

3/29/2019
DATE IN 3/31/2019

SUSPENSE

MAM
ENGINEER

LOGGED IN 4/14/2018

TYPE SWD

APP NO. PMAM 18318 31677

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- 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

Application Acronyms:

- [NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

- [A] Location - Spacing Unit - Simultaneous Dedication
[] NSL [] NSP [] SD

Check One Only for [B] or [C]

- [B] Commingling - Storage - Measurement
[] DHC [] CTB [] PLC [] PC [] OLS [] OLM

- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
[] WFX [] PMX [X] SWD [] IPI [] EOR [] PPR

[D] Other: Specify _____

Handwritten notes: - SWD 1846, - BLACK RIVER WATER Management Company, LLC 371287, - well, - FAULK SWD # 7 30-015-Randall 45442, POOL, - SWD, Devonian

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or [] Does Not Apply

- [A] [] Working, Royalty or Overriding Royalty Interest Owners
[B] [X] Offset Operators, Leaseholders or Surface Owner
[C] [X] Application is One Which Requires Published Legal Notice
[D] [] Notification and/or Concurrent Approval by BLM or SLO
[E] [X] For all of the above, Proof of Notification or Publication is Attached, and/or,
[F] [] Waivers are Attached

[3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] 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.

Lara Thompson
Print or Type Name

Lara Thompson
Signature

Project Manager
Title

10/29/18
Date

lara.thompson@swcca.com
e-mail Address



FORM C-108 Technical Review Summary [Prepared by reviewer and included with application; V17]

DATE RECORD: First Rec: 10/31/2018 Admin Complete: 3/29/2018 or Suspended: _____ Add. Request/Reply: _____

ORDER TYPE: WFX / PMX / SWD Number: _____ Order Date: _____ Legacy Permits/Orders: _____

Well No. 7 Well Name(s): FUGLK SWD

API: 30-0 15-4542 Spud Date: _____ New or Old (EPA): _____ (UIC Class II Primacy 03/07/1982)

Footages 161 FSL SISFEL Lot _____ or Unit P Sec 32 Tsp 22S Rge 28E County Eddy

General Location: _____ Pool: Sud Devonian Pool No.: 96101

BLM 100K Map: _____ Operator: BLACK RIVER WATER MANAGEMENT CO OGRID: 370287 Contact: Lane Thompson

COMPLIANCE RULE 5.9: Total Wells: 8 Inactive: 0 Fincl Assur: OK Compl. Order? NA IS 5.9 OK? Y Date: 4-16-2019

WELL FILE REVIEWED Current Status: P

WELL DIAGRAMS: NEW: Proposed or RE-ENTER: Before Conv. After Conv. Logs in Imaging: NA

Planned Rehab Work to Well: _____

Well Construction Details	Sizes (in) Borehole / Pipe	Setting Depths (ft)	Stage Tool	Cement Sx or Cf	Cement Top and Determination Method
Planned ___ or Existing ___ Surface	<u>26 1/2" / 20"</u>	<u>550</u>		<u>1100</u>	<u>SURFAC/UIS401</u>
Planned ___ or Existing ___ Interm/Prod	<u>18 1/2" / 16"</u>	<u>2600</u>		<u>1400</u>	<u>SURFAC/UIS401</u>
Planned ___ or Existing ___ Interm/Prod	<u>14 3/4" / 10 7/8"</u>	<u>10400</u>		<u>3800</u>	<u>SURFAC/UIS401</u>
Planned ___ or Existing ___ Prod/Liner	<u>9 1/2" / 7 5/8"</u>	<u>13762</u>		<u>1100</u>	<u>9900 / C-B-L</u>
Planned ___ or Existing ___ Liner					
Planned ___ or Existing ___ <input checked="" type="radio"/> OH / PERF	<u>13762 / 14601</u>		Inj Length <u>850</u>		

Injection Lithostratigraphic Units:	Depths (ft)	Injection or Confining Units	Tops	Completion/Operation Details:
Adjacent Unit: Litho. Struc. Por.		<u>uv</u>	<u>13603</u>	Drilled TD <u>14611</u> PBSD _____
Confining Unit: Litho. Struc. Por.		<u>DV</u>	<u>13761</u>	NEW TD _____ NEW PBSD _____
Proposed Inj Interval TOP:				NEW Open Hole <input type="radio"/> or NEW Perfs <input type="radio"/>
Proposed Inj Interval BOTTOM:				Tubing Size <u>5 1/2</u> in. Inter Coated? _____
Confining Unit: Litho. Struc. Por.				Proposed Packer Depth <u>13740</u> ft
Adjacent Unit: Litho. Struc. Por.				Min. Packer Depth <u>13601</u> (100-ft limit)
				Proposed Max. Surface Press. <u>2785</u> psi
				Admin. Inj. Press. <u>2757</u> (0.2 psi per ft)

AOR: Hydrologic and Geologic Information

POTASH: R-111-P NA Noticed? _____ BLM Sec Ord WIPP Noticed? _____ Salt/Salado T: _____ B: _____ NW: Cliff House fm _____

USDW: Aquifer(s) Quaternary Max Depth 150 HYDRO AFFIRM STATEMENT By Qualified Person

NMOSE Basin: CARLSBAD CAPITAN REEF: thru _____ adj NA No. GW Wells in 1-Mile Radius? 10 FW Analysis? Y

Disposal Fluid: Formation Source(s) _____ Analysis? _____ On Lease Operator Only or Commercial

