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 __X__Disposal _____Storage
Application qualifies for administrative approval? __X__Yes _____No

II. OPERATOR: Redwood Operating LLC

ADDRESS: P.O. Box 1370 Artesia, NM 88211-1370

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 __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.

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 Technician II

SIGNATURE: Deana Weaver DATE: _____

E-MAIL ADDRESS: dweaver@mec.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

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

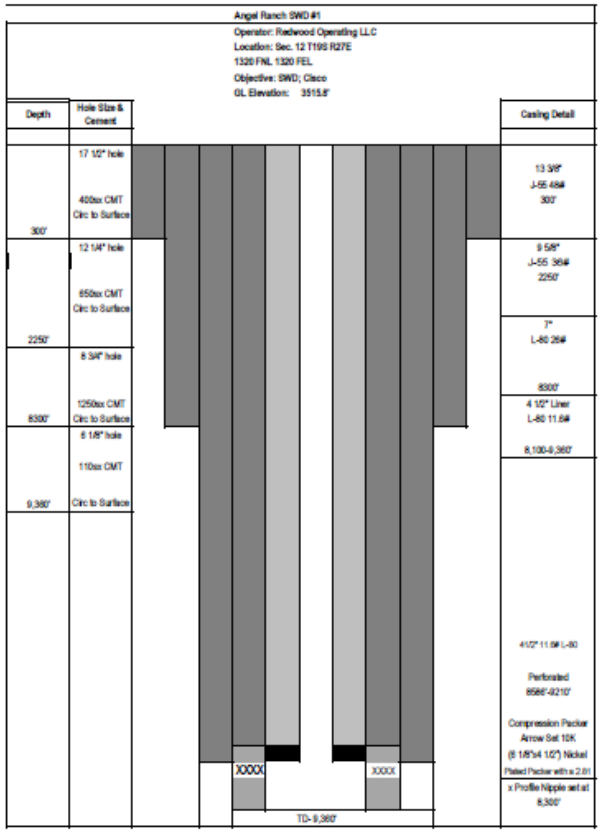
OPERATOR: Redwood Operating LLC

WELL NAME & NUMBER: Angel Ranch SWD #1

WELL LOCATION: 1320 FNL & 1320 FEL | A | 12 | T19S | R27E

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: 400 sx. ***or*** _____ ft^3

Top of Cement: 0 Method Determined: Circ

1st & 2nd Intermediate Casing

Hole Size: 1st -12 1/4" 2nd- 8 3/4" Casing Size: 1st- 9 5/8" 2nd- 7"

Cemented with: 1st- 650 2nd- 1250 sx. ***or*** _____ ft^3

Top of Cement: 0 Method Determined: Circ

Production Casing

Hole Size: 6 1/8" Casing Size: 41/2" Liner

Cemented with: 110 sx. ***or*** _____ ft^3

Top of Cement: 0 Method Determined: Circ

Total Depth: 9360'

Injection Interval

8586' feet to 9210' Perforated

(Perforated or Open Hole; indicate which)

Side 2

INJECTION WELL DATA SHEET

Tubing Size: 4 1/2" 11.6# L-80 Lining Material: IPC

Type of Packer: Arrow Set 10k (6 1/8 x 4 1/2") Nickel Plated Packer w/2.81 x Profile Nipple

Packer Setting Depth: 8,300'

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

Additional Data

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

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

2. Name of the Injection Formation: Cisco

3. Name of Field or Pool (if applicable): SWD; Cisco 96099

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: Bone Spings- 3,555'; Wolfcamp- 8,153'; Cisco-8,586', Strawn- 9,233'

Angel Ranch SWD #1

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;
   0-4,108#
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

VIII. GEOLOGICAL DATA

1. Lithologic Detail; **Dolomite**
2. Geological Name; **SWD; Cisco**
3. Thickness; 624'
4. Depth; **8,586-9210' TD-9,360'**

IX. PROPOSED STIMULATION PROGRAM

1. 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
Glorieta
Yeso

XII. AFFIRMATIVE STATEMENT

RE: Angel Ranch 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.

Redwood Operating LLC

Date: 12/13/22

Charles Sadler, Geologist

Angel Ranch SWD #1
Sec. 12 T19S R27E
1320 FNL 1320 FEL
GL- 3515.8’

Formation Tops:

Yates 350’
Seven Rivers 700’
Queen 1,380’
Grayburg 1,745’
San Andres 2,150’
Bone Spring 3,555’
Wolfcamp 8,153’
Cisco 8,586’
Strawn 9,233’

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
	96099	SWD; Cisco

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

[7] OGRID No.	[8] Operator Name	[9] Elevation
330211	REDWOOD OPERATING, LLC	3515.8

[10] Surface Location

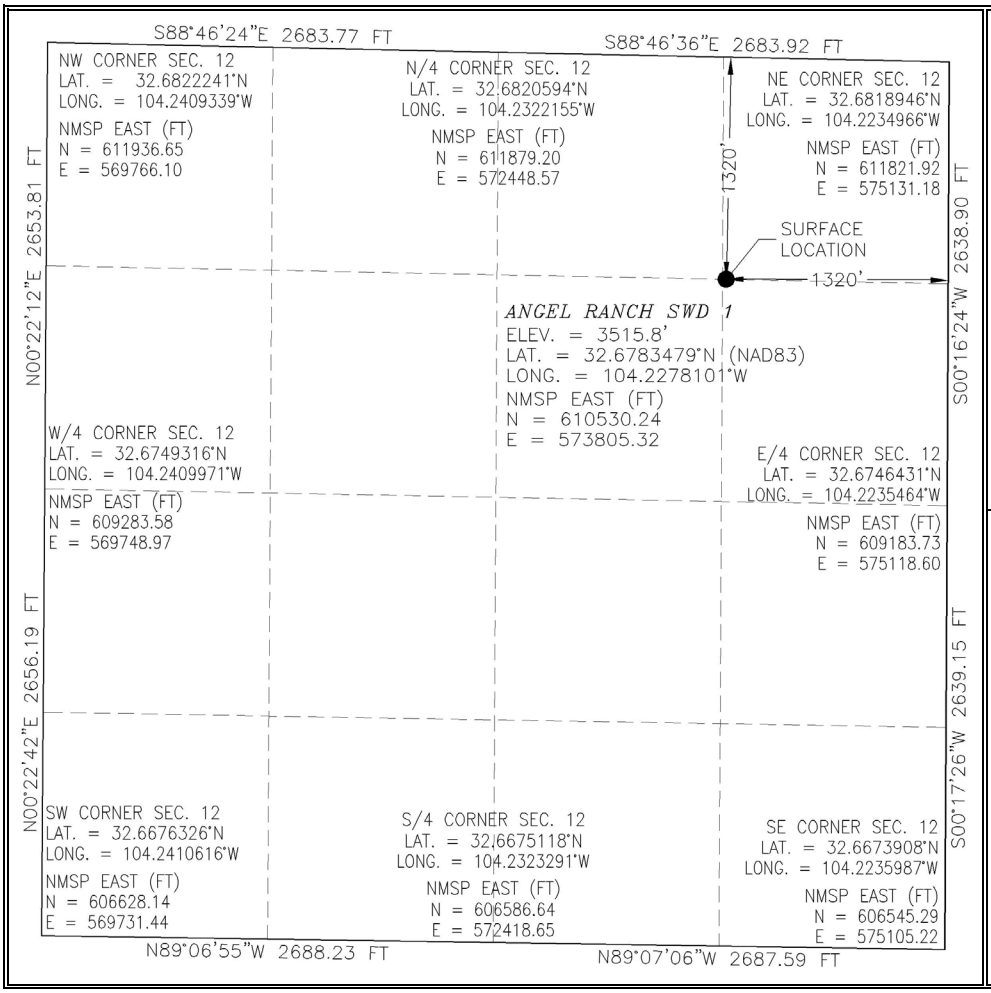
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	12	19 S	27 E		1320	NORTH	1320	EAST	EDDY

[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 11/29/2022
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.

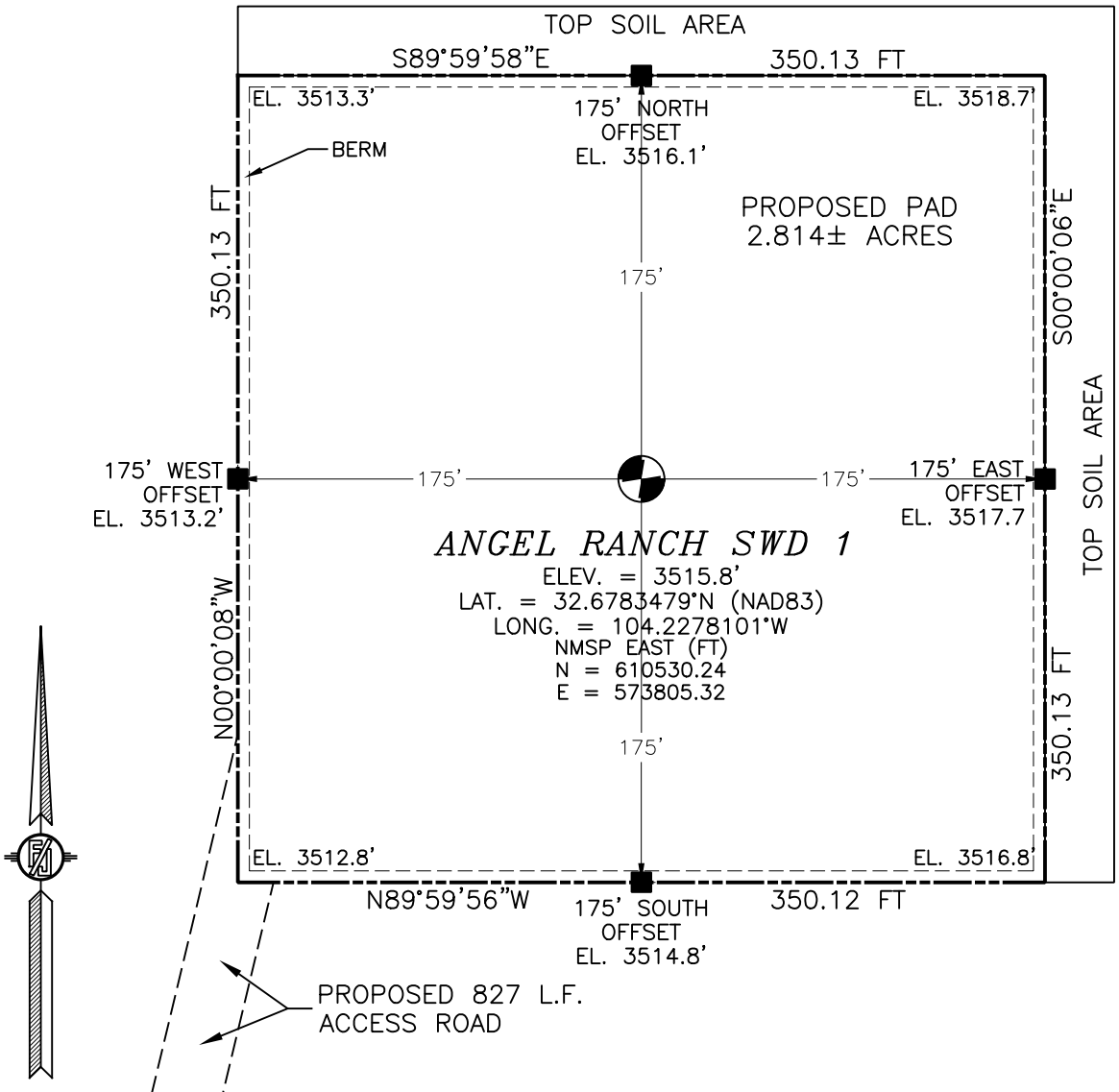
NOVEMBER 22, 2022
Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number: EDMUND F. JARAMILLO, PLS 12797

SECTION 12, TOWNSHIP 19 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. ELEVATION VALUES ARE NAVD88.



0 8 40 80 160

SCALE 1" = 80'

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF CR. 206 (ILLINOIS CAMP) & CR. 236 (NETHERLIN), GO NORTH ON CR. 206 APPROX. 0.6 MILES, TURN LEFT (WEST) ON CALICHE ROAD AND GO APPROX. 0.64 MILES TO A ROAD SURVEY ON RIGHT (NORTH). FOLLOW ROAD SURVEY NORTH APPROX. 827' TO THE SOUTHWEST AND 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 MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

FILIMON F. JARAMILLO PLS 17078

REDWOOD OPERATING, LLC

ANGEL RANCH SWD 1

LOCATED 1320 FT. FROM THE NORTH LINE AND 1320 FT. FROM THE EAST LINE OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 27 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

