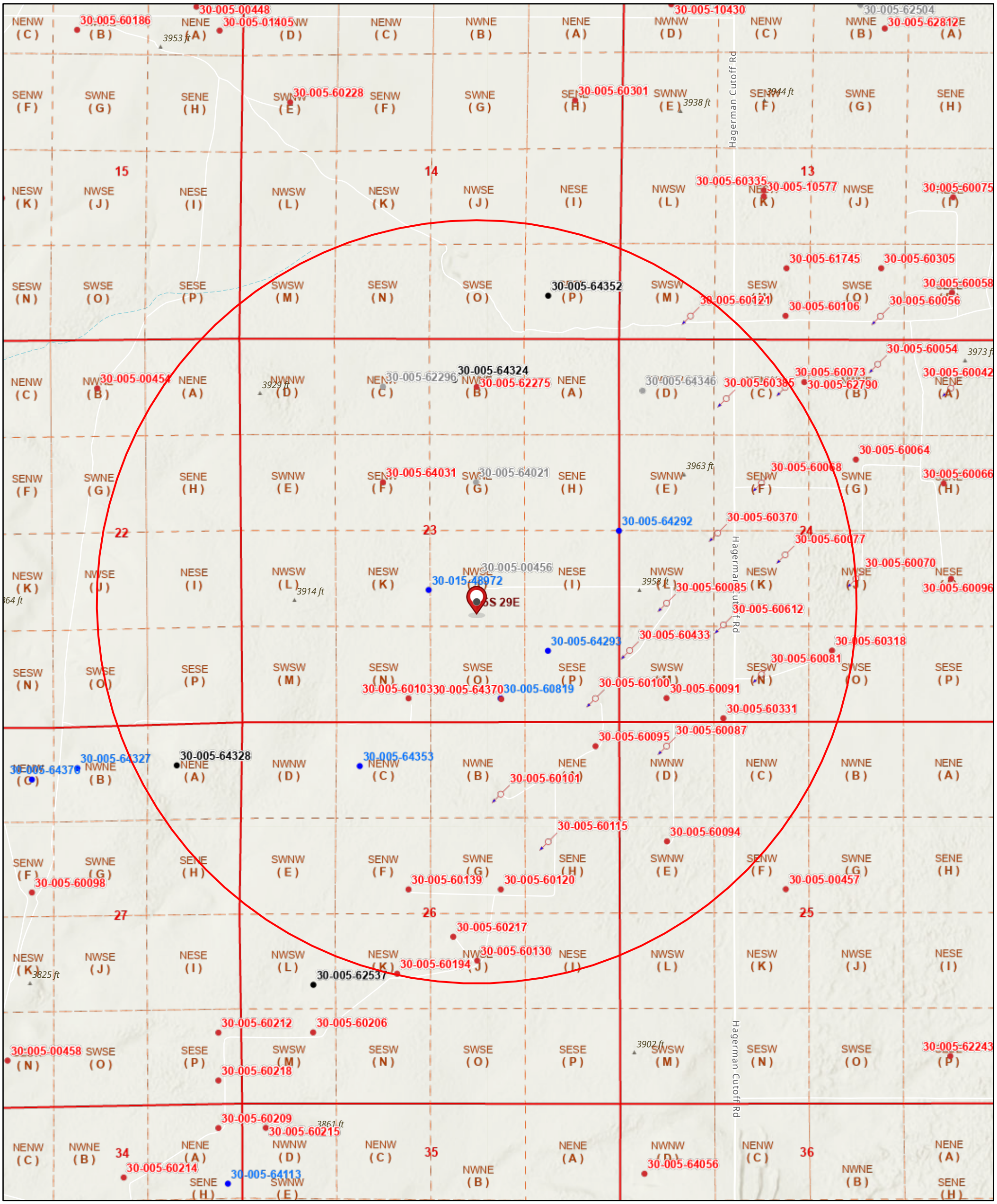
- Gas, Cancelled
- Injection, Plugged
- Oil, Active
- Oil, Cancelled
- Oil, New
- Oil, Plugged
- PLSS Second Division
- PLSS First Division