Disposal Interval: Inject Rate (Avg/Max BWPD): 3 SK/4 SK Protectable Waters? _____ Source: _____ System Closed or Open

HC Potential: Producing Interval? NA Formerly Producing? _____ Method: Logs/DST/P&A/Other region 2-Mi Radius Pool Map

AOR Wells: 1/2-M _____ or ONE-M RADIUS MAP/WELL LIST: Total Penetrating Wells: 0 [AOR Hor: _____ AOR SWDs: _____]

Penetrating Wells: No. Active Wells 0 No. Corrective? _____ on which well(s)? _____ Diagrams? _____

Penetrating Wells: No. P&A Wells 0 No. Corrective? _____ on which well(s)? _____ Diagrams? _____

Induced-Seismicity Risk Assess: analysis submitted historical/catalog review _____ fault-slip model probability < 10%

NOTICE: 1/2-M _____ or ONE-M : Newspaper Date 10-13-2018 Mineral Owner* _____ Surface Owner DAVID K. CICKY Date 3-18-2019

RULE 26.7(A): Identified Tracts? Affected Persons*: Marathon, Orla Peter, NOWU N. Date 3-24-2019

* new definition as of 12/28/2018 [any the mineral estate of United States or state of New Mexico; SWD operators within the notice radius]

Order Conditions: Issues: C-B-L from 500' top line in base line

Additional COAs: _____

Fault-Slip Probability Assessment for the Faulk SWD #7, Malaga Area, Eddy County New Mexico

Dr. Edmund L Frost III, Vice President—Geoscience, Matador Resources Company

In order to minimize the potential risk of induced seismicity associated with deep waste water disposal, Matador Resources Company (“Matador”) has undertaken a study to characterize the fault-slip potential for the Faulk SWD #7 in Eddy County, New Mexico. This document presents the results of an eight well model, which investigates the impact of waste water injection at a rate of 40,000 bbl/day until 2049 (Figure 1a, Table 1). This study utilizes a mix of public and proprietary data in conjunction with the Stanford Center for Induced and Triggered Seismicity’s (SCITS) Fault Slip Potential (FSP; Walsh et al., 2017) code (table 2).

Fault orientations (strike, dip) were obtained from 118 basement faults mapped in a proprietary 88 mi² prestack depth migrated (PSDM) 3D seismic volume. Fault orientations were calculated at multiple points along the trace of each fault in the injection interval from Matador’s structural framework model. These points were exported directly from Petrel into the FSP program. Stress data was derived from borehole image log data in Matador’s Black River #1 SWD, where the maximum horizontal stress (SHmax) orientation was observed as N42°E. This orientation agrees with published regional stress orientations for Southern Eddy County of N35°E by Lund Snee and Zoback (2018). Horizontal stress magnitudes were not modeled explicitly by Matador, instead the published A_0 value of 0.52 (Lund Snee and Zoback 2018; Table 2) for southern Eddy County, New Mexico was used, which implies a pure normal faulting environment.

The impact of high-rate injection in the eight-well case can be seen as a modest regional increase in pore pressure with time (Figure 1b). At the Faulk SWD #7 the model predicts a reservoir pressure increase of 265 psi by year 2049. At the modelled depth of 13,500 ft, this translates to a pore pressure gradient increase of 0.019 psi/ft. Results of the geomechanical modeling show that all faults have a “distance to failure” of greater than 750 psi; meaning that aquifer pore pressure would need to be increased by greater than 750 psi to potentially induce failure. The results of the model case presented here are well below this limit. Based on the simulation run by this study, the overall probability of fault slip is less than 10% well into the future (2049), even with multiple high-volume injectors spaced roughly one mile apart. However, caution still needs to be exercised to avoid injection near unstable features. In order to minimize risk, Matador screens all of its SWD locations, including the Faulk SWD #7, against its 3D seismic to avoid injection near faults.