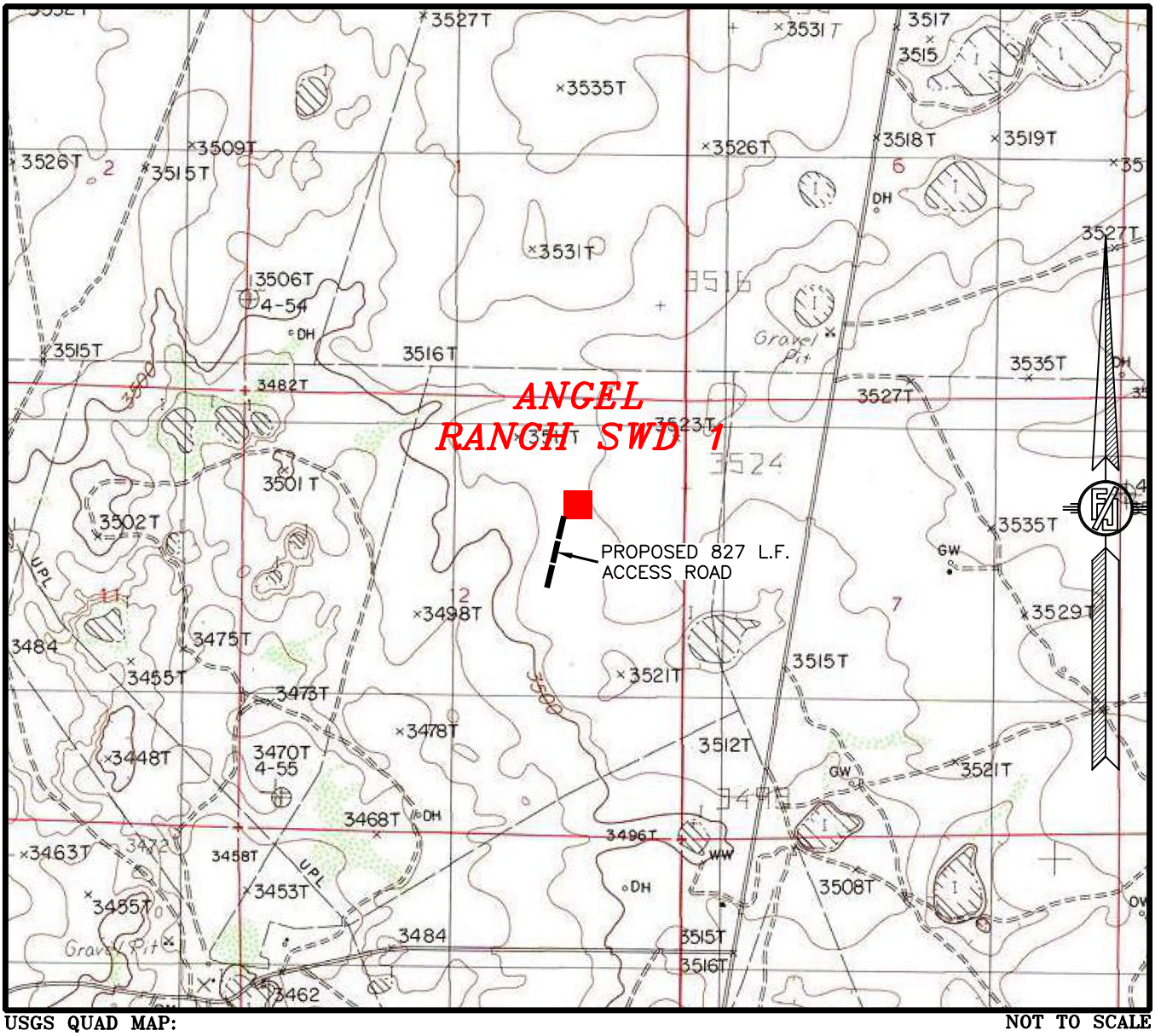
NOVEMBER 22, 2022

SURVEY NO. 9579

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

SECTION 12, TOWNSHIP 19 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

LOCATION VERIFICATION MAP



USGS QUAD MAP:
ILLINOIS CAMP

NOT TO SCALE

REDWOOD OPERATING, LLC
ANGEL RANCH SWD 1
LOCATED 1320 FT. FROM THE NORTH LINE
AND 1320 FT. FROM THE EAST LINE OF
SECTION 12, TOWNSHIP 19 SOUTH,
RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

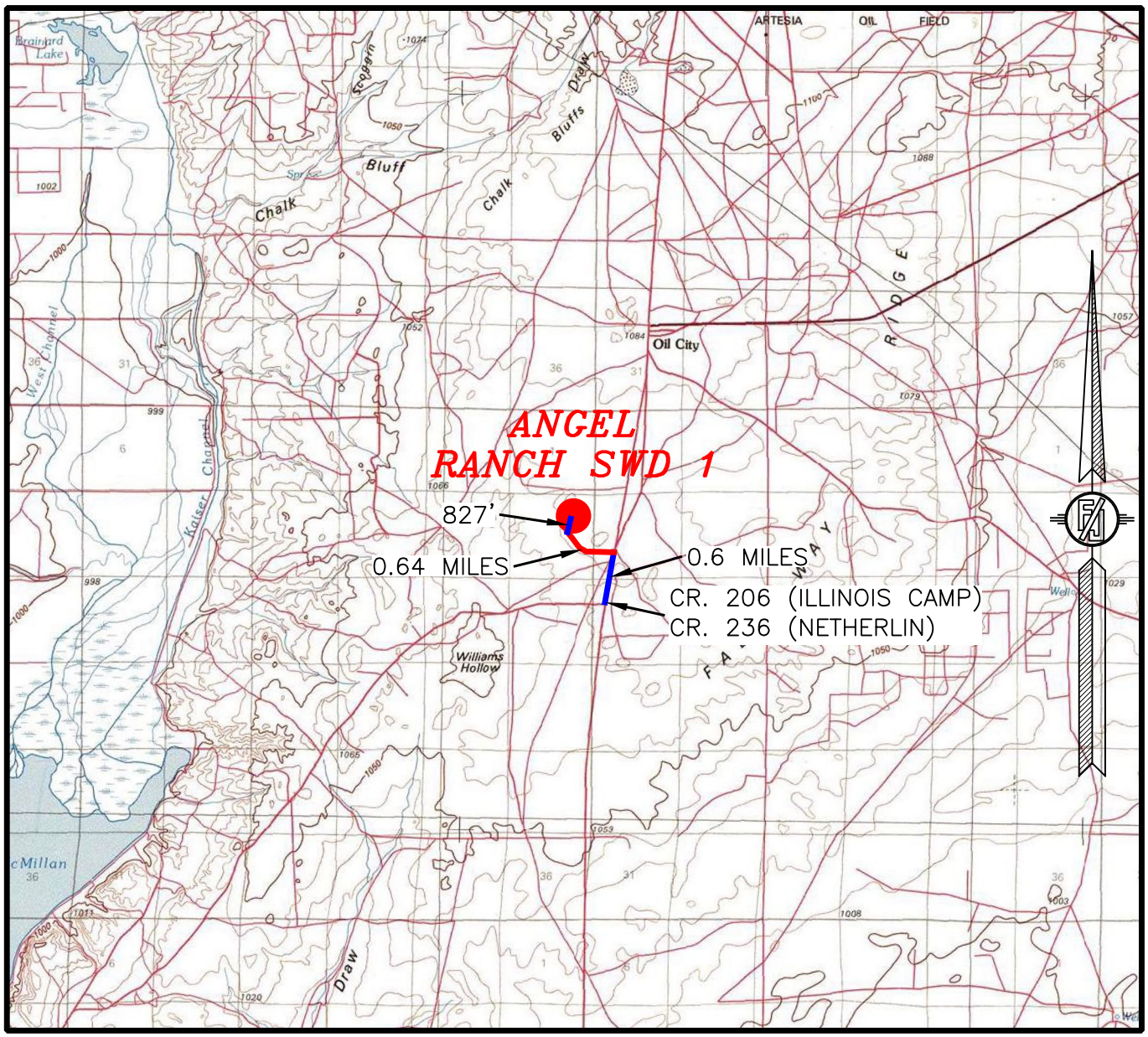
NOVEMBER 22, 2022

SURVEY NO. 9579

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

SECTION 12, TOWNSHIP 19 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

VICINITY MAP



DISTANCES IN MILES NOT TO SCALE

DIRECTIONS TO LOCATION
FROM THE INTERSECTION OF CR. 206 (ILLINOIS CAMP) & CR. 236 (NETHERLIN), GO NORTH ON CR. 206 APPROX. 0.6 MILES, TURN LEFT (WEST) ON CALICHE ROAD AND GO APPROX. 0.64 MILES TO A ROAD SURVEY ON RIGHT (NORTH), FOLLOW ROAD SURVEY NORTH APPROX. 827' TO THE SOUTHWEST PAD CORNER FOR THIS LOCATION.

REDWOOD OPERATING, LLC
ANGEL RANCH SWD 1
LOCATED 1320 FT. FROM THE NORTH LINE AND 1320 FT. FROM THE EAST LINE OF SECTION 12, TOWNSHIP 19 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

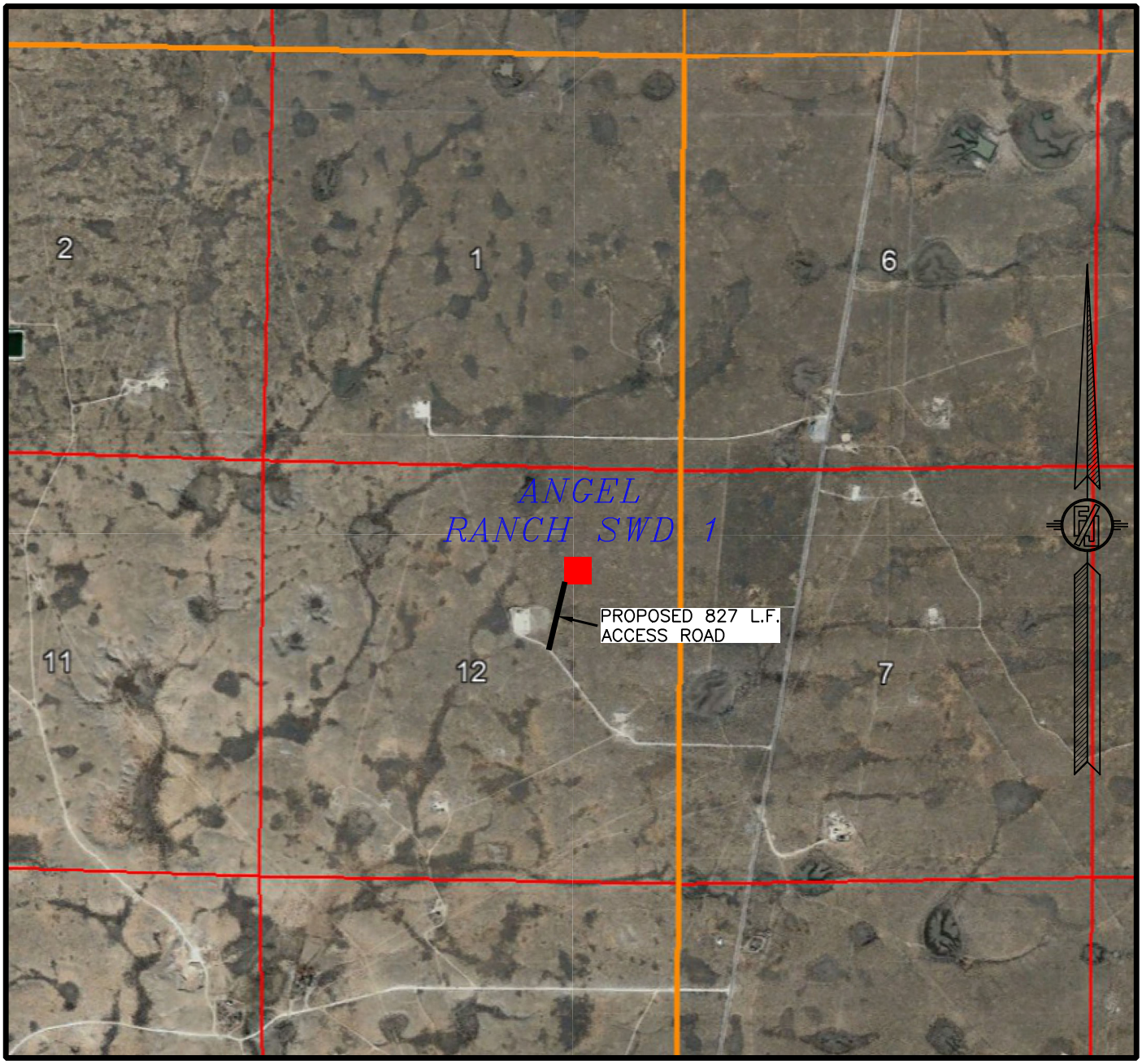
NOVEMBER 22, 2022

SURVEY NO. 9579

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

SECTION 12, TOWNSHIP 19 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
DEC. 2019

REDWOOD OPERATING, LLC
ANGEL RANCH SWD 1
LOCATED 1320 FT. FROM THE NORTH LINE
AND 1320 FT. FROM THE EAST LINE OF
SECTION 12, TOWNSHIP 19 SOUTH,
RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 22, 2022

SURVEY NO. 9579

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

SECTION 12, TOWNSHIP 19 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

AERIAL ACCESS ROUTE MAP

NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
DEC. 2019

REDWOOD OPERATING, LLC
ANGEL RANCH SWD 1
LOCATED 1320 FT. FROM THE NORTH LINE
AND 1320 FT. FROM THE EAST LINE OF
SECTION 12, TOWNSHIP 19 SOUTH,
RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 22, 2022

SURVEY NO. 9579

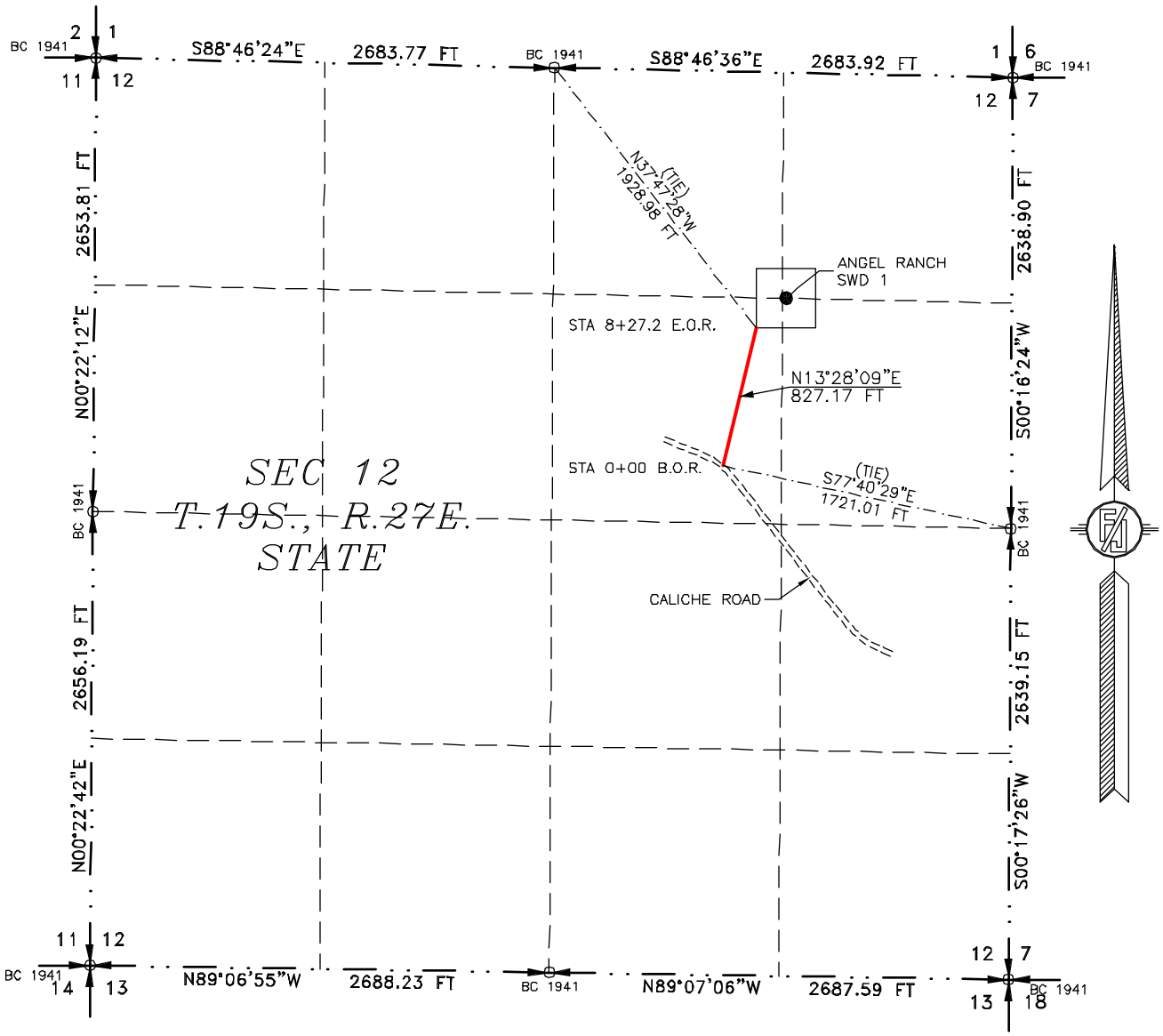
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3327 CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT

ACCESS ROAD FOR ANGEL RANCH SWD 1

REDWOOD OPERATING, LLC

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 12, TOWNSHIP 19 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 22, 2022



SEE NEXT SHEET (2-2) FOR DESCRIPTION

1000 0 1000
Scale: 1" = 1000'

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 23 DAY OF NOVEMBER 2022

FILIMON F. JARAMILLO PLS 12797
301 SOUTH CANAL
(575) 234-3327

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3327

SHEET: 1-2

SURVEY NO. 9579

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT

ACCESS ROAD FOR ANGEL RANCH SWD 1

REDWOOD OPERATING, LLC

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 12, TOWNSHIP 19 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
NOVEMBER 22, 2022

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING STATE OF NEW MEXICO LAND IN SECTION 12, TOWNSHIP 19 SOUTH, RANGE 27 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SW/4 NE/4 OF SAID SECTION 12, TOWNSHIP 19 SOUTH, RANGE 27 EAST, N.M.P.M., WHENCE THE EAST QUARTER CORNER OF SAID SECTION 12, TOWNSHIP 19 SOUTH, RANGE 27 EAST, N.M.P.M. BEARS S77°40'29"E, A DISTANCE OF 1721.01 FEET;
THENCE N13°28'09"E A DISTANCE OF 827.17 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 12, TOWNSHIP 19 SOUTH, RANGE 27 EAST, N.M.P.M. BEARS N37°47'28"W, A DISTANCE OF 1928.98 FEET;

SAID STRIP OF LAND BEING 827.17 FEET OR 50.13 RODS IN LENGTH, CONTAINING 0.570 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 NE/4	827.17 L.F.	50.13 RODS	0.570 ACRES

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 25 DAY OF NOVEMBER 2022

FILIMON F. JARAMILLO PLS 12797
301 SOUTH CANAL
(575) 234-3327 CARLSBAD, NEW MEXICO

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3327

SHEET: 2-2

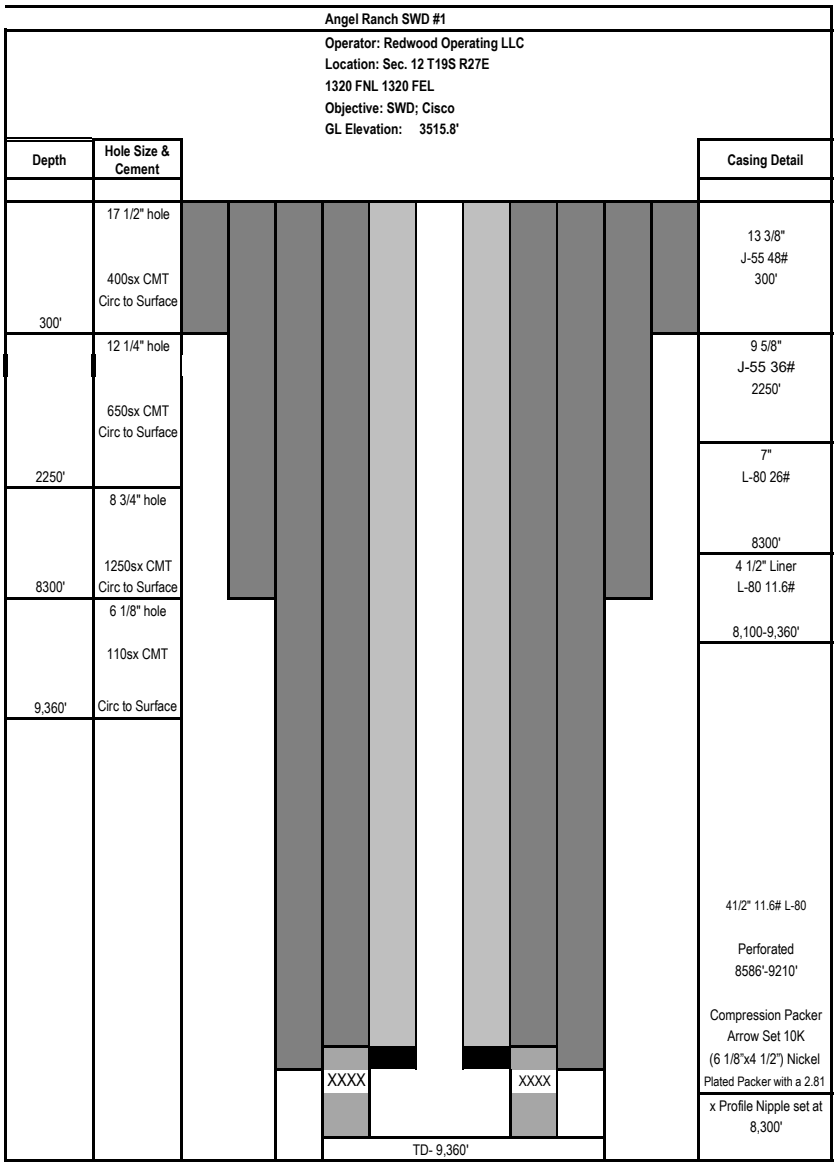
SURVEY NO. 9579

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

Angel Ranch SWD #1

Operator: Redwood Operating LLC
Location: Sec. 12 T19S R27E
1320 FNL 1320 FEL
Objective: SWD; Cisco
GL Elevation: 3515.8'

Depth	Hole Size & Cement	Casing Detail
300'	17 1/2" hole 400sx CMT Circ to Surface	13 3/8" J-55 48# 300'
2250'	12 1/4" hole 650sx CMT Circ to Surface	9 5/8" J-55 36# 2250'
8300'	8 3/4" hole 1250sx CMT Circ to Surface	7" L-80 26# 8300' 4 1/2" Liner L-80 11.6# 8,100-9,360'
9,360'	6 1/8" hole 110sx CMT Circ to Surface	41/2" 11.6# L-80 Perforated 8586'-9210' Compression Packer Arrow Set 10K (6 1/8"x4 1/2") Nickel Plated Packer with a 2.81 x Profile Nipple set at 8,300'



Affidavit of Publication

No. 26399

te of New Mexico

unty of Eddy:

nny Scott

ng duly sworn sayes that he is the **Publisher**

he Artesia Daily Press, a daily newspaper of General

ulation, published in English at Artesia, said county

state, and that the hereto attached

Legal Ad

published in a regular and entire issue of the said

esia Daily Press, a daily newspaper duly qualified

for that purpose within the meaning of Chapter 167 of

the 1937 Session Laws of the state of New Mexico for

1 Consecutive weeks/day on the same

day as follows:

First Publication December 22, 2022

Second Publication

Third Publication

Fourth Publication

Fifth Publication

Sixth Publication

Seventh Publication

Subscribed and sworn before me this

22nd day of December 2022

STATE OF NEW MEXICO
NOTARY PUBLIC
Latisha Romine
Commission Number 1076338
My Commission Expires May 12, 2023

Latisha Romine

Latisha Romine

Notary Public, Eddy County, New Mexico

Copy of Publication:

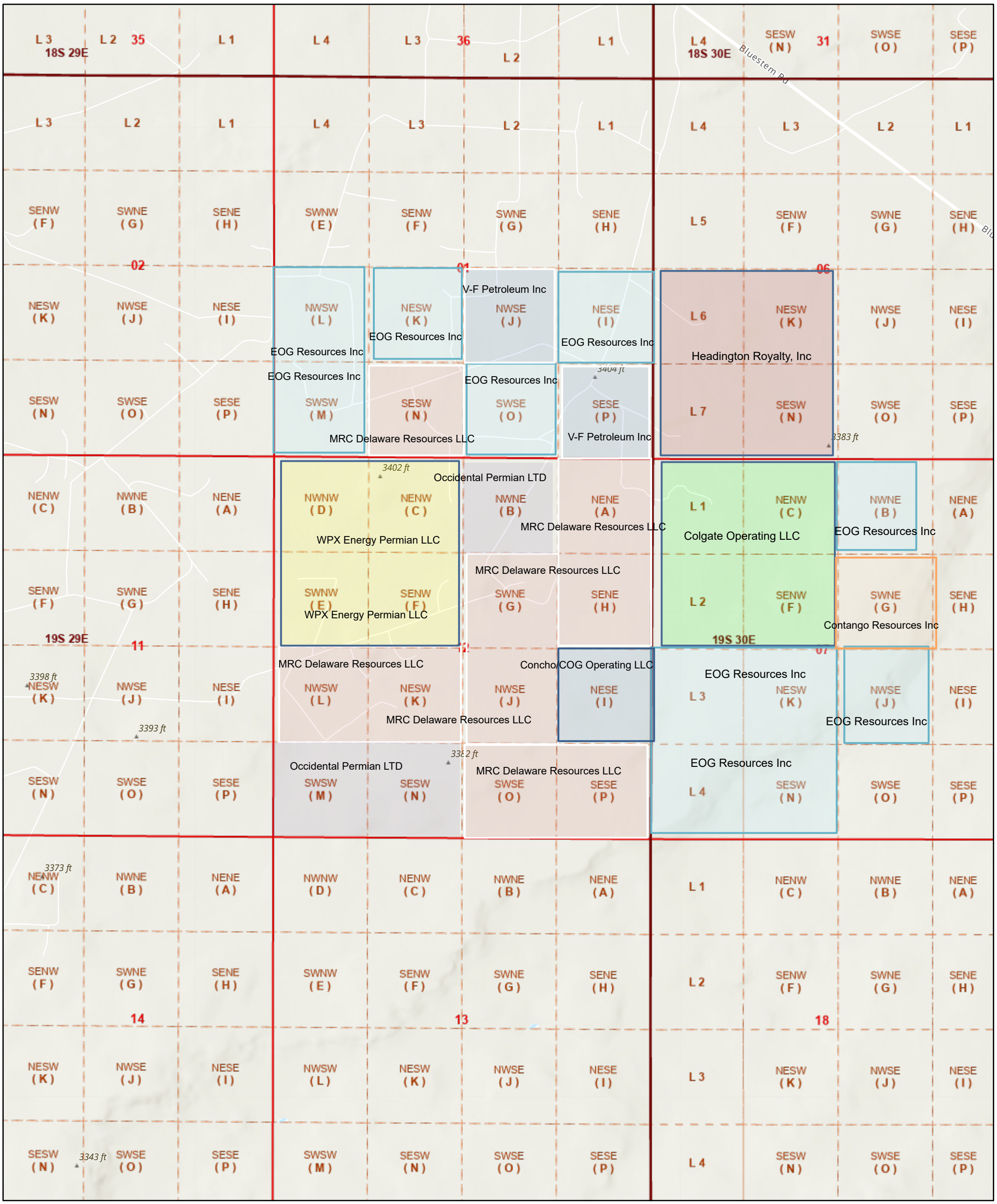
Legal Notice

Redwood Operating LLC, Post Office Box 1370, Artesia, NM 88211-1370, has filed an Application with the New Mexico Oil Conservation Division seeking authorization to inject produced water into the Angel Ranch SWD #1 1320 FNL 1320 FEL of Section 12, T19S, R27E, NMPM, Eddy County, New Mexico. The water will be injected into the Cisco at a disposal depth of 8,586-9,210'. Water will be injected at a maximum surface pressure of 4,108# and a maximum injection rate of 15,000-20,000 BWPD. Any interest party with questions or comments may contact Deana Weaver at Redwood Operating LLC, Post Office Box 1370, Artesia, NM 88211-1370 or call 575-748-1288. Objections to this application or requests for hearing must be filed with the Oil Conservation Division, 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505, within fifteen days of the date of publication of this notice.

Published in the Artesia Daily Press, Artesia, N.M., Dec. 22, 2022 Legal No. 26399.

Name	Address	City	State	Zip	Certified Mail Id
New Mexico State Land Office	310 Old Santa Fe Trail	Santa Fe	NM	87501	7015 3430 0000 2209 5939
MRC Delaware Resources LLC	108 South 4th Street	Artesia	NM	88210	7015 3430 0000 2209 5946
Occidental Permian LTD	P.O.Box 4294	Houston	TX	77210-4294	7015 3430 0000 2209 5953
WPX Energy Permian LLC	333 W. Sheridan Ave	Oklahoma City	OK	73102	7015 3430 0000 2209 5960
Concho Oil & Gas LLC	One Concho Center	Midland	TX	79701	7015 3430 0000 2209 5977
COG Operating LLC	600 W. Illinois Ave	Midland	TX	79701	7015 3430 0000 2209 5984
V-F Petroleum Inc	P.O. Box 1889	Midland	TX	79702	7015 3430 0000 2209 5991
EOG Resources Inc	P.O. Box 2267	Midland	TX	79702	7015 3430 0000 2209 6004
Headington Royalty, Inc	1501 N. Harding Blv. Suite 100	McKinney	TX	75071	7021 1970 0000 5914 6079
Colgate Operating LLC	300 N. Marienfeld Street Suite 1000	Midland	TX	79701	7021 1970 0000 5914 6086
Contango Resources Inc	717 Texas Ave. Suite 2900	Houston	TX	77002	7021 1970 0000 5914 6093

OCD Well Locations



11/9/2022, 10:38:28 AM

Areas

- Override 10
- Override 11
- Override 12
- Override 13
- Override 14
- Override 15
- Override 16
- Override 17
- Override 18
- 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

REDWOOD
OPERATING LLC
PO BOX 1370 ARTESIA NM 88211-1370

December 14, 2022

Via Certified Mail 7015 3430 0000 2209 5939
Return Receipt Requested

New Mexico State Land Office
310 Old Santa Fe Trail
Santa Fe, NM 87501

To all Interest Owners:

Enclosed for your review is a copy of Redwood Operating LLC's application for a Cisco SWD well. Produced water will be injected at a proposed depth of 8,586-9,210'. The Angel Ranch SWD #1 located 1320 FNL & 1320 FEL, Sec. 12 T19S R27E, Eddy County.