1:9,028

0 0.07 0.15 0.3 mi

0 0.13 0.25 0.5 km

1 Mile Map



2/15/2024, 10:26:11 AM

Wells - Large Scale

- Gas, Cancelled
- Injection, Plugged
- Oil, Active
- Oil, Cancelled
- Oil, New
- Oil, Plugged
- PLSS Second Division
- PLSS First Division
- PLSS Townships

1:18,056

0 0.17 0.35 0.7 mi

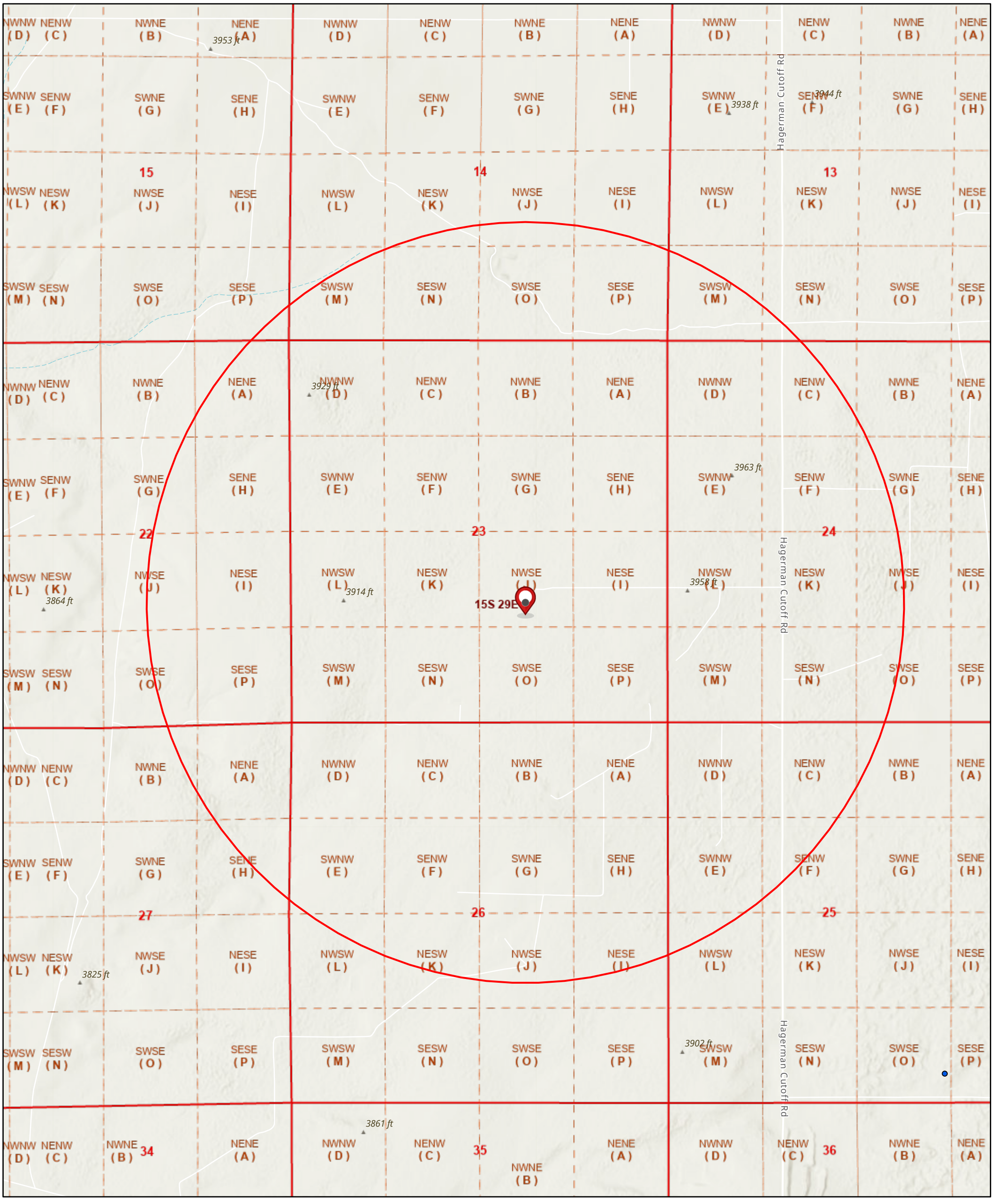
0 0.28 0.55 1.1 km

Esri, NASA, NGA, USGS, FEMA, Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department., OCD, Esri Community Maps Contributors, New Mexico State University, Texas Parks & Wildlife, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/

Underground Sources of Drinking Water- There is no USDW present.