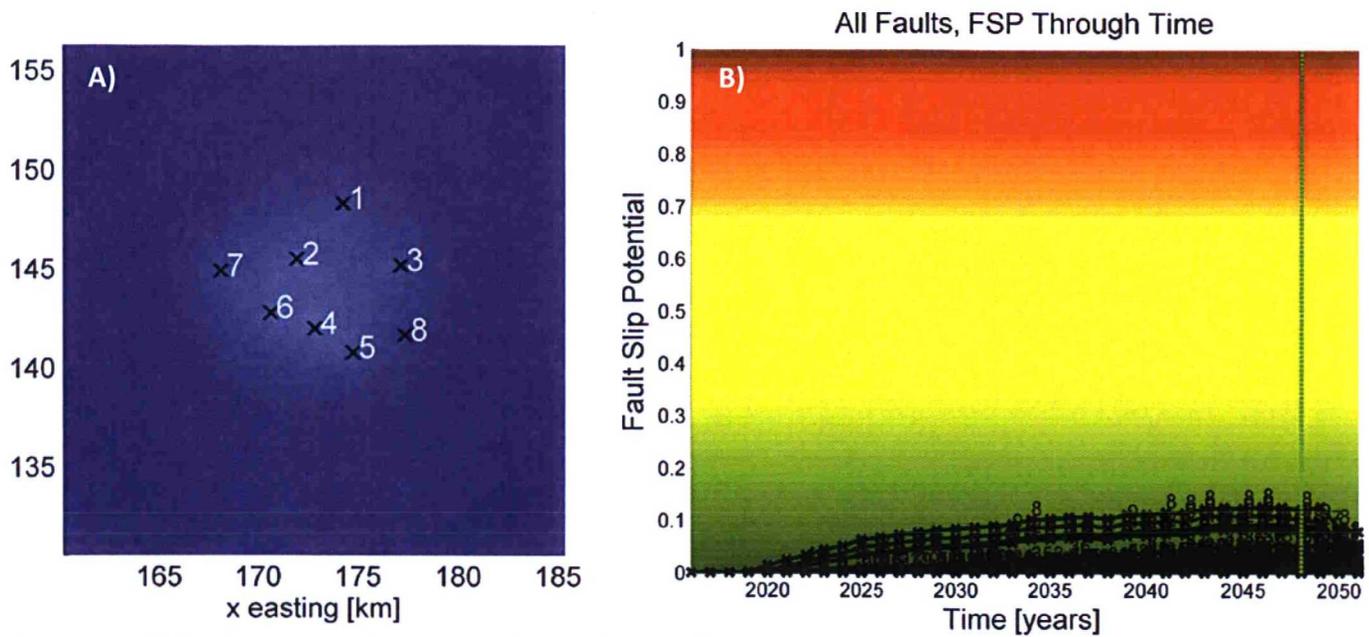


Figure 1: A) Modeled reservoir pressure for the five-well case at year 2048. A maximum pressure of 265 psi is observed at Faulk SWD #7. B) Fault slip potential (FSP) for the eight-well case. On all faults FSP remains below 15%. The green dashed line marks year 2048, the black lines and numbers denote the slip probability of individual faults.

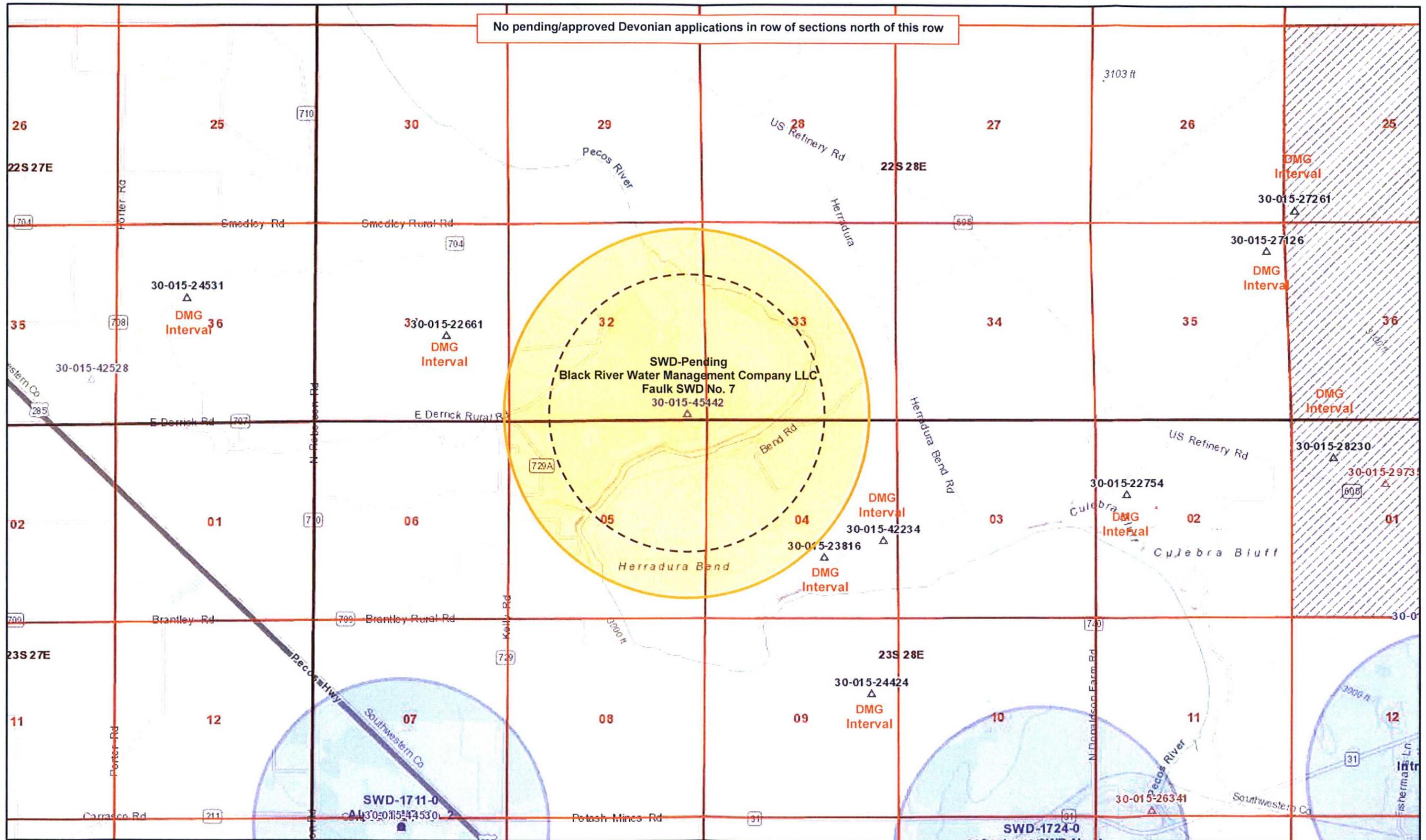
#	Well Name	Modeled Volume (bbl/d)	Start	End
1	Faulk SWD #7	40,000	2019	2049
2	Alpha SWD #2	40,000	2019	2049
3	Striker 1 SWD #1	40,000	2019	2049
4	White River SWD #1	40,000	2019	2049
5	Onsurez SWD #1	40,000	2019	2049
7	Rose SWD #1	40,000	2019	2049
8	Layla 27 SWD #1	40,000	2016	2046

Table 1: Well Data for FSP Modeling. Well numbers correspond to wells in Figure 1.