The letter will serve as a notice that Redwood Operating LLC 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,

Redwood Operating LLC

Deana Weaver

Deana Weaver
Regulatory Technician II

DW/

Attachments

O: 575.748.1288
F: 575.746.9539
INFO@REDWOODOPERATING.COM

REDWOOD
OPERATING LLC
PO BOX 1370 ARTESIA NM 88211-1370

December 14, 2022

Via Certified Mail 7015 3430 0000 2209 5946
Return Receipt Requested

MRC Delaware Resources LLC
108 South 4th Street
Artesia, NM 88210

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REDWOOD
OPERATING LLC
PO BOX 1370 ARTESIA NM 88211-1370

December 14, 2022

Via Certified Mail 7015 3430 0000 2209 5953
Return Receipt Requested

Occidental Permian LTD
P.O. Box 4294
Houston, TX 77210-4294

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REDWOOD
OPERATING LLC
PO BOX 1370 ARTESIA NM 88211-1370

December 14, 2022

Via Certified Mail 7015 3430 0000 2209 5960
Return Receipt Requested

WPX Energy Permian LLC
333 W. Sheridan Ave
Oklahoma City, OK 73102

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INFO@REDWOODOPERATING.COM

REDWOOD
OPERATING LLC
PO BOX 1370 ARTESIA NM 88211-1370

December 14, 2022

Via Certified Mail 7015 3430 0000 2209 5977
Return Receipt Requested

Concho Oil & Gas LLC
One Concho Center
Midland, TX 79701

To all Interest Owners:

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Deana Weaver

Deana Weaver
Regulatory Technician II

DW/

Attachments

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F: 575.746.9539
INFO@REDWOODOPERATING.COM

REDWOOD
OPERATING LLC
PO BOX 1370 ARTESIA NM 88211-1370

December 14, 2022

Via Certified Mail 7015 3430 0000 2209 5984
Return Receipt Requested

COG Operating LLC
600 W. Illinois Ave
Midland TX 79701

To all Interest Owners:

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Deana Weaver

Deana Weaver
Regulatory Technician II

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Attachments

O: 575.748.1288
F: 575.746.9539
INFO@REDWOODOPERATING.COM

REDWOOD
OPERATING LLC
PO BOX 1370 ARTESIA NM 88211-1370

December 14, 2022

Via Certified Mail 7015 3430 0000 2209 5991
Return Receipt Requested

V-F Petroleum Inc
P.O. Box 1889
Midland, TX 79702

To all Interest Owners:

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Regulatory Technician II

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INFO@REDWOODOPERATING.COM

REDWOOD
OPERATING LLC
PO BOX 1370 ARTESIA NM 88211-1370

December 14, 2022

Via Certified Mail 7015 3430 0000 2209 6004
Return Receipt Requested

EOG Resources Inc
P.O. Box 2267
Midland, TX 79702

To all Interest Owners:

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F: 575.748.9539
INFO@REDWOODOPERATING.COM

REDWOOD
OPERATING LLC
PO BOX 1370 ARTESIA NM 88211-1370

December 14, 2022

Via Certified Mail 7021 1970 0000 5914 6079
Return Receipt Requested

Headington Royalty, Inc
1501 N. Harding Blvd. Suite 100
McKinney, TX 75071

To all Interest Owners:

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INFO@REDWOODOPERATING.COM

REDWOOD
OPERATING LLC
PO BOX 1370 ARTESIA NM 88211-1370

December 14, 2022

Via Certified Mail 7021 1970 0000 5914 6086
Return Receipt Requested

Colgate Operating LLC
300 N. Marienfeld Street Suite 1000
Midland, TX 79701

To all Interest Owners:

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DW/

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INFO@REDWOODOPERATING.COM

REDWOOD
OPERATING LLC
PO BOX 1370 ARTESIA NM 88211-1370

December 14, 2022

Via Certified Mail 7021 1970 0000 5914 6093
Return Receipt Requested

Contango Resources Inc
717 Texas Ave Suite 2900
Houston, TX 77002

To all Interest Owners:

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Regulatory Technician II

DW/

Attachments

O: 575.748.1288
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INFO@REDWOODOPERATING.COM

Angel Ranch SWD #1
C-108
Well Tabulation Penetrating Injection Zone in Review Area
Redwood Operating LLC
Proposed Disposal Well

Operator	Well Name	API #	County	Footage	Sec	TWN	RNG	Type	Status	Spud Date	Comp Date	TD	PBTD	Comp Zone	Comp Interval	Hole Size	Casing Prog	Cement
Redwood Operating LLC	Angel Ranch SWD #1		Eddy	1320 FNL & 1320 FEL	12	19S	27E	SWD	New			9360'				17 1/2	13 3/8", 48# J-55	400sx, Circ
									Drill							12 1/4"	9 5/8", 36# J-55	650sx, Circ
																8 3/4"	7", 26#, L-80	1250sx, Circ
																6 1/8"	4 1/2", 11.6#, L-80	110sx, Circ
COG Operating LLC	Spanich Dagger State Com #1	30-015-34037	Eddy	1980 FNL & 1980 FEL	12	19S	27E	Gas	Producing	6/19/2005	8/23/2005	11,000'	10350'	Angel Ranch; Atoka-Marrow (Gas)	10384-10570' CIBP @ 10350' 10194-10199', 10304-10310'	17 1/2"	13 3/8",48# @ 306'	475sx, circ
																12 1/4"	9 5/8", 36# @ 2051'	600sx, circ
																8 3/4"	5 1/2", 17# @ 11,000'	1975sx, circ
Harvard Petroleum Company LLC	Eddy GZ State Com #1	30-015-22562	Eddy	1980 FSL & 660 FEL	12	19S	27E	Oil	P&A	6/5/1978	10/3/1978	10,957'	0	Millman; Grayburg West	10588-10695'	17 1/2"	13 3/8",48# @ 474'	675sx, Circ
															CIBP @ 10530	12 1/4"	12 1/4", 24# @ 2,500'	1000sx, Circ
															9717-10464' Sqz 300sx	7 7/8"	5 1/2", 17# & 15.5# @ 10,957'	600sx, TOC @ 8580'
															CIBP @ 8685'		Cut 5 1/2" Csg @ 6650' (1988)	
															2290-2299'			
															CIBP @ 2260'			
															1872-1941'			
															260sx to Surface			
Contango Resources, Inc	Tablero ABF State #2	30-015-25233	Eddy	1650 FNL & 990 FWL	7	19S	28E	Oil	P&A	3/25/1985	5/15/1985	2,357'	0	Artesia-Q-Grayburg SA	2281-2285'	12 1/4"	8 5/8", 24# @ 458'	235sx, Circ
															2255-2263'	7 7/8"	5 1/2", 14# @ 2357'	525sx, Circ
															1857-1921'			
															CIBP @ 1790' 25sx cmt top			
															25sx Cmt Plg 1590-1790'			
															20sx Cmt Plg 358-558'			
															30sx Cmt Plug 3-250'			
Harvard Petroleum Company LLC	JMD State #3	30-015-25890	Eddy	1650 FSL & 2310 FEL	12	19S	27E	Oil	P&A	12/17/1988	12/29/1988	2,050'	0	Millman; Grayburg, Wes	1796-1840'	12 1/4"	8 5/8", 24# @ 312'	460sx, Circ
															CIBP @ 1750', 10sx cmt top	7 7/8	5 1/2", 20# @ 2037'	375sx, Circ
															Perf 375' 20sx cmt toc 201			
															Perf 60' 50sx cmt			

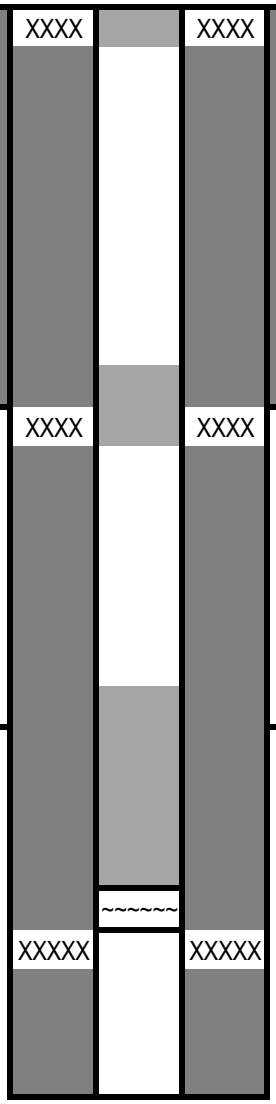
30-015-25233	Tablero ABF State #2
	Operator: Contango Resources, Inc Location: Sec. 7 T19S R28E 1650 FNL & 990 FWL Objective: Artesia-Q-Grayburg-SA GL Elevation: 3518'

Depth	Hole Size & Cement	Casing Detail
458	12 1/4"	8 5/8", 24# 235sx, circ 458'
2357	7 7/8"	5 1/2", 14# 525sx, Circ 2357'
		30sx Cmt Plg 3-250' 20sx Cmt Plg 358-558' 25sx Cmt Plg 1590-1790' CIBP @ 1790' 25sx Cmt Perf 1857-1921' Perf 2255-2263' Perf 2281-2285'
TD-2357'		

30-015-25890	JMD State #3

Operator: Harvard Petroleum Company LLC
Location: Sec. 12 T19S R27E
1650 FSL & 2310 FEL
Objective: Millman; Grayburg, West
GL Elevation: 3495'

Depth	Hole Size & Cement	Casing Detail
312'	12 1/4"	8 5/8", 24# 460sx, Circ 312'
2037'	7 7/8"	5 1/2", 20# 375sx, Circ 2037'
		Perf 60' 50sx Cmt Perf 375' 20sx cmt toc 201' CIBP @ 1750' 10sx Cmt Perf 1796-1840'
		TD- 2,050



30-015-22562	Eddy GZ State Com #1

Operator: Harvard Petroleum Company LLC
Location: Sec. 12 T19S R27E
1980 FSL & 660 FEL
Objective: Millman; Grayburg West
GL Elevation: 3489.1'

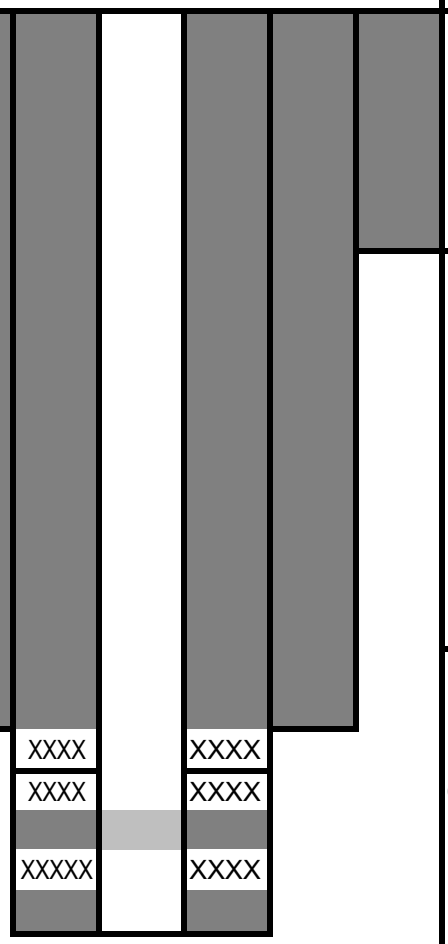
Depth	Hole Size & Cement	Casing Detail
474'	17 1/2"	13 3/8", 48# 675sx, Circ 474'
2500'	12 1/4"	8 5/8", 24# 1000sx, Circ 2500'
10957'	7 7/8"	5 1/2",15.5# & 17# 600sx, TOC @ 8580' 10957' Cut 5 1/2" Csg @ 6650' 190sx Cmt plug 527 to Surface 70sx Cmt plug 1800' Perfs 1872-1886' Perfs 1922-1941' CIBP @ 2260' Perfs 2290-2299' Sqz 42sx Cmt Retainer @ 2462 Cmt Plugs 30sx 3330-3430 30sx 4775-4875 40sx 6532-6710 10sx 8180-8280 CIBP @8685' Perfs 9717-10464' Sqz 300sx CIBP @ 10530' Perfs 10588-10695'

TD-10,957'

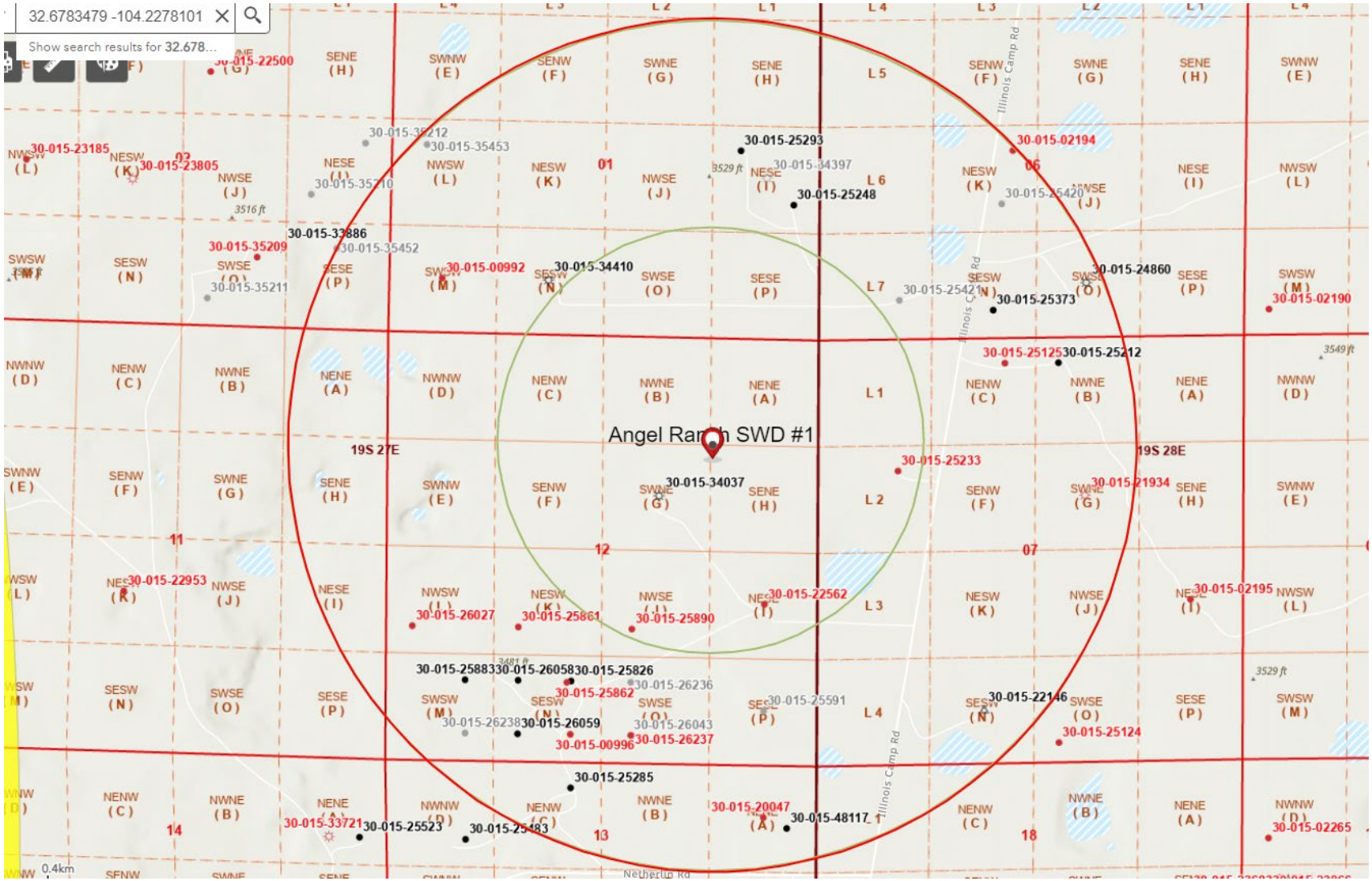
30-015-34037	Spanish Dagger State Com #1