Seismicity Risk Assessment- There is no risk of induced Seismicity.

POD Locations



2/21/2024, 11:05:26 AM

- OSE Water PODs
- PLSS Second Division
- PLSS First Division
- PLSS Townships

1:18,056

0 0.17 0.35 0.7 mi

0 0.28 0.55 1.1 km

Esri, NASA, NGA, USGS, FEMA, OCD, Esri Community Maps Contributors, New Mexico State University, Texas Parks & Wildlife, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, BLM

New Mexico Oil Conservation Division

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

No PODs found.

PLSS Search:

Section(s): 15 **Township:** 15S **Range:** 29E

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

No PODs found.

PLSS Search:

Section(s): 14 **Township:** 15S **Range:** 29E

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

No PODs found.

PLSS Search:

Section(s): 13 **Township:** 15S **Range:** 29E

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

No PODs found.

PLSS Search:

Section(s): 22 **Township:** 15S **Range:** 29E

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

No PODs found.

PLSS Search:

Section(s): 23 **Township:** 15S **Range:** 29E

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

No PODs found.

PLSS Search:

Section(s): 24 **Township:** 15S **Range:** 29E

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

No PODs found.

PLSS Search:

Section(s): 27 **Township:** 15S **Range:** 29E

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

No PODs found.

PLSS Search:

Section(s): 26 **Township:** 15S **Range:** 29E

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

No PODs found.

PLSS Search:

Section(s): 25 **Township:** 15S **Range:** 29E

CATALYST
Oilfield Services

Catalyst Oilfield Services
11999 E Hwy 158
Gardendale, TX 79758
(432) 563-0727
Fax: (432) 224-1038

Water Analysis Report

Customer:	Mack Energy Corporation	Sample #:	118208
Area:	Artesia	Analysis ID #:	107555
Lease:	Montreal		
Location:	1H 0		
Sample Point:	Wellhead		

Sampling Date:	2/13/2020
Analysis Date:	3/4/2020
Analyst:	Catalyst
TDS (mg/l or g/m3):	172020.9
Density (g/cm3):	1.116
Hydrogen Sulfide:	7.4
Carbon Dioxide:	102
Comments:	

Anions	mg/l	meq/l
Chloride:	101615.8	2866.21
Bicarbonate:	197.6	3.24
Carbonate:		
Sulfate:	3400.0	70.79
Borate*:	110.4	0.7
Phosphate*		

***Calculated based on measured elemental boron and phosphorus.**

pH at time of sampling:	7.14
pH at time of analysis:	
pH used in Calculation:	**7.14**
Temperature @ lab conditions (F):	**75**

Cations	mg/l	meq/l
Sodium:	62440.0	2715.99
Magnesium:	965.3	79.41
Calcium:	2569.0	128.19
Potassium:	660.8	16.9
Strontium:	57.8	1.32
Barium:	3.4	0.05
Iron:	0.2	0.01
Manganese:	0.550	0.02

Conductivity (micro-mhos/cm):	199270
Resistivity (ohm meter):	.0502

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl

Temp	Calcite $CaCO_3$		Gypsum $CaSO_4 * 2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$	
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
80	0.58	8.60	-0.09	0.00	-0.08	0.00	-0.05	0.00	1.83	1.78
100	0.59	10.08	-0.16	0.00	-0.08	0.00	-0.08	0.00	1.63	1.78
120	0.60	11.86	-0.23	0.00	-0.07	0.00	-0.10	0.00	1.45	1.78
140	0.61	13.93	-0.28	0.00	-0.03	0.00	-0.10	0.00	1.30	1.78
160	0.63	16.01	-0.32	0.00	0.03	69.97	-0.10	0.00	1.16	1.78
180	0.65	18.38	-0.36	0.00	0.11	226.51	-0.10	0.00	1.05	1.78
200	0.68	21.05	-0.39	0.00	0.19	391.65	-0.09	0.00	0.95	1.48
220	0.73	24.01	-0.42	0.00	0.29	555.31	-0.08	0.00	0.87	1.48