Parameter	Input Value	Variability (+/-)	Data Source
Vertical Stress Gradient	1.05 psi/ft	0.05 psi/ft	Pilot Hole
Shmax	N 42 E	5°	Pilot Hole
Fault Strike	variable	5°	3D Seismic
Fault Dip	variable	15°	3D Seismic
Reference Depth	13500 ft	na	Pilot Hole, 3D Seismic, Regional Mapping
Initial Reservoir Pressure Gradient	0.43 psi/ft	0.03 psi/ft	Pilot Hole
A Phi Parameter	0.52	0.03	Lund Snee and Zoback 2018
Reference Friction Coefficient	0.6	0.01	Standard Value
Aquifer Thickness	1000 ft	200	Pilot Hole, Regional Mapping
Porosity	6%	2%	Pilot Hole
Permeability	150 mD	100 mD	Pilot Hole, Step-Rate Tests
Fluid Density	1000 kg/m ³	50 kg/m ³	Assumed value
Dynamic Viscosity	0.0004 Pa. S	0.0001 Pa. S	Calculated value corrected for reservoir temperature

Table 2: Model Inputs, Variance, and Source.

Pending Application for High-Volume Devonian Disposal Well
C-108 Application for the Faulk SWD No. 7 – Black River Water Management Company, LLC



Goetze, Phillip, EMNRD

From: Adam Rankin <AGRankin@hollandhart.com>
Sent: Saturday, March 2, 2019 9:41 PM
To: Goetze, Phillip, EMNRD
Subject: [EXT] Black River Faulk SWD 7 - white paper
Attachments: FaulkSWD7_FSP.PDF

Phil,

I am going to through my emails this month and do not see that I forwarded this white paper/analysis to you for your review. My understanding is that Marathon has dropped its protest of this well and that it may proceed administratively. Please let me know if you have any questions or require anything more.

Very best,
Adam

Adam G. Rankin

Holland & Hart LLP
110 North Guadalupe Suite 1
P.O. Box 2208
Santa Fe, NM 87504
Office: (505) 988-4421
Direct: (505) 954-7294
Cell: (505) 570-0377
Fax (505) 983-6043
E-mail: agrarkin@hollandhart.com
[Download vCard](#)
[Web Bio](#)

HOLLAND & HART 

CONFIDENTIALITY NOTICE: This message is confidential and may be privileged. If you believe that this email has been sent to you in error, please reply to the sender that you received the message in error; then please delete this e-mail. Thank you.

Goetze, Phillip, EMNRD

From: Gorman, Jessica (MRO) <jgorman1@marathonoil.com>
Sent: Monday, January 21, 2019 9:50 AM
To: McMillan, Michael, EMNRD; lara.thompson@swca.com; Tara Flume; Goetze, Phillip, EMNRD; Lowe, Leonard, EMNRD; Jones, William V, EMNRD
Cc: Buening, Jon (MRO); McGowen, Matthew (MRO); Wilty, Roy H. (MRO); Angel, Robert E. (MRO); Domangue, Eric (MRO)
Subject: [EXT] RE: Notification of Protest for Application to Inject -Faulk SWD Well No. 1-Marathon

Mr. McMillan,

Marathon Oil will like to withdraw our protest for the Faulk SWD #7, all of Marathon's concerns have been addressed.

Please let me know if there are any questions.

Thank you,

Respectfully,

Jessica Gorman



Marathon Oil

Advanced Land Specialist – Permian

Telephone: 713-296-3024

5555 San Felipe St.

Houston, Texas 77056

From: McMillan, Michael, EMNRD <Michael.McMillan@state.nm.us>
Sent: Wednesday, November 14, 2018 10:14 AM
To: lara.thompson@swca.com
Cc: Goetze, Phillip, EMNRD <Phillip.Goetze@state.nm.us>; Lowe, Leonard, EMNRD <Leonard.Lowe@state.nm.us>; Jones, William V, EMNRD <WilliamV.Jones@state.nm.us>; Gorman, Jessica (MRO) <jgorman1@marathonoil.com>
Subject: [External] Notification of Protest for Application to Inject -Faulk SWD Well No. 1-Marathon

Beware of links/attachments.

RE: Faulk SWD Well No. 1 (API 30-015-Pending; Admin. Appl. pMAM1831831677) Unit P; Sec 32, T22S, R28E, NMPM, Eddy County

Ms. Thompson:

OCD was notified by Marathon Oil Permian LLC that they are protesting this application. This party is identified as an affected person for the location being considered for the application. You are being notified that if Black Water River Management Company, LLC wishes for this application to be considered, they must either go to hearing or may be reviewed administratively if the protest is withdrawn as a result of a negotiated resolution with this party. The application will be retained pending resolution of the protest. Please continue to provide OCD with information regarding the standing of this application. Please me call with any questions on this matter.