Operator: COG Operating LLC
Location: Sec. 12 T19S R27E
1980 FNL & 1980 FEL
Objective: Angle Ranch; Atoka-Morrow (Gas)
GL Elevation: 3506'

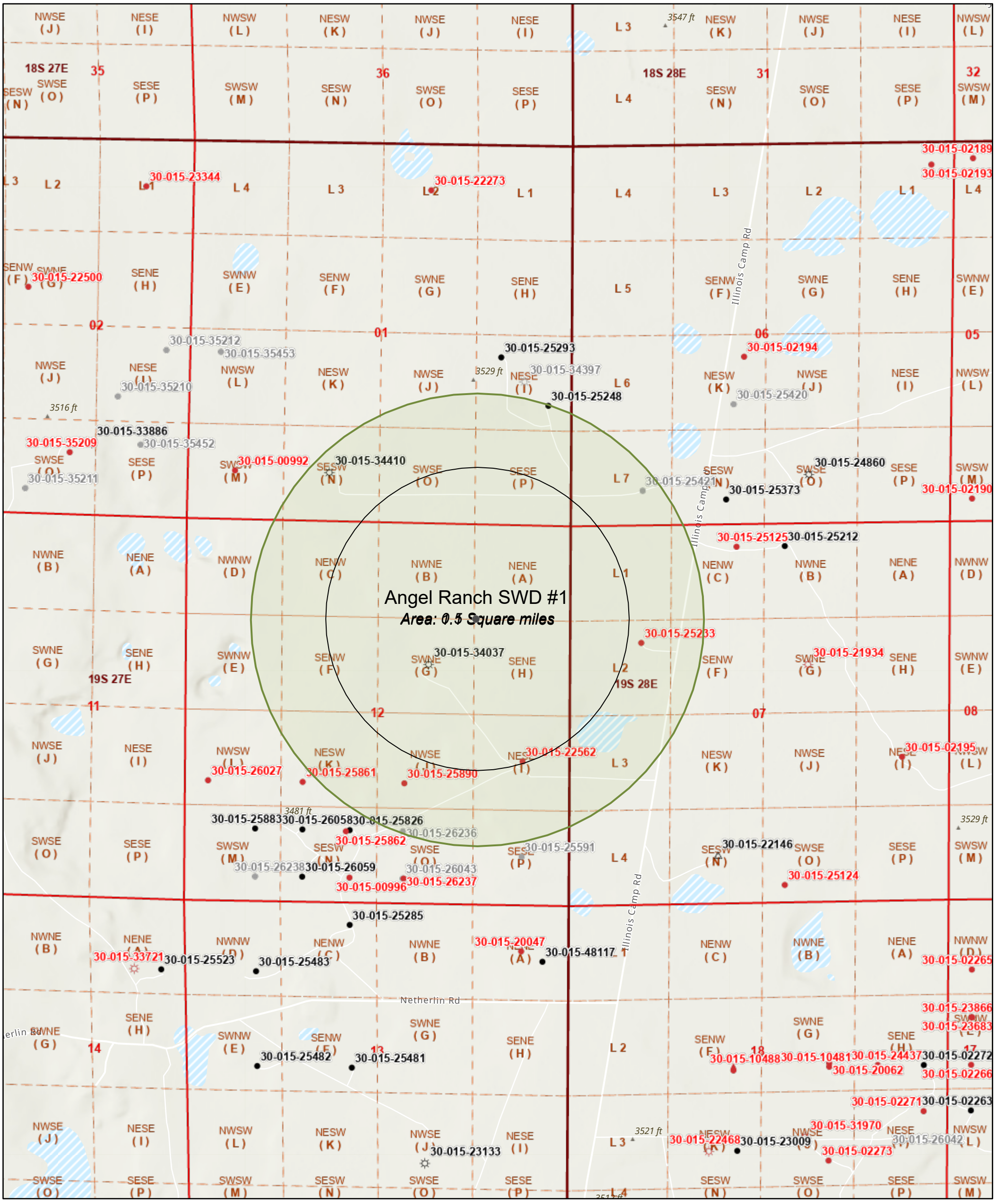
Depth	Hole Size & Cement	Casing Detail
306	17 1/2"	13 3/8", 48# 475sx, Circ 306'
2051'	12 1/4"	9 5/8", 36# 600sx, Circ 2051'
11000'	8 3/4"	5 1/2", 17# 1975sx, circ 11000'
		Perfs 10194-10199' 10304-10310' CIBP @ 10350' Perfs 10384-10573



Area of Review
Angel Ranch SWD #1
Sec. 12 T19S R27E 1320 FNL 1320 FEL



OCD Well Locations



11/29/2022, 9:20:41 AM

Areas
- Override 1
- Override 2

Wells - Large Scale
- Gas, Active
- Gas, Cancelled
- Gas, Plugged
- Oil, Active
- Oil, Cancelled
- Oil, Plugged
- Salt Water Injection, Active
- Water, 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

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

Water Analysis Report

Customer:	Redwood Operating LLC	Sample #:	225586
Area:	Permian Basin	Analysis ID #:	175700
Lease:	Angel Ranch		
Location:	1 0		
Sample Point:	Wellhead		

		Anions	mg/l	meq/l	Cations	mg/l	meq/l
Sampling Date:	12/14/2022	**Chloride:**	**1840.7**	**51.92**	**Sodium:**	**528.4**	**22.98**
Analysis Date:	12/19/2022	**Bicarbonate:**	**268.4**	**4.4**	**Magnesium:**	**345.3**	**28.41**
Analyst:	Catalyst	**Carbonate:**			**Calcium:**	**635.0**	**31.69**
TDS (mg/l or g/m3):	4934.1	**Sulfate:**	**1300.0**	**27.07**	**Potassium:**	**4.4**	**0.11**
Density (g/cm3):	1.005	**Borate*:**	**2.0**	**0.01**	**Strontium:**	**9.9**	**0.23**
		Phosphate*			**Barium:**	**0.0**	**0.**
Hydrogen Sulfide:					**Iron:**	**0.0**	**0.**
Carbon Dioxide:		***Calculated based on measured elemental boron and phosphorus.**			**Manganese:**	**0.002**	**0.**
Comments:		pH at time of sampling:		7.65			
CP00502		pH at time of analysis:					
		pH used in Calculation:		**7.65**	**Conductivity (micro-mhos/cm):**		**6931**
		Temperature @ lab conditions (F):		**75**	**Resistivity (ohm meter):**		**1.4428**

	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	0.94	22.32	-0.24	0.00	-0.31	0.00	-0.35	0.00	0.00	0.00	
100	1.02	26.16	-0.25	0.00	-0.25	0.00	-0.34	0.00	0.00	0.00	
120	1.12	30.34	-0.24	0.00	-0.17	0.00	-0.32	0.00	0.00	0.00	
140	1.22	35.23	-0.23	0.00	-0.06	0.00	-0.29	0.00	0.00	0.00	
160	1.33	39.76	-0.21	0.00	0.07	64.18	-0.25	0.00	0.00	0.00	
180	1.45	44.64	-0.18	0.00	0.21	180.67	-0.20	0.00	0.00	0.00	
200	1.57	49.18	-0.14	0.00	0.36	280.77	-0.15	0.00	0.00	0.00	
220	1.70	53.36	-0.11	0.00	0.53	363.78	-0.10	0.00	0.00	0.00	

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

Water Analysis Report

Customer:	Redwood Operating LLC	Sample #:	225587
Area:	Permian Basin	Analysis ID #:	175701
Lease:	Angel Ranch		
Location:	SWD 1 2 0		
Sample Point:	Wellhead		

		Anions	mg/l	meq/l	Cations	mg/l	meq/l
Sampling Date:	12/14/2022	**Chloride:**	**684.4**	**19.3**	**Sodium:**	**98.4**	**4.28**
Analysis Date:	12/19/2022	**Bicarbonate:**	**85.4**	**1.4**	**Magnesium:**	**115.4**	**9.49**
Analyst:	Catalyst	**Carbonate:**			**Calcium:**	**593.2**	**29.6**
TDS (mg/l or g/m3):	2694.8	**Sulfate:**	**1100.0**	**22.9**	**Potassium:**	**4.8**	**0.12**
Density (g/cm3):	1.004	**Borate*:**	**5.3**	**0.03**	**Strontium:**	**7.9**	**0.18**
		Phosphate*			**Barium:**	**0.0**	**0.**
Hydrogen Sulfide:					**Iron:**	**0.0**	**0.**
Carbon Dioxide:		***Calculated based on measured elemental boron and phosphorus.**			**Manganese:**	**0.002**	**0.**
Comments:		pH at time of sampling:		8.01			
RA08929		pH at time of analysis:					
		pH used in Calculation:		**8.01**			
		Temperature @ lab conditions (F):		**75**	**Conductivity (micro-mhos/cm):**		**3869**
					Resistivity (ohm meter):		**2.5846**

	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	0.85	4.89	-0.20	0.00	-0.27	0.00	-0.40	0.00	0.00	0.00	
100	0.90	5.94	-0.21	0.00	-0.21	0.00	-0.39	0.00	0.00	0.00	
120	0.96	6.99	-0.20	0.00	-0.12	0.00	-0.36	0.00	0.00	0.00	
140	1.04	8.39	-0.18	0.00	-0.01	0.00	-0.33	0.00	0.00	0.00	
160	1.12	9.79	-0.15	0.00	0.12	104.52	-0.29	0.00	0.00	0.00	
180	1.21	11.54	-0.12	0.00	0.26	206.94	-0.25	0.00	0.00	0.00	
200	1.31	12.93	-0.08	0.00	0.42	291.89	-0.20	0.00	0.00	0.00	
220	1.41	14.68	-0.04	0.00	0.59	359.70	-0.14	0.00	0.00	0.00	

DownHole SAT™ Water Analysis Report

French Creek Software

SYSTEM IDENTIFICATION

Supreme Technologies
Redwood
Leavitt 13 #2H WH
Glorieta-Yeso

Sample ID#: 0
ID 2021-06-04-39

Sample Date: 06-02-2021 at 2216
Report Date: 06-09-2021

WATER CHEMISTRY

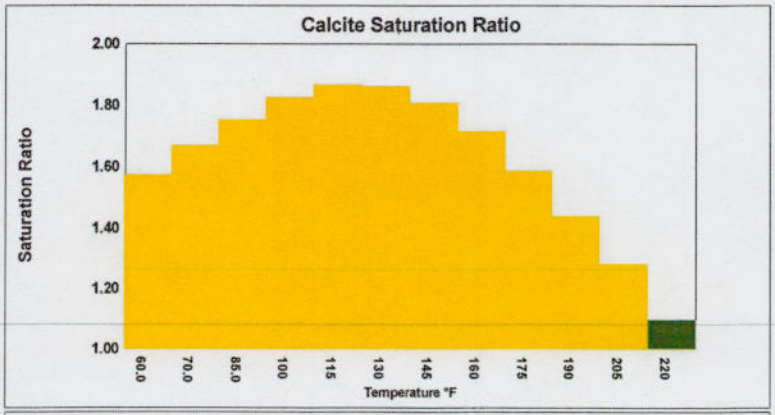
CATIONS		ANIONS	
Calcium(as Ca)	4593	Chloride(as Cl)	121021
Magnesium(as Mg)	984.00	Sulfate(as SO_4)	2179
Barium(as Ba)	0.00	Dissolved CO_2(as CO_2)	225.06
Strontium(as Sr)	88.00	Bicarbonate(as HCO_3)	427.00
Sodium(as Na)	71855	H_2S (as H_2S)	30.00
Potassium(as K)	978.00	Boron(as B)	12.00
Lithium(as Li)	24.00		
Iron(as Fe)	0.00		
Manganese(as Mn)	0.100		
Zinc(as Zn)	0.00		

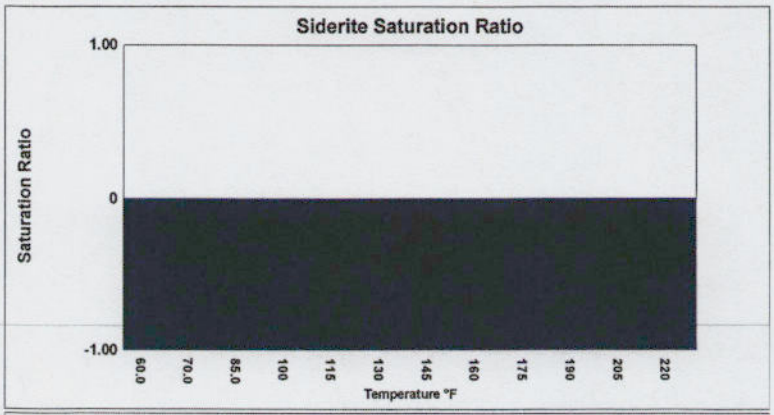
PARAMETERS			
Temperature(°F)	77.00	Sample pH	6.00
Conductivity	233708	Sp.Gr.(g/mL)	1.130
Resistivity	4.28	T.D.S.	217105