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Water Analysis Report

Customer:	Mack Energy Corporation	Sample #:	100487
Area:	Drilling	Analysis ID #:	94751
Lease:	Maple Ridge		
Location:	Fed #1 0		
Sample Point:	Wellhead		

Sampling Date:	7/29/2019
Analysis Date:	8/8/2019
Analyst:	Catalyst
TDS (mg/l or g/m3):	144232
Density (g/cm3):	1.097
Hydrogen Sulfide:	14
Carbon Dioxide:	162.8
Comments:	

Anions	mg/l	meq/l
Chloride:	84902.3	2394.79
Bicarbonate:	241.6	3.96
Carbonate:		
Sulfate:	3300.0	68.71
Borate*:	173.9	1.1
Phosphate*		

***Calculated based on measured elemental boron and phosphorus.**

pH at time of sampling:	6.41
pH at time of analysis:	
pH used in Calculation:	**6.41**
Temperature @ lab conditions (F):	**75**

Cations	mg/l	meq/l
Sodium:	51250.0	2229.25
Magnesium:	1177.0	96.82
Calcium:	2566.0	128.04
Potassium:	564.2	14.43
Strontium:	53.5	1.22
Barium:	1.5	0.02
Iron:	1.5	0.05
Manganese:	0.460	0.02

Conductivity (micro-mhos/cm):	194536
Resistivity (ohm meter):	.0514

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl

Temp	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$	
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
80	-0.09	0.00	-0.09	0.00	-0.09	0.00	-0.04	0.00	1.52	0.91
100	0.01	0.30	-0.15	0.00	-0.08	0.00	-0.06	0.00	1.33	0.91
120	0.10	3.96	-0.20	0.00	-0.06	0.00	-0.08	0.00	1.15	0.61
140	0.21	8.22	-0.25	0.00	-0.01	0.00	-0.08	0.00	1.00	0.61
160	0.31	12.48	-0.28	0.00	0.06	131.82	-0.08	0.00	0.87	0.61
180	0.41	17.35	-0.31	0.00	0.14	299.86	-0.07	0.00	0.76	0.61
200	0.51	21.92	-0.33	0.00	0.24	471.86	-0.06	0.00	0.67	0.61
220	0.61	26.79	-0.35	0.00	0.35	637.46	-0.04	0.00	0.60	0.61

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Water Analysis Report

Customer:	Mack Energy Corporation	Sample #:	55880
Area:	Artesia	Analysis ID #:	53988
Lease:	White Rock		
Location:	Federal #1H 0		
Sample Point:	Wellhead		

Sampling Date:	12/21/2017
Analysis Date:	1/6/2018
Analyst:	Catalyst
TDS (mg/l or g/m3):	161820.5
Density (g/cm3):	1.107
Hydrogen Sulfide:	11
Carbon Dioxide:	242
Comments:	

Anions	mg/l	meq/l
Chloride:	93901.4	2648.62
Bicarbonate:	241.6	3.96
Carbonate:		
Sulfate:	5000.0	104.1
Borate*:	229.5	1.45
Phosphate*		

***Calculated based on measured elemental boron and phosphorus.**

pH at time of sampling:	6.9
pH at time of analysis:	
pH used in Calculation:	**6.9**
Temperature @ lab conditions (F):	**75**

Cations	mg/l	meq/l
Sodium:	58100.0	2527.21
Magnesium:	969.6	79.76
Calcium:	2737.0	136.58
Potassium:	571.6	14.62
Strontium:	66.0	1.51
Barium:	0.0	0.
Iron:	3.8	0.14
Manganese:	0.000	0.