Contact Information:

Ms. Jessica Gorman
Advanced Land Specialist - Permian
Marathon Oil Permian LLC
5555 San Felipe Street
Houston, Tx 77056
713-2963-3024 (phone)

e-mail: jgorman1@marathonoil.com

Michael McMillan
1220 South St. Francis
Santa Fe, New Mexico
505-476-3448
Michael.mcmillan@state.nm.us

McMillan, Michael, EMNRD

From: McMillan, Michael, EMNRD
Sent: Wednesday, November 14, 2018 9:14 AM
To: lara.thompson@swca.com
Cc: Goetze, Phillip, EMNRD; Lowe, Leonard, EMNRD; Jones, William V, EMNRD; Gorman, Jessica (MRO)
Subject: Notification of Protest for Application to Inject -Faulk SWD Well No. 1-Marathon
Attachments: BlackWaterManagement Faulk#7 Marathon.pdf

RE: Faulk SWD Well No. 1 (API 30-015-Pending; Admin. Appl. pMAM1831831677) Unit P; Sec 32, T22S, R28E, NMPM, Eddy County

Ms. Thompson:

OCD was notified by Marathon Oil Permian LLC that they are protesting this application. This party is identified as an affected person for the location being considered for the application. You are being notified that if Black Water River Management Company, LLC wishes for this application to be considered, they must either go to hearing or may be reviewed administratively if the protest is withdrawn as a result of a negotiated resolution with this party. The application will be retained pending resolution of the protest. Please continue to provide OCD with information regarding the standing of this application. Please me call with any questions on this matter.

Contact Information:

Ms. Jessica Gorman
Advanced Land Specialist - Permian
Marathon Oil Permian LLC
5555 San Felipe Street
Houston, Tx 77056
713-2963-3024 (phone)

e-mail: jgorman1@marathonoil.com

Michael McMillan
1220 South St. Francis
Santa Fe, New Mexico
505-476-3448
Michael.mcmillan@state.nm.us

McMillan, Michael, EMNRD

From: Gorman, Jessica (MRO) <jgorman1@marathonoil.com>
Sent: Friday, October 26, 2018 7:57 AM
To: McMillan, Michael, EMNRD; Jones, William V, EMNRD; Goetze, Phillip, EMNRD; Lowe, Leonard, EMNRD; Tara Flume
Cc: Brown, Matthew D. (MRO); McGowen, Matthew (MRO); Jennifer L. Bradfute; Angel, Robert E. (MRO); Wilty, Roy H. (MRO); Domangue, Eric (MRO)
Subject: [EXT] Notification of Protest Application to Inject - Faulk SWD #7

Good Morning Mr. McMillan,

Happy Friday!

Marathon Oil Permian LLC has received an Application to Inject from Black River Water Management Company, LLC for their SWD called Faulk SWD #7, located in 32-22S-28E in Eddy County. (No API number assigned) Marathon would like to protest this application, our current records show that the proposed injection zone for the well may impact its correlative rights.

Please let me know if you need any additional information.

Respectfully,

Jessica Gorman



Advanced Land Specialist – Permian
Telephone: 713-296-3024
5555 San Felipe St.
Houston, Texas 77056

**STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
APPLICATION FOR AUTHORIZATION TO INJECT**

Prepared for

Black River Water Management Company, LLC
5400 LBJ Freeway
Dallas, Texas 75240

Attn. Tara Flume
Senior Midstream Council
(972) 629-2129
tflume@sanmateomidstream.com

Prepared by

SWCA Environmental Consultants
5647 Jefferson Street NE
Albuquerque, New Mexico 87109
(505) 254-1115
www.swca.com

October 2018

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.

SECTION III

Well Data

A (1)

Lease Name: Faulk SWD

Well Name and Number: Faulk SWD #7

Well Location: Sec. 32-T22S-R28E, 161' FSL & 515' FEL, Eddy County, New Mexico

A (2)

Casing Size	Setting Depth	Sx of Cement	Hole Size	Cement Top	Method Determined
20"	550'	1,100	26"	Surface	Circulate
16"	2600'	1,400	18-1/8"	Surface	Circulate
10-3/4"	10,400'	3,800	14-3/4"	Surface	Circulate
7-5/8"	13,762'	1,100	9-1/2"	9,900'	CBL

A (3): Tubing: 5.5", 20.0# P110, BTC, Internal Plastic Coated 0'-13,740'.

A (4): Packer: Chrome and/or nickel-coated packer

B (1): Injection formation: Devonian (estimated to be approximately 1,000' thick)

B (2): Injection interval: 13,761' to 14,611', open hole

B (3): New well drilled for disposal

B (4): Depths of any other perforated intervals, sacks of cement or bridge plugs used to seal off such perforations: N/A

B (5):

- Next higher oil or gas zone in the area of the well: Morrow 11,887' to 12,531'
- Next lower oil or gas zone in the area of the well: None