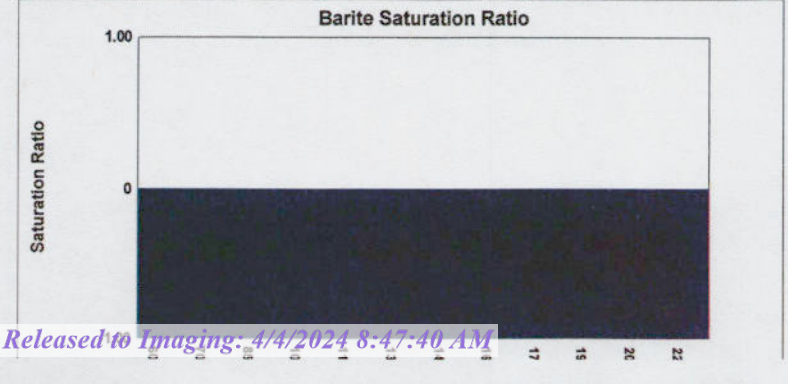
SCALE AND CORROSION POTENTIAL

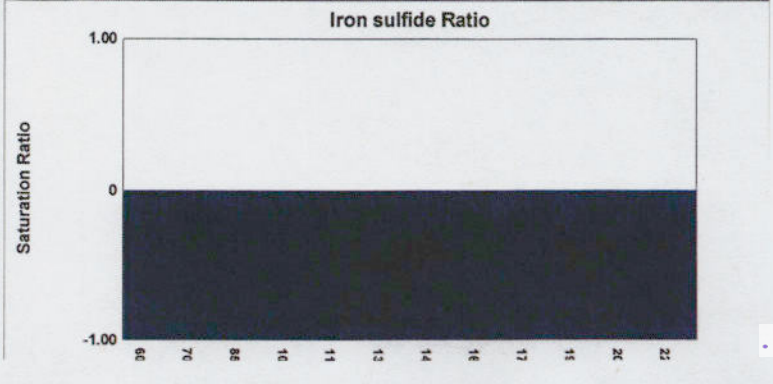
Temp. (°F)	Press. (psia)	Calcite $CaCO_3$			Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackinawite FeS	
60.00	14.70	1.58	0.00963	178.84	1.05	17.58	1.38	108.98	0.00	-0.0736	0.411	-79.55	0.00	-0.395	0.00	-0.46(
70.00	15.00	1.67	0.0104	184.07	1.01	3.67	1.28	83.70	0.00	-0.0991	0.388	-86.07	0.00	-0.366	0.00	-0.54
85.00	38.50	1.75	0.0106	174.23	0.989	-3.45	1.16	50.30	0.00	-0.148	0.367	-91.83	0.00	-0.329	0.00	-0.37
100.00	62.00	1.83	0.0106	170.85	1.01	4.28	1.07	23.34	0.00	-0.211	0.357	-94.32	0.00	-0.299	0.00	-0.33
115.00	85.50	1.87	0.0103	168.46	1.09	22.87	1.11	32.79	0.00	-0.289	0.350	-95.57	0.00	-0.274	0.00	-0.33
130.00	109.00	1.86	0.00952	167.78	1.21	47.80	1.18	47.41	0.00	-0.392	0.342	-97.40	0.00	-0.253	0.00	-0.34
145.00	132.50	1.81	0.00841	168.21	1.39	75.32	1.24	58.25	0.00	-0.526	0.333	-99.84	0.00	-0.236	0.00	-0.38
160.00	156.00	1.71	0.00706	169.31	1.65	102.76	1.29	66.46	0.00	-0.700	0.323	-102.76	0.00	-0.221	0.00	-0.43
175.00	179.50	1.59	0.00556	170.82	2.01	127.90	1.34	72.41	0.00	-0.923	0.312	-106.28	0.00	-0.209	0.00	-0.50
190.00	203.00	1.44	0.00403	169.62	2.51	149.92	1.38	76.85	0.00	-1.21	0.300	-110.31	0.00	-0.199	0.00	-0.60
205.00	226.50	1.28	0.00252	168.50	3.20	168.52	1.42	80.17	0.00	-1.57	0.289	-114.86	0.00	-0.190	0.00	-0.71
220.00	250.00	1.10	< 0.001	165.97	4.12	186.86	1.43	81.83	0.00	-2.05	0.273	-122.64	0.00	-0.186	0.00	-0.89
		xSAT	Lbs per 1000 Barrels	PP	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	PP	xSAT	Lbs pe 1000 Barrels

Saturation Ratios (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.









DownHole SAT(tm)

SURFACE WATER CHEMISTRY INPUT

Supreme Technologies
Leavitt 13 #2H WH
Glorieta-Yeso

Redwood

Report Date: 06-09-2021
Sample #: 0

Sampled: 06-02-2021 at 2216
Sample ID: 2021-06-04-39

CATIONS		ANIONS	
Calcium (as Ca)	4593	Chloride (as Cl)	121021
Magnesium (as Mg)	984.00	Sulfate (as SO_4)	2179
Barium (as Ba)	0.00	Dissolved CO_2 (as CO_2)	225.06
Strontium (as Sr)	88.00	Bicarbonate (as HCO_3)	427.00
Sodium (as Na)	71855	H_2S (as H_2S)	30.00
Potassium (as K)	978.00	Boron (as B)	12.00
Lithium (as Li)	24.00		
Iron (as Fe)	0.00		
Manganese (as Mn)	0.100		
Zinc (as Zn)	0.00		

PARAMETERS	
Calculated T.D.S.	217105
Molar Conductivity	233708
Resistivity	4.28
Sp.Gr.(g/mL)	1.130
Pressure(psia)	15.00
Temperature (^oF)	77.00
pH	6.00

BOUND IONS	TOTAL	FREE
Calcium	5190	4753
Barium	0.00	0.00
Carbonate	20.07	0.0439
Phosphate	0.00	0.00
Sulfate	2462	696.30

CORROSION RATE PREDICTION

CO_2 - H_2S Rate(mpy)	0.327

FRENCH CREEK SOFTWARE, INC.
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460

DownHole SAT(tm)

SURFACE WATER
DEPOSITION POTENTIAL INDICATORS

Supreme Technologies — Redwood
Leavitt 13 #2H WH
Glorieta-Yeso

Report Date: 06-09-2021 Sampled: 06-02-2021 at 2216
Sample #: 0 Sample ID: 2021-06-04-39

SATURATION RATIO as IAP/Ksp		FREE ION MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite ($CaCO_3$)	1.73	Calcite ($CaCO_3$)	0.0108
Aragonite ($CaCO_3$)	1.60	Aragonite ($CaCO_3$)	0.00959
Witherite ($BaCO_3$)	0.00	Witherite ($BaCO_3$)	-27.73
Strontianite ($SrCO_3$)	0.03	Strontianite ($SrCO_3$)	-1.28
Calcium oxalate (CaC_2O_4)	0.00	Calcium oxalate (CaC_2O_4)	-0.00752
Magnesite ($MgCO_3$)	0.44	Magnesite ($MgCO_3$)	-0.0271
Anhydrite ($CaSO_4$)	1.00	Anhydrite ($CaSO_4$)	-1.15
Gypsum ($CaSO_4*2H_2O$)	1.22	Gypsum ($CaSO_4*2H_2O$)	67.84
Barite ($BaSO_4$)	0.00	Barite ($BaSO_4$)	-0.120
Celestite ($SrSO_4$)	0.38	Celestite ($SrSO_4$)	-89.07
Fluorite (CaF_2)	0.00	Fluorite (CaF_2)	-2.78
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-263.20
Silica (SiO_2)	0.00	Silica (SiO_2)	-27.99
Brucite ($Mg(OH)_2$)	< 0.001	Brucite ($Mg(OH)_2$)	-0.233
Magnesium silicate	0.00	Magnesium silicate	-87.51
Iron hydroxide ($Fe(OH)_3$)	0.00	Iron hydroxide ($Fe(OH)_3$)	-0.211
Strengite ($FePO_4*2H_2O$)	0.00	Strengite ($FePO_4*2H_2O$)	>-0.001
Siderite ($FeCO_3$)	0.00	Siderite ($FeCO_3$)	-0.347
Halite (NaCl)	0.24	Halite (NaCl)	-73627
Thenardite ($Na2SO_4$)	0.00	Thenardite ($Na2SO_4$)	-84955
Iron sulfide (FeS)	0.00	Iron sulfide (FeS)	-0.570

SIMPLE INDICES		CARBONATE PRECIPITATION POTENTIAL (Lbs/1000 Barrels)	
Langelier	0.876	Calcite ($CaCO_3$)	187.56
Ryznar	4.25	Aragonite ($CaCO_3$)	185.27
Puckorius	1.66	Witherite ($BaCO_3$)	0.00
Larson-Skold Index	301.16	Strontianite ($SrCO_3$)	-18.23
Stiff Davis Index	0.732	Magnesite ($MgCO_3$)	135.47
Oddo-Tomson	-0.237	Siderite ($FeCO_3$)	0.00

OPERATING CONDITIONS

Temperature (^oF)	77.00
Time(mins)	3.00

FRENCH CREEK SOFTWARE, INC.
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460

DownHole SAT™ Water Analysis Report

French Creek Software

SYSTEM IDENTIFICATION

Supreme Technologies
Redwood
Leavitt 14 A #2 WH
Glorieta-Yeso

Sample ID#: 0
ID: 2021-06-03-28

Sample Date: 05-31-2021 at 1553
Report Date: 06-06-2021

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	4646
Magnesium(as Mg)	964.00
Barium(as Ba)	0.00
Strontium(as Sr)	87.00
Sodium(as Na)	66750
Potassium(as K)	863.00
Lithium(as Li)	23.00
Iron(as Fe)	0.100
Manganese(as Mn)	0.00
Zinc(as Zn)	0.00

ANIONS

Chloride(as Cl)	111832
Sulfate(as SO_4)	1796
Dissolved CO_2(as CO_2)	180.00
Bicarbonate(as HCO_3)	329.00
H_2S (as H_2S)	136.00
Boron(as B)	13.00

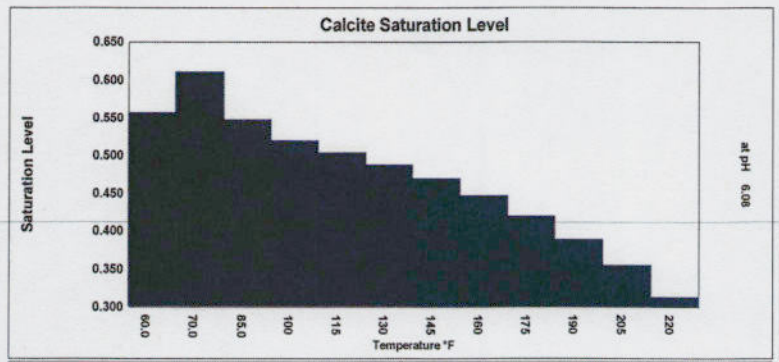
PARAMETERS

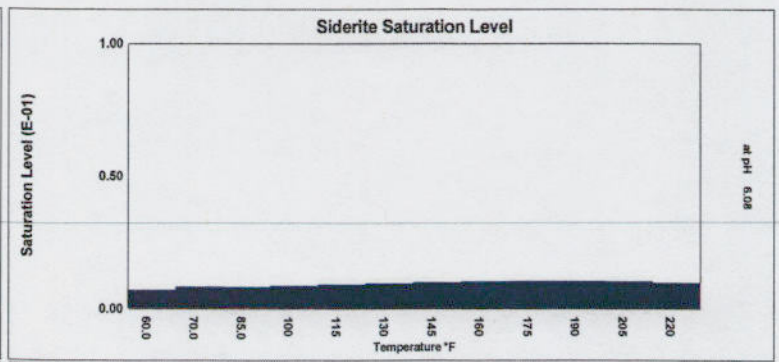
Temperature(°F)	77.00
Sample pH	6.00
Conductivity	286589
T.D.S.	180517
Resistivity	3.49
Sp.Gr.(g/mL)	1.13

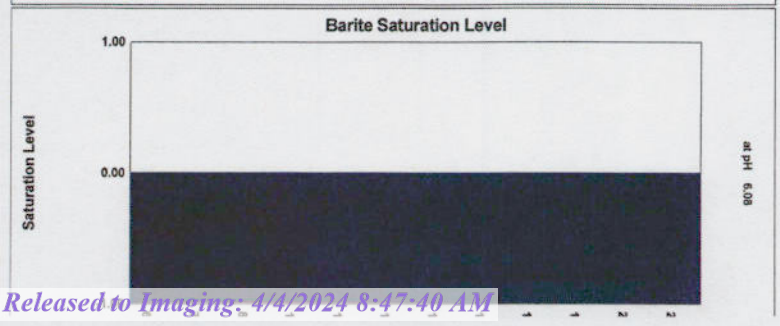
SCALE AND CORROSION POTENTIAL

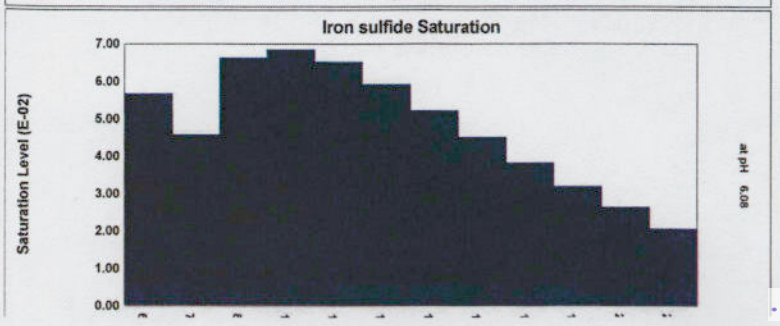
Temp. (°F)	Press. (psig)	Calcite $CaCO_3$		Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackawenite FeS		CO_2 (mpy)	pCO_2 (atm)
		xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels		
60.00	0.00	0.557	-0.0110	0.677	-140.34	0.950	-18.16	0.00	-0.0765	0.345	-89.18	0.00676	-0.368	0.0566	-0.139	0.239	0.0870
70.00	0.30	0.610	-0.00898	0.652	-151.80	0.885	-42.84	0.00	-0.103	0.326	-95.07	0.00796	-0.338	0.0456	-0.171	0.367	0.0888
85.00	23.80	0.547	-0.00941	0.641	-151.98	0.806	-75.10	0.00	-0.153	0.310	-100.05	0.00794	-0.303	0.0660	-0.115	0.966	0.228
100.00	47.30	0.519	-0.00912	0.661	-133.98	0.748	-100.40	0.00	-0.216	0.303	-101.79	0.00832	-0.273	0.0683	-0.109	1.75	0.367
115.00	70.80	0.503	-0.00871	0.710	-102.98	0.777	-82.25	0.00	-0.295	0.299	-102.38	0.00886	-0.247	0.0651	-0.113	2.25	0.506
130.00	94.30	0.487	-0.00837	0.791	-64.36	0.826	-58.49	0.00	-0.398	0.293	-103.55	0.00940	-0.226	0.0591	-0.122	2.52	0.645
145.00	117.80	0.469	-0.00816	0.912	-22.83	0.870	-40.00	0.00	-0.533	0.287	-105.29	0.00986	-0.208	0.0521	-0.135	2.74	0.784
160.00	141.30	0.447	-0.00809	1.08	17.91	0.911	-25.62	0.00	-0.706	0.279	-107.59	0.0102	-0.193	0.0450	-0.154	2.99	0.923
175.00	164.80	0.419	-0.00814	1.32	55.27	0.946	-14.54	0.00	-0.927	0.271	-110.46	0.0104	-0.180	0.0382	-0.177	3.19	1.06
190.00	188.30	0.388	-0.00831	1.66	87.92	0.976	-6.06	0.00	-1.21	0.261	-113.86	0.0103	-0.169	0.0319	-0.206	1.48	1.20
205.00	211.80	0.355	-0.00857	2.12	115.46	1.00	0.432	0.00	-1.56	0.252	-117.80	0.0102	-0.160	0.0262	-0.244	0.706	1.34
220.00	235.30	0.313	-0.00929	2.72	139.62	1.01	2.06	0.00	-2.04	0.239	-124.90	0.00961	-0.156	0.0205	-0.298	0.273	1.48

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.