Conductivity (micro-ohms/cm):	**176042**
Resistivity (ohm meter):	**.0568**

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl

Temp	Calcite $CaCO_3$		Gypsum $CaSO_4 * 2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$	
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
80	0.43	9.88	0.10	359.72	0.11	305.55	0.18	14.96	0.00	0.00
100	0.49	12.27	0.03	111.03	0.10	296.88	0.16	13.17	0.00	0.00
120	0.55	14.96	-0.03	0.00	0.13	355.53	0.14	11.97	0.00	0.00
140	0.60	17.96	-0.08	0.00	0.17	467.16	0.13	11.67	0.00	0.00
160	0.64	20.95	-0.12	0.00	0.23	615.30	0.14	11.67	0.00	0.00
180	0.69	24.54	-0.15	0.00	0.31	784.69	0.14	12.27	0.00	0.00
200	0.75	28.13	-0.18	0.00	0.40	962.15	0.15	12.87	0.00	0.00
220	0.80	31.72	-0.20	0.00	0.51	1137.23	0.17	13.77	0.00	0.00

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Water Analysis Report

Customer:	Mack Energy Corporation	Sample #:	81463
Area:	Artesia	Analysis ID #:	80383
Lease:	Prince Rupert		
Location:	Fed #4H 0		
Sample Point:	Wellhead		

Sampling Date:	1/10/2019
Analysis Date:	1/22/2019
Analyst:	Catalyst
TDS (mg/l or g/m3):	150968.6
Density (g/cm3):	1.102
Hydrogen Sulfide:	5
Carbon Dioxide:	97
Comments:	

Anions	mg/l	meq/l
Chloride:	**89383.7**	**2521.19**
Bicarbonate:	**175.7**	**2.88**
Carbonate:		
Sulfate:	**2800.0**	**58.3**
Borate*:	**190.4**	**1.2**
Phosphate*		

***Calculated based on measured elemental boron and phosphorus.**

pH at time of sampling:	6.65
pH at time of analysis:	
pH used in Calculation:	**6.65**
Temperature @ lab conditions (F):	**75**

Cations	mg/l	meq/l
Sodium:	**53970.0**	**2347.56**
Magnesium:	**1013.0**	**83.33**
Calcium:	**2725.0**	**135.98**
Potassium:	**644.4**	**16.48**
Strontium:	**55.6**	**1.27**
Barium:	**0.9**	**0.01**
Iron:	**9.0**	**0.32**
Manganese:	**0.857**	**0.03**

Conductivity (micro-ohms/cm):	**200079**
Resistivity (ohm meter):	**.0500**

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl

Temp	Calcite $CaCO_3$		Gypsum $CaSO_4 * 2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$	
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
80	0.05	0.91	-0.13	0.00	-0.13	0.00	-0.11	0.00	1.22	0.60
100	0.13	2.72	-0.20	0.00	-0.13	0.00	-0.13	0.00	1.02	0.30
120	0.22	4.84	-0.26	0.00	-0.11	0.00	-0.15	0.00	0.84	0.30
140	0.30	7.26	-0.30	0.00	-0.06	0.00	-0.15	0.00	0.69	0.30
160	0.37	9.68	-0.34	0.00	0.00	6.96	-0.15	0.00	0.56	0.30
180	0.45	12.70	-0.37	0.00	0.08	166.07	-0.14	0.00	0.45	0.30
200	0.52	15.73	-0.40	0.00	0.18	328.81	-0.13	0.00	0.36	0.30
220	0.60	18.75	-0.42	0.00	0.28	485.19	-0.11	0.00	0.28	0.30

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Water Analysis Report

Customer:	Mack Energy Corporation	Sample #:	78595
Area:	Artesia	Analysis ID #:	76096
Lease:	Chilliwack		
Location:	Fed Com 1H 0		
Sample Point:	Wellhead		

Sampling Date:	11/28/2018
Analysis Date:	12/3/2018
Analyst:	Catalyst
TDS (mg/l or g/m3):	175963.5
Density (g/cm3):	1.118
Hydrogen Sulfide:	4
Carbon Dioxide:	108
Comments:	

Anions	mg/l	meq/l
Chloride:	**104292.8**	**2941.72**
Bicarbonate:	**131.8**	**2.16**
Carbonate:		
Sulfate:	**3200.0**	**66.62**
Borate*:	**108.1**	**0.68**
Phosphate*		

***Calculated based on measured elemental boron and phosphorus.**

pH at time of sampling:	6.95
pH at time of analysis:	
pH used in Calculation:	**6.95**
Temperature @ lab conditions (F):	**75**