WELLBORE SCHEMATIC

WELL: Faulk SWD #7		PROSPECT: Devonian SWD				
GL ELEV : 3026' RKB ELEV : 3055'		SURFACE LOCATION: 161' FSL & 515' FEL Sec. 32, TWP 22-S, RGE 28-E Eddy County, NM				
Formation Tops (TVD)		CASING DIAGRAM	Depth	Hole	Casing & Cement Details 30" Conductor @ ± 120'	
			550'	26"	Surf. Csg Cmt: (150% Excess) Top of Cement: Circulate to surface 20", 94#, K-55, BTC	
Lamar @ 2392'			2600'	18,125"	1st Int. Csg Cmt: (120% Excess) Lead: Circulate to surface Tail: 20% critical 16", 84#, N-80HC, BTC	
Bell Canyon @ 2567'			10,400'	14,75"	2nd Int. Csg Cmt: (50% Excess) Top of Cement: Surface 10-3/4", 47.0#, P110HC	
Cherry Canyon @ 3317' Brushy Canyon @ 4463' Bone Spring Lime @ 5974' 1st Bone Spring Sand @ 6817' 2nd Bone Spring Carb @ 7292' 2nd Bone Spring Sand @ 7804' 3rd Bone Spring Carb @ 8122' 3rd Bone Spring Sand @ 9014' Wolfcamp @ 9363' Wolfcamp B @ 9698'			13,762'		Prod Csg Cmt: (35% Excess) Top of Cement: 9,900' 7-5/8", 29.7#, P110 HC, BTC, 0-9400' 7-5/8", 33.7#, P110 EC, BTC, 9400'-13,762'	
Wolfcamp D @ 10611' Strawn @ 11063' Atoka @ 11216' Morrow @ 11887' Barnett @ 12531' Miss Lime @ 13165' Woodford Shale @ 13603' Devonian Carb @ 13761'			14,611'		9.5"	Tubing: 5-1/2" 20.0#, P110IC, BTC, Internal Plastic Coated 0' - 13,740' Chrome and/or Nickel Coated Packer set @ 13,740'
Montoya @ 14761'			TD @ 14,611' TVD		6.5"	

Prepared By: ACL - 10/24/18

INJECTION WELL DATA SHEET

OPERATOR: Black River Water Management Company, LLC

WELL NAME & NUMBER: Faulk SWD #007

WELL LOCATION:	<u>161' FSL & 515' FEL</u>	<u>P</u>	<u>32</u>	<u>T</u>
	FOOTAGE LOCATION	UNIT LETTER	SECTION	T

WELLBORE SCHEMATIC

WELL CONSTRUCTION
Surface Casing

Hole Size: 26" Ca

Cemented with: 1100 sx. *or*

Top of Cement: 0' Me

Intermediate Casing

Hole Size: 18.125" Ca

Cemented with: 1400 sx. *or*

Top of Cement: 0' Me

Intermediate Casing

Hole Size: 14.75" Ca

Cemented with: 3800 sx. *or*

Top of Cement: 0' Me

Production Casing

Hole Size: 9.5" Ca

Cemented with: 1100 sx. *or*

Top of Cement: 9,900' _____ Me

Total Depth: 13,761 _____

Injection Interv

13,761 _____ feet to

(Perforated or Open Hole; i

INJECTION WELL DATA SHEET

Tubing Size: 5-1/2" Lining Material: Internal Plastic Coated

Type of Packer: Chrome and/or Nickel coated

Packer Setting Depth: 13,740'

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

Additional Data

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

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

2. Name of the Injection Formation: Devonian formation

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

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. N/A

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

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		
⁴ Property Code		⁵ Property Name FAULK SWD			⁶ Well Number #7	
⁷ OGRID No.		⁸ Operator Name BLACK RIVER WATER MANAGEMENT COMPANY, LLC			⁹ Elevation 3026'	

¹⁰Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	32	22-S	28-E	-	161'	SOUTH	515'	EAST	EDDY

¹¹Bottom 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 40	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
-------------------------------------	-------------------------------	----------------------------------	-------------------------

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.

<p>¹⁶</p> <p>SURFACE LOCATION NEW MEXICO EAST NAD 1927 X=571552 Y=488298 LAT.: N 32.3422330 LONG.: W 104.1016532 NAD 1983 X=612734 Y=488357 LAT.: N 32.3423531 LONG.: W 104.1021506</p>		<p>¹⁷OPERATOR CERTIFICATION</p> <p>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 of 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.</p> <p><i>Andrea McArdle</i> 10/11/18 Signature Date</p> <p>Andrea McArdle Printed Name</p> <p>andrea.mcardle@swca.com E-mail Address</p>
		<p>¹⁸SURVEYOR CERTIFICATION</p> <p>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 to the best of my belief.</p> <p>08/22/2018 Date of Survey Signature and Seal of Professional Surveyor</p> <p>Michael Brown Professional Surveyor Certificate Number</p>