DownHole SAT(tm)

SURFACE WATER CHEMISTRY INPUT

Supreme Technologies Redwood
Leavitt 14 A #2 WH
Glorieta-Yeso

Report Date: 06-06-2021 Sampled: 05-31-2021 at 1553
Sample ID: 2021-06-03-28 Sample ID: 2021-06-03-28

CATIONS		ANIONS	
Calcium (as Ca)	4646	Chloride (as Cl)	111832
Magnesium (as Mg)	964.00	Sulfate (as SO_4)	1796
Barium (as Ba)	0.00	Dissolved CO_2 (as CO_2)	180.00
Strontium (as Sr)	87.00	Bicarbonate (as HCO_3)	329.00
Sodium (as Na)	66750	H_2S (as H_2S)	136.00
Potassium (as K)	863.00	Boron (as B)	13.00
Lithium (as Li)	23.00		
Iron (as Fe)	0.100		
Manganese (as Mn)	0.00		
Zinc (as Zn)	0.00		

PARAMETERS

Calculated T.D.S.	180517
Molar Conductivity	286589
Resistivity	3.49
Sp.Gr.(g/mL)	1.13
Pressure(psia)	15.00
Temperature (^oF)	77.00
pH	6.00

CORROSION RATE PREDICTION

CO_2 - H_2S Rate(mpy)	0.452

FRENCH CREEK SOFTWARE, INC.
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460

DownHole SAT(tm)

SURFACE WATER
DEPOSITION POTENTIAL INDICATORS

Supreme Technologies Redwood
Leavitt 14 A #2 WH
Glorieta-Yeso

Report Date: 06-06-2021 Sampled: 05-31-2021 at 1553
Sample ID: 2021-06-03-28 Sample ID: 2021-06-03-28

SATURATION LEVEL		MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite ($CaCO_3$)	0.561	Calcite ($CaCO_3$)	-0.00958
Aragonite ($CaCO_3$)	0.519	Aragonite ($CaCO_3$)	-0.0114
Witherite ($BaCO_3$)	0.00	Witherite ($BaCO_3$)	-27.60
Strontianite ($SrCO_3$)	0.0118	Strontianite ($SrCO_3$)	-1.47
Calcium oxalate (CaC_2O_4)	0.00	Calcium oxalate (CaC_2O_4)	-0.0111
Magnesite ($MgCO_3$)	0.132	Magnesite ($MgCO_3$)	-0.0681
Anhydrite ($CaSO_4$)	0.644	Anhydrite ($CaSO_4$)	-153.56
Gypsum ($CaSO_4*2H_2O$)	0.847	Gypsum ($CaSO_4*2H_2O$)	-58.02
Barite ($BaSO_4$)	0.00	Barite ($BaSO_4$)	-0.124
Celestite ($SrSO_4$)	0.318	Celestite ($SrSO_4$)	-97.77
Fluorite (CaF_2)	0.00	Fluorite (CaF_2)	-3.47
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-304.59
Silica (SiO_2)	0.00	Silica (SiO_2)	-31.47
Brucite ($Mg(OH)_2$)	< 0.001	Brucite ($Mg(OH)_2$)	< 0.001
Magnesium silicate	0.00	Magnesium silicate	-96.47
Iron hydroxide ($Fe(OH)_3$)	< 0.001	Iron hydroxide ($Fe(OH)_3$)	< 0.001
Strengite ($FePO_4*2H_2O$)	0.00	Strengite ($FePO_4*2H_2O$)	>-0.001
Siderite ($FeCO_3$)	0.00769	Siderite ($FeCO_3$)	-0.321
Halite (NaCl)	0.133	Halite (NaCl)	-102986
Thenardite ($Na2SO_4$)	< 0.001	Thenardite ($Na2SO_4$)	-85717
Iron sulfide (FeS)	0.0429	Iron sulfide (FeS)	-0.181

SIMPLE INDICES		BOUND IONS	TOTAL	FREE
Langelier	0.246	Calcium	4646	4389
Ryznar	5.51	Barium	0.00	0.00
Puckorius	3.56	Carbonate	4.12	0.0211
Larson-Skold Index	660.02	Phosphate	0.00	0.00
Stiff Davis Index	-0.0648	Sulfate	1796	612.62
Oddo-Tomson	-0.901			

OPERATING CONDITIONS

Temperature (^oF)	77.00
Time(mins)	3.00

FRENCH CREEK SOFTWARE, INC.
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460

DownHole SAT™ Water Analysis Report

French Creek Software

SYSTEM IDENTIFICATION

Supreme Technologies
Redwood
Kaiser B #1 WH
Queen-Grayburg-
San Andres

Sample ID#: 0
ID: 2021-06-03-9

Sample Date: 05-31-2021 at 1553
Report Date: 06-06-2021

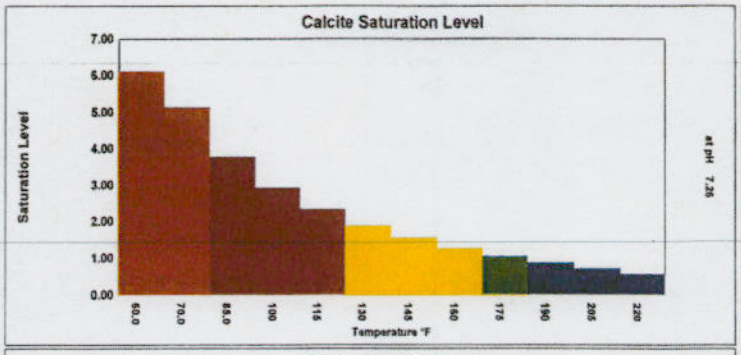
WATER CHEMISTRY

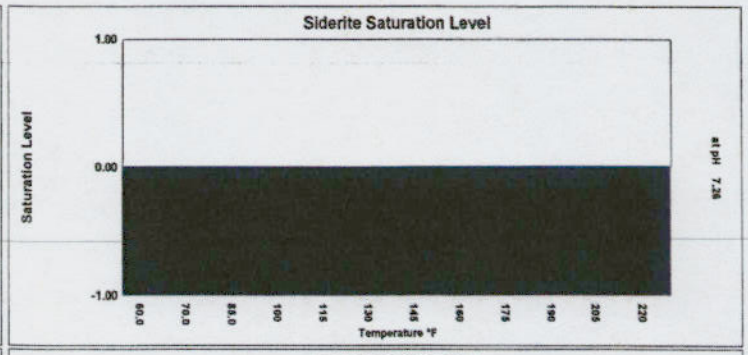
CATIONS		ANIONS	
Calcium(as Ca)	3262	Chloride(as Cl)	139429
Magnesium(as Mg)	556.00	Sulfate(as SO_4)	3973
Barium(as Ba)	0.00	Dissolved CO_2(as CO_2)	250.00
Strontium(as Sr)	59.00	Bicarbonate(as HCO_3)	390.00
Sodium(as Na)	88835	H_2S (as H_2S)	17.00
Potassium(as K)	50.00	Boron(as B)	8.90
Lithium(as Li)	22.00		
Iron(as Fe)	0.00		
Manganese(as Mn)	0.00	**PARAMETERS**	
		Temperature(°F)	77.00
		Sample pH	7.00
		Conductivity	396368
		T.D.S.	223486
		Resistivity	2.52
		Sp.Gr.(g/mL)	1.15
Zinc(as Zn)	0.00		

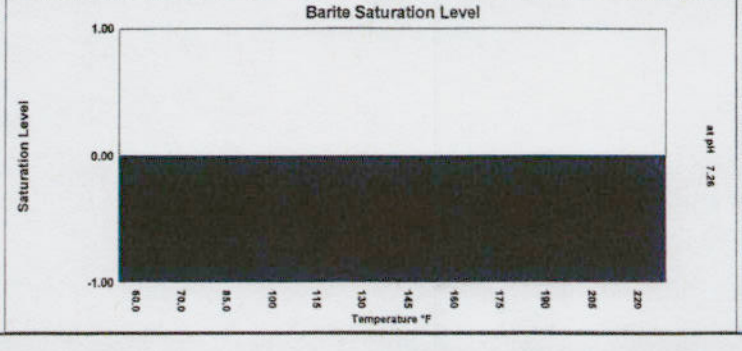
SCALE AND CORROSION POTENTIAL

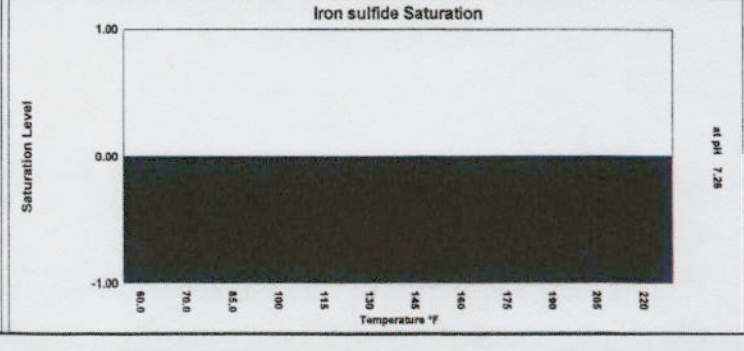
Temp.	Press.	Calcite $CaCO_3$		Anhydrite $CaSO_4$		Gypsum $CaSO_4*2H_2O$		Barite $BaSO_4$		Celestite $SrSO_4$		Siderite $FeCO_3$		Mackawenite FeS		CO_2	pCO_2
(°F)	(psig)	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	xSAT	Lbs per 1000 Barrels	(mpy)	(atm)
60.00	0.00	6.08	0.146	1.21	103.63	1.57	257.16	0.00	-0.0385	0.467	-45.14	0.00	-0.326	0.00	-0.0184	0.0458	0.0225
70.00	0.30	5.12	0.110	1.17	84.09	1.47	218.84	0.00	-0.0514	0.443	-49.29	0.00	-0.315	0.00	-0.0323	0.0447	0.0230
85.00	23.80	3.77	0.0667	1.15	75.36	1.34	167.95	0.00	-0.0761	0.424	-52.94	0.00	-0.299	0.00	-0.0303	0.102	0.0590
100.00	47.30	2.92	0.0423	1.19	89.72	1.25	127.15	0.00	-0.107	0.416	-54.40	0.00	-0.282	0.00	-0.0391	0.167	0.0951
115.00	70.80	2.33	0.0271	1.29	121.66	1.31	145.21	0.00	-0.146	0.412	-55.00	0.00	-0.264	0.00	-0.0535	0.0641	0.131
130.00	94.30	1.89	0.0168	1.45	164.10	1.40	171.41	0.00	-0.196	0.406	-56.09	0.00	-0.248	0.00	-0.0744	0.179	0.167
145.00	117.80	1.54	0.00963	1.68	212.03	1.49	191.96	0.00	-0.261	0.399	-57.55	0.00	-0.234	0.00	-0.103	0.307	0.203
160.00	141.30	1.26	0.00440	2.01	260.44	1.57	207.82	0.00	-0.344	0.390	-59.43	0.00	-0.222	0.00	-0.143	0.489	0.239
175.00	164.80	1.03	< 0.001	2.47	306.07	1.64	220.17	0.00	-0.451	0.380	-61.72	0.00	-0.211	0.00	-0.195	0.677	0.275
190.00	188.30	0.842	-0.00248	3.11	346.75	1.70	229.68	0.00	-0.586	0.368	-64.45	0.00	-0.202	0.00	-0.264	0.339	0.311
205.00	211.80	0.686	-0.00480	4.00	381.83	1.76	237.18	0.00	-0.757	0.356	-67.60	0.00	-0.194	0.00	-0.353	0.307	0.347
220.00	235.30	0.541	-0.00713	5.17	416.73	1.78	242.20	0.00	-0.988	0.337	-73.08	0.00	-0.190	0.00	-0.484	0.414	0.383

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.









DownHole SAT(tm)

SURFACE WATER CHEMISTRY INPUT

Supreme Technologies Redwood
Kaiser B #1 WH
Queen-Grayburg- San Andres

Report Date: 06-06-2021 Sampled: 05-31-2021 at 1553
Sample ID: 2021-06-03-9 Sample ID: 2021-06-03-9

CATIONS		ANIONS	
Calcium (as Ca)	3262	Chloride (as Cl)	139429
Magnesium (as Mg)	556.00	Sulfate (as SO_4)	3973
Barium (as Ba)	0.00	Dissolved CO_2 (as CO_2)	250.00
Strontium (as Sr)	59.00	Bicarbonate (as HCO_3)	390.00
Sodium (as Na)	88835	H_2S (as H_2S)	17.00
Potassium (as K)	50.00	Boron (as B)	8.90
Lithium (as Li)	22.00		
Iron (as Fe)	0.00		
Manganese (as Mn)	0.00		
Zinc (as Zn)	0.00		

PARAMETERS

Calculated T.D.S.	223486
Molar Conductivity	396368
Resistivity	2.52
Sp.Gr.(g/mL)	1.15
Pressure(psia)	15.00
Temperature (^oF)	77.00
pH	7.00

CORROSION RATE PREDICTION

CO_2 - H_2S Rate(mpy)	0.0528

FRENCH CREEK SOFTWARE, INC.
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460

DownHole SAT(tm)

SURFACE WATER
DEPOSITION POTENTIAL INDICATORS

Supreme Technologies Redwood
Kaiser B #1 WH
Queen-Grayburg-San Andres

Report Date: 06-06-2021 Sampled: 05-31-2021 at 1553
Sample ID: 2021-06-03-9 Sample ID: 2021-06-03-9