Cations	mg/l	meq/l
Sodium:	**63550.0**	**2764.27**
Magnesium:	**1027.0**	**84.49**
Calcium:	**2882.0**	**143.81**
Potassium:	**707.0**	**18.08**
Strontium:	**63.7**	**1.45**
Barium:	**0.8**	**0.01**
Iron:	**0.1**	**0.**
Manganese:	**0.189**	**0.01**

Conductivity (micro-ohms/cm):	**200381**
Resistivity (ohm meter):	**.0499**

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl

Temp	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$	
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
80	0.28	2.95	-0.07	0.00	-0.05	0.00	-0.04	0.00	1.17	0.30
100	0.32	3.84	-0.14	0.00	-0.06	0.00	-0.07	0.00	0.97	0.30
120	0.36	5.02	-0.21	0.00	-0.05	0.00	-0.09	0.00	0.79	0.30
140	0.39	6.20	-0.26	0.00	-0.01	0.00	-0.10	0.00	0.63	0.30
160	0.43	7.38	-0.31	0.00	0.05	111.64	-0.10	0.00	0.50	0.30
180	0.46	9.16	-0.34	0.00	0.12	261.08	-0.09	0.00	0.38	0.30
200	0.50	10.93	-0.38	0.00	0.21	418.50	-0.08	0.00	0.29	0.30
220	0.55	12.99	-0.41	0.00	0.31	573.26	-0.07	0.00	0.21	0.30

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Water Analysis Report

Customer:	Mack Energy Corporation	Sample #:	81533
Area:	Artesia	Analysis ID #:	80615
Lease:	Saskatoon		
Location:	Fed Com 1H 0		
Sample Point:	Wellhead		

Sampling Date:	1/10/2019
Analysis Date:	1/23/2019
Analyst:	Catalyst
TDS (mg/l or g/m3):	151377.2
Density (g/cm3):	1.105
Hydrogen Sulfide:	4
Carbon Dioxide:	90
Comments:	

Anions	mg/l	meq/l
Chloride:	91681.1	2585.99
Bicarbonate:	153.7	2.52
Carbonate:		
Sulfate:	700.0	14.57
Borate*:	144.3	0.91
Phosphate*		

***Calculated based on measured elemental boron and phosphorus.**

pH at time of sampling:	7.23
pH at time of analysis:	
pH used in Calculation:	**7.23**
Temperature @ lab conditions (F):	**75**

Cations	mg/l	meq/l
Sodium:	54050.0	2351.04
Magnesium:	1173.0	96.5
Calcium:	2767.0	138.07
Potassium:	647.0	16.55
Strontium:	60.1	1.37
Barium:	0.6	0.01
Iron:	0.0	0.
Manganese:	0.416	0.02

Conductivity (micro-ohms/cm):	**197210**
Resistivity (ohm meter):	**.0507**

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl

Temp	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$	
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
80	0.57	6.35	-0.72	0.00	-0.71	0.00	-0.66	0.00	0.45	0.30
100	0.57	7.26	-0.79	0.00	-0.72	0.00	-0.69	0.00	0.25	0.00
120	0.58	8.77	-0.84	0.00	-0.69	0.00	-0.70	0.00	0.07	0.00
140	0.59	10.28	-0.89	0.00	-0.65	0.00	-0.71	0.00	-0.08	0.00
160	0.60	12.10	-0.93	0.00	-0.59	0.00	-0.70	0.00	-0.21	0.00
180	0.63	13.91	-0.96	0.00	-0.51	0.00	-0.70	0.00	-0.32	0.00
200	0.66	16.03	-0.99	0.00	-0.41	0.00	-0.69	0.00	-0.42	0.00
220	0.71	18.45	-1.01	0.00	-0.31	0.00	-0.67	0.00	-0.49	0.00

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 336851

CONDITIONS

Operator: MACK ENERGY CORP P.O. Box 960 Artesia, NM 882110960	OGRID: 13837
	Action Number: 336851
	Action Type: [IM-SD] Admin Order Support Doc (ENG) (IM-AAO)

CONDITIONS

Created By	Condition	Condition Date
mgebremichael	None	4/23/2024