NMOSE Wells of Public Record within Area of Review

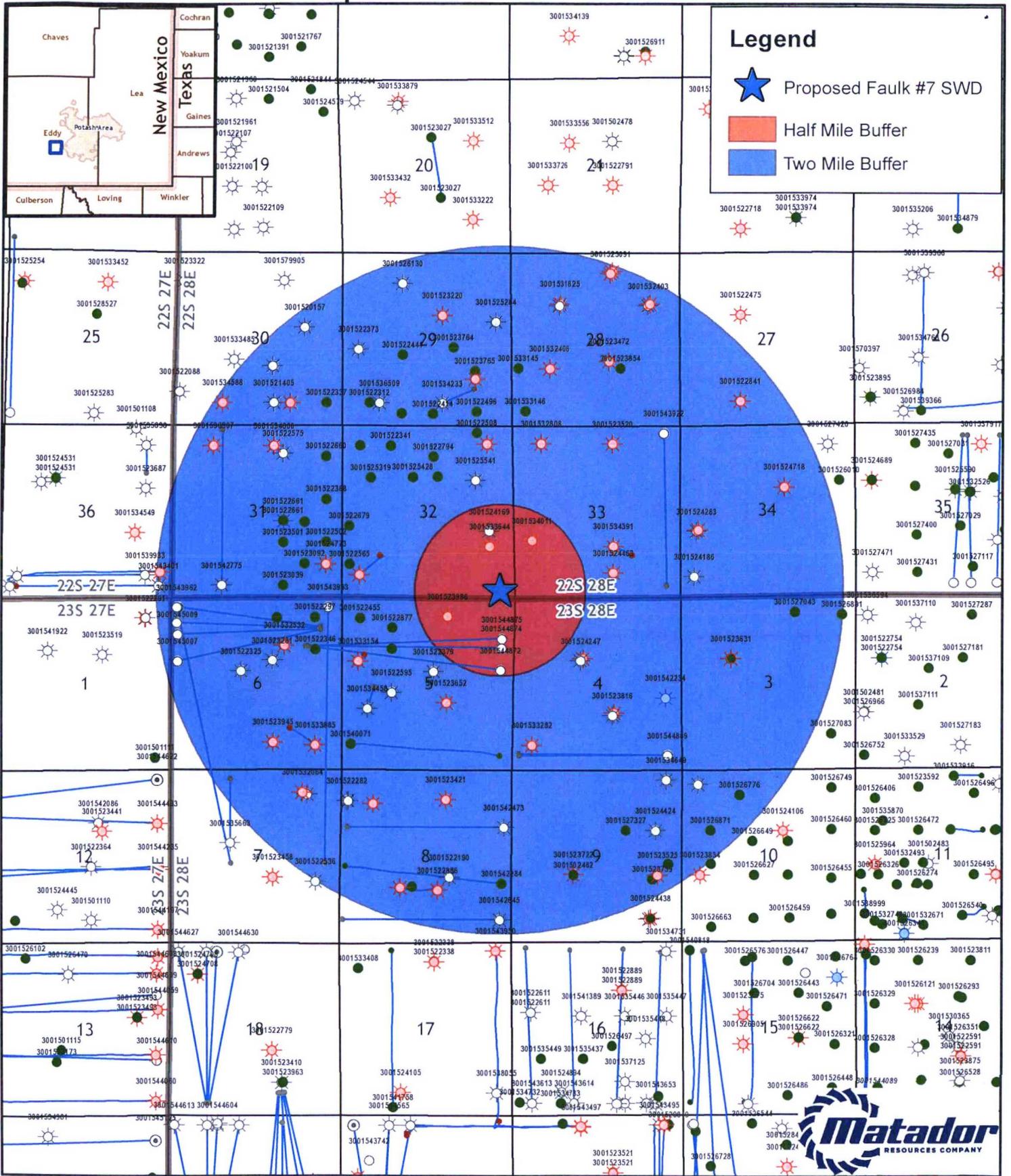
Well Locations - Large Scale	Distance from Faulk #7	Location	Well Type	Well Status	SPUD Date
GRIZZLY FEE #001	0.25 mi	sec32 T22S-R28E	gas	active	10/12/2019
KELLY 5 COM #001	0.32 mi	sec5 T23S-R28E	gas	active	10/16/19
PRE-ONGARD WELL #001	0.34 mi	sec32 T22S-R28E	oil	plugged	1/1/1900
ARTEMIS FEDERAL COM #001	0.35 mi	sec33 T22-R28E	gas	active	4/1/2000
PRE-ONGARD WELL #001	0.41 mi	sec5 T23S-R28E	gas	plugged	1/1/1900
PRE-ONGARD WELL #001	0.59 mi	sec5 T23S-R28E	gas	plugged	1/2/1900
PRE-ONGARD WELL #001	0.64 mi	sec5 T23S-R28E	gas	plugged	1/3/1900
LOVING FEDERAL COM #001	0.65 mi	sec4 T23S-R28E	gas	active	12/3/19
PRE-ONGARD WELL #001	0.65 mi	sec4 T23S-R28E	oil	cancelled APD	N/A
PRE-ONGARD WELL #006	0.66 mi	sec32 T22S-R28E	oil	cancelled APD	N/A
SCHALK FEDERAL COM 33 #001	0.7 mi	sec33 T22S-R28E	gas	plugged	N/A
BRUTUS #001	0.71 mi	sec32 T22S-R28E	gas	active	7/18/20
SWEARINGEN A COM #001	0.72 mi	sec5 T23S-R28E	gas	active	2/23/19
STATE 32 #005	0.74 mi	sec32 T22S-R28E	oil	active	12/8/19
USA 9 FEDERAL COM #003H	0.81 mi	sec32 T22S-R28E	oil	active	10/26/19
KELLY #001	0.81 mi	sec5 T23S-R28E	water storage	plugged	3/18/19
WINCHESTER FEDERAL COM #001H	0.81 mi	sec9 T20S-R28E	oil	cancelled APD	N/A
STATE 32 #004	0.82 mi	sec32 T22S-R28E	oil	active	10/26/19
ARTEMIS FEDERAL COM #002	0.82 mi	sec33 T22S-R28E	gas	active	11/1/20
CARLSBAD #001	0.85 mi	sec32 T22S-R28E	gas	active	4/25/20
ZEUS #001	0.86 mi	sec5 T23S-R28E	gas	active	1/15/20
PRE-ONGARD WELL #001	0.86 mi	sec5 T23S-R28E	oil	plugged	1/1/1900
C.R. LOPEZ C #002	0.86 mi	sec32 T22S-R28E	oil	active	1/20/19
PRE-ONGARD WELL #001	0.87 mi	sec32 T22S-R28E	oil	plugged	1/1/1900
HARROUN COM #002	0.89 mi	sec33 T22S-R28E	gas	active	7/2/2000
SWEARINGEN A COM #002C	0.9 mi	sec5 T23S-R28E	gas	cancelled APD	N/A
HARROUN A #002	0.92 mi	sec32 T22S-R28E	oil	plugged	N/A
STATE 32 #001	0.93 mi	sec32 T22S-R28E	oil	active	9/16/19
APOLLO FEE #001	0.93 mi	sec4 T23S-R28E	gas	active	3/24/20
SWEARINGEN A FEE COM #003H	0.97 mi	sec5 T23S-R28E	oil	active	6/3/2000
STATE 32 #003	0.98 mi	sec32 T22S-R28E	oil	active	9/6/1900
APOLLO FEE 23 28 4 WA #005H	0.98 mi	sec5 T23S-R28E	gas	not drilled/completed	N/A
HERRADURA FEDERAL #001	0.99 mi	sec31 T22S-R28E	oil	plugged	2/23/19
APOLLO FEE 23 28 4 WD #00	0.99 mi	sec4 T23S-R28E	gas	plugged	N/A

There are no Devonian penetrators within a mile of the proposed disposal well. The table above shows all wells of public record within the

SECTION VI

Other Wells within Area of Review

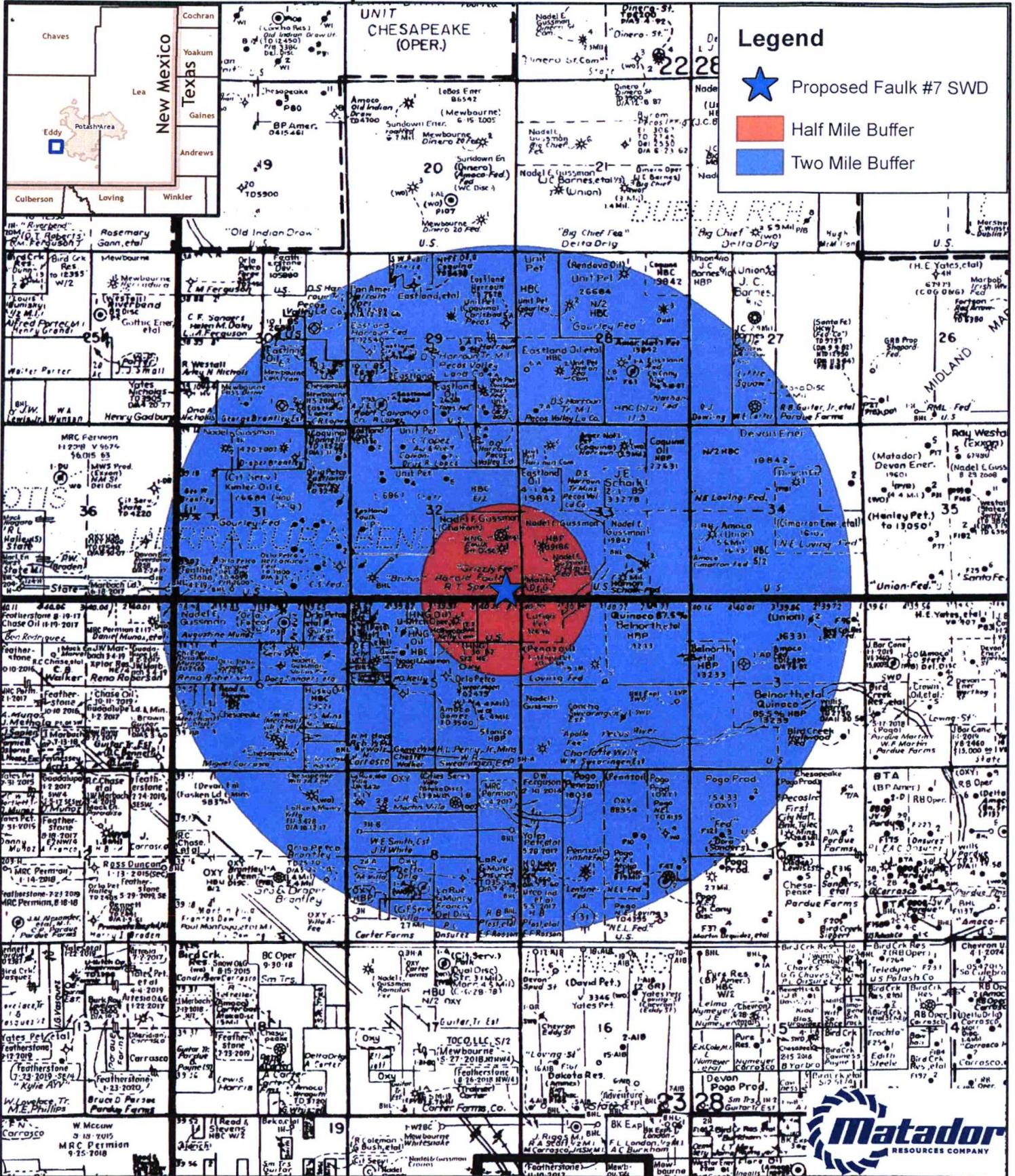
Proposed Faulk #7 SWD



Legend

- ★ Proposed Faulk #7 SWD
- Half Mile Buffer
- Two Mile Buffer

Proposed Faulk #7 SWD



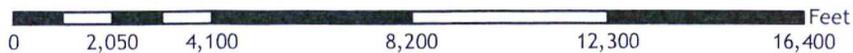
Legend

- Proposed Faulk #7 SWD
- Half Mile Buffer
- Two Mile Buffer

GIS Standard Map Disclaimer:
This cartographic product is for informational purposes and may not have been prepared for, or be suitable for, legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

1:48,000
1 inch = 4,000 feet

Southeast New Mexico