SATURATION LEVEL		MOMENTARY EXCESS (Lbs/1000 Barrels)	
Calcite ($CaCO_3$)	3.94	Calcite ($CaCO_3$)	0.0745
Aragonite ($CaCO_3$)	3.65	Aragonite ($CaCO_3$)	0.0724
Witherite ($BaCO_3$)	0.00	Witherite ($BaCO_3$)	-28.05
Strontianite ($SrCO_3$)	0.0629	Strontianite ($SrCO_3$)	-2.06
Calcium oxalate (CaC_2O_4)	0.00	Calcium oxalate (CaC_2O_4)	-0.0129
Magnesite ($MgCO_3$)	0.793	Magnesite ($MgCO_3$)	-0.0219
Anhydrite ($CaSO_4$)	1.16	Anhydrite ($CaSO_4$)	78.07
Gypsum ($CaSO_4*2H_2O$)	1.41	Gypsum ($CaSO_4*2H_2O$)	194.92
Barite ($BaSO_4$)	0.00	Barite ($BaSO_4$)	-0.0621
Celestite ($SrSO_4$)	0.433	Celestite ($SrSO_4$)	-51.26
Fluorite (CaF_2)	0.00	Fluorite (CaF_2)	-3.67
Calcium phosphate	0.00	Calcium phosphate	>-0.001
Hydroxyapatite	0.00	Hydroxyapatite	-267.07
Silica (SiO_2)	0.00	Silica (SiO_2)	-28.17
Brucite ($Mg(OH)_2$)	< 0.001	Brucite ($Mg(OH)_2$)	0.00303
Magnesium silicate	0.00	Magnesium silicate	-89.14
Iron hydroxide ($Fe(OH)_3$)	0.00	Iron hydroxide ($Fe(OH)_3$)	-0.214
Strengite ($FePO_4*2H_2O$)	0.00	Strengite ($FePO_4*2H_2O$)	>-0.001
Siderite ($FeCO_3$)	0.00	Siderite ($FeCO_3$)	-0.314
Halite (NaCl)	0.259	Halite (NaCl)	-72069
Thenardite ($Na2SO_4$)	< 0.001	Thenardite ($Na2SO_4$)	-86536
Iron sulfide (FeS)	0.00	Iron sulfide (FeS)	-0.0416

SIMPLE INDICES		BOUND IONS	TOTAL	FREE
Langelier	1.39	Calcium	3262	2858
Ryznar	4.21	Barium	0.00	0.00
Puckorius	3.03	Carbonate	88.17	0.172
Larson-Skold Index	570.61	Phosphate	0.00	0.00
Stiff Davis Index	1.25	Sulfate	3973	1385
Oddo-Tomson	0.281			

OPERATING CONDITIONS

Temperature (^oF)	77.00
Time(mins)	3.00

FRENCH CREEK SOFTWARE, INC.
1220 VALLEY FORGE ROAD, SUITE 21, VALLEY FORGE, PA 19460

New Mexico Office of the State Engineer

Currently Active Points of Diversion

(with Ownership Information)

(acre ft per annum) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Grant	Source	q 64	q 16	q 4	Sec	Tws	Rng	X	Y
RA 02385	RA	DOM	0	JEFF C. FLOYD	ED	RA 02385				1	3		27	19S	27E	568171	3610454*
RA 05367	RA	SAN	0	YATES DRILLING COMPANY	ED	RA 05367				4	1		28	19S	27E	566971	3610857*
RA 05475	RA	STK	3	RAYMOND NETHERLIN	ED	RA 05475			Shallow	3	1		16	19S	27E	566555	3614078*
RA 06123	RA	PRO	0	PHILLIPS PETROLEUM COMPANY	CH	RA 06123				4	2	4	15	19S	27E	569486	3613610*
RA 06705	RA	PRO	0	GULF OIL CORP.	ED	RA 06705			Shallow	4	2	4	30	19S	27E	564608	3610358*
RA 07559	RA	PRO	0	HARVARD PETROLEUM CORPORATION	ED	RA 07559				4	4	4	14	19S	27E	571101	3613197*
RA 07672	RA	PRO	0	YATES PETROLEUM	ED	RA 07672			Shallow	1	1	3	08	19S	27E	564836	3615376*
RA 08645	RA	PRO	3	STEVEN V. MCCUTCHEON	ED	RA 08645			Shallow	3	3	3	34	19S	27E	567919	3608365*
RA 08929	RA	DOM	3	BILL NETHERLIN	ED	RA 08929			Shallow	3	3	1	13	19S	27E	571282	3613992*

Record Count: 9

PLSS Search:

Township: 19S **Range:** 27E

Sorted by: File Number

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Water Right Summary

WR File Number: RA 02385 **Subbasin:** RA **Cross Reference:** -

Primary Purpose: DOM 72-12-1 DOMESTIC ONE HOUSEHOLD

Primary Status: EXP EXPIRED

Total Acres: **Subfile:** - **Header:** -

Total Diversion: 0 **Cause/Case:** -

Owner: JEFF C. FLOYD

Documents on File

Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
200207	72121	1948-03-11	EXP	EXP	RA 02385	T		3	

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
RA 02385				1	3	27	19S	27E	568171	3610454*	

***An (*) after northing value indicates UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer

Water Right Summary

WR File Number: RA 05367 **Subbasin:** RA **Cross Reference:** -

Primary Purpose: SAN 72-12-1 SANITARY IN CONJUNCTION WITH A COMMERCIAL USE

Primary Status: PMT PERMIT

Total Acres: **Subfile:** - **Header:** -

Total Diversion: 0 **Cause/Case:** -

Owner: YATES DRILLING COMPANY

Documents on File

Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/To	Acres	Diversion	Consumptive
254337	72121	1967-06-14	PMT	APR	RA 05367	T		3	

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
RA 05367				4	1	28	19S	27E	566971	3610857*	

***An (*) after northing value indicates UTM location was derived from PLSS - see Help**

11/9/22 9:08 AM WATER RIGHT SUMMARY

New Mexico Office of the State Engineer

Water Right Summary

WR File Number: RA 05475 **Subbasin:** RA **Cross Reference:** -

Primary Purpose: STK 72-12-1 LIVESTOCK WATERING

Primary Status: PMT PERMIT

Total Acres: **Subfile:** - **Header:** -

Total Diversion: 3 **Cause/Case:** -

Owner: RAYMOND NETHERLIN

Documents on File

Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
252789	72121	1969-01-14	PMT	LOG	RA 05475	T		3	

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
RA 05475		Shallow	3	1		16	19S	27E	566555	3614078*	

***An (*) after northing value indicates UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer

Water Right Summary

WR File Number: RA 06123 **Subbasin:** RA **Cross Reference:** -

Primary Purpose: PRO 72-12-1 PROSPECTING OR DEVELOPMENT OF NATURAL RESOURCE

Primary Status: PMT PERMIT

Total Acres: **Subfile:** - **Header:** -

Total Diversion: 0 **Cause/Case:** -

Owner: PHILLIPS PETROLEUM COMPANY

Documents on File

Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
243744	72121	1977-02-24	PMT	LOG	RA 06123	T		3	

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
RA 06123			4	2	4	15	19S	27E	569486	3613610*	

***An (*) after northing value indicates UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Water Right Summary

WR File Number: RA 06705 **Subbasin:** RA **Cross Reference:** -

Primary Purpose: PRO 72-12-1 PROSPECTING OR DEVELOPMENT OF NATURAL RESOURCE

Primary Status: PMT PERMIT

Total Acres: **Subfile:** - **Header:** -

Total Diversion: 0 **Cause/Case:** -

Owner: GULF OIL CORP.

Documents on File

Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
111874	72121	1980-08-04	PMT	APR	CONVERSION RA 06705	T		3	
256656	72121	1980-08-01	PMT	LOG	RA 06705	T		3	

---For more infomation on Conversion Transactions, please see Help---

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
RA 06705		Shallow	4	2	4	30	19S	27E	564608	3610358*	

***An (*) after northing value indicates UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer

Water Right Summary

WR File Number: RA 07559 **Subbasin:** RA **Cross Reference:** -

Primary Purpose: PRO 72-12-1 PROSPECTING OR DEVELOPMENT OF NATURAL RESOURCE

Primary Status: EXP EXPIRED

Total Acres: **Subfile:** - **Header:** -

Total Diversion: 0 **Cause/Case:** -

Owner: HARVARD PETROLEUM CORPORATION

Documents on File

Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
246889	72121	1986-09-22	EXP	EXP	RA 07559	T		0	

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
RA 07559			4	4	4	14	19S	27E	571101	3613197*	

***An (*) after northing value indicates UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Water Right Summary

WR File Number: RA 07672 **Subbasin:** RA **Cross Reference:** -

Primary Purpose: PRO 72-12-1 PROSPECTING OR DEVELOPMENT OF NATURAL RESOURCE

Primary Status: PMT PERMIT

Total Acres: **Subfile:** - **Header:** -

Total Diversion: 0 **Cause/Case:** -

Owner: YATES PETROLEUM

Documents on File

Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
247852	72121	1988-06-23	PMT	LOG	RA 07672	T		0	

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
RA 07672		Shallow	1	1	3	08	19S	27E	564836	3615376*	

***An (*) after northing value indicates UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Water Right Summary

get image list

WR File Number: RA 08645 **Subbasin:** RA **Cross Reference:** -

Primary Purpose: PRO 72-12-1 PROSPECTING OR DEVELOPMENT OF NATURAL RESOURCE

Primary Status: DCL DECLARATION

Total Acres: 0 **Subfile:** - **Header:** -

Total Diversion: 3 **Cause/Case:** -

Owner: STEVEN V. MCCUTCHEON

Documents on File

	Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
get images	321855	72121	2005-01-25	EXP	EXP	RA 08645	T		3	
	246622	DCL	1993-11-10	DCL	PRC	RA 08645	T	0	3	

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
RA 08645		Shallow	3	3	3	34	19S	27E	567919	3608365*	

*An (*) after northing value indicates UTM location was derived from PLSS - see Help

Priority Summary

Priority	Status	Acres	Diversion	Pod Number	
12/31/1942	DCL	0	3	RA 08645	Shallow

Place of Use

Q 256	Q 64	Q16	Q4	Sec	Tws	Rng	Acres	Diversion	CU	Use	Priority	Status	Other Location Desc
										STK		DCL	NO PLACE OF USE GIVEN

Source

Acres	Diversion	CU	Use	Priority	Source	Description
0	3		STK	12/31/1942	GW	SHALLOW

New Mexico Office of the State Engineer
Water Right Summary

WR File Number: RA 08929 **Subbasin:** RA **Cross Reference:** -

Primary Purpose: DOM 72-12-1 DOMESTIC ONE HOUSEHOLD

Primary Status: PMT PERMIT

Total Acres: **Subfile:** - **Header:** -

Total Diversion: 3 **Cause/Case:** -

Owner: BILL NETHERLIN

Documents on File

Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
250712	72121	1995-01-13	PMT	LOG	RA 08929	T		3	

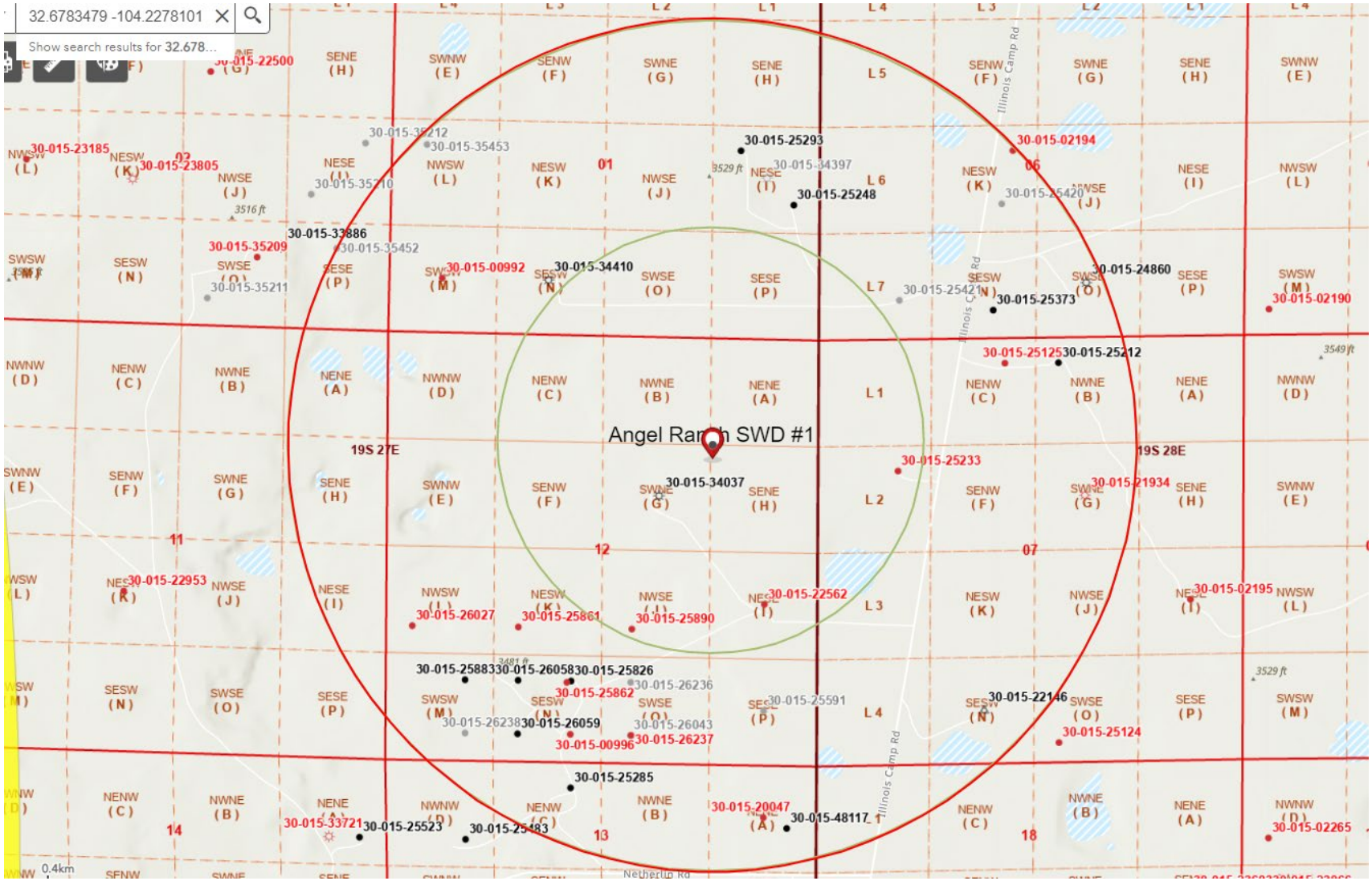
Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
RA 08929		Shallow	3	3	1	13	19S	27E	571282	3613992*	

***An (*) after northing value indicates UTM location was derived from PLSS - see Help**

Seismicity Analysis
Angel Ranch SWD #1
Sec. 12 T19S R27E 1320 FNL 1320 FEL



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 Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 165235

CONDITIONS

Operator: Redwood Operating LLC PO Box 1370 Artesia, NM 88210	OGRID: 330211
	Action Number: 165235
	Action Type: [C-108] Fluid Injection Well (C-108)

CONDITIONS

Created By	Condition	Condition Date
anthony.harris	None	4/4/2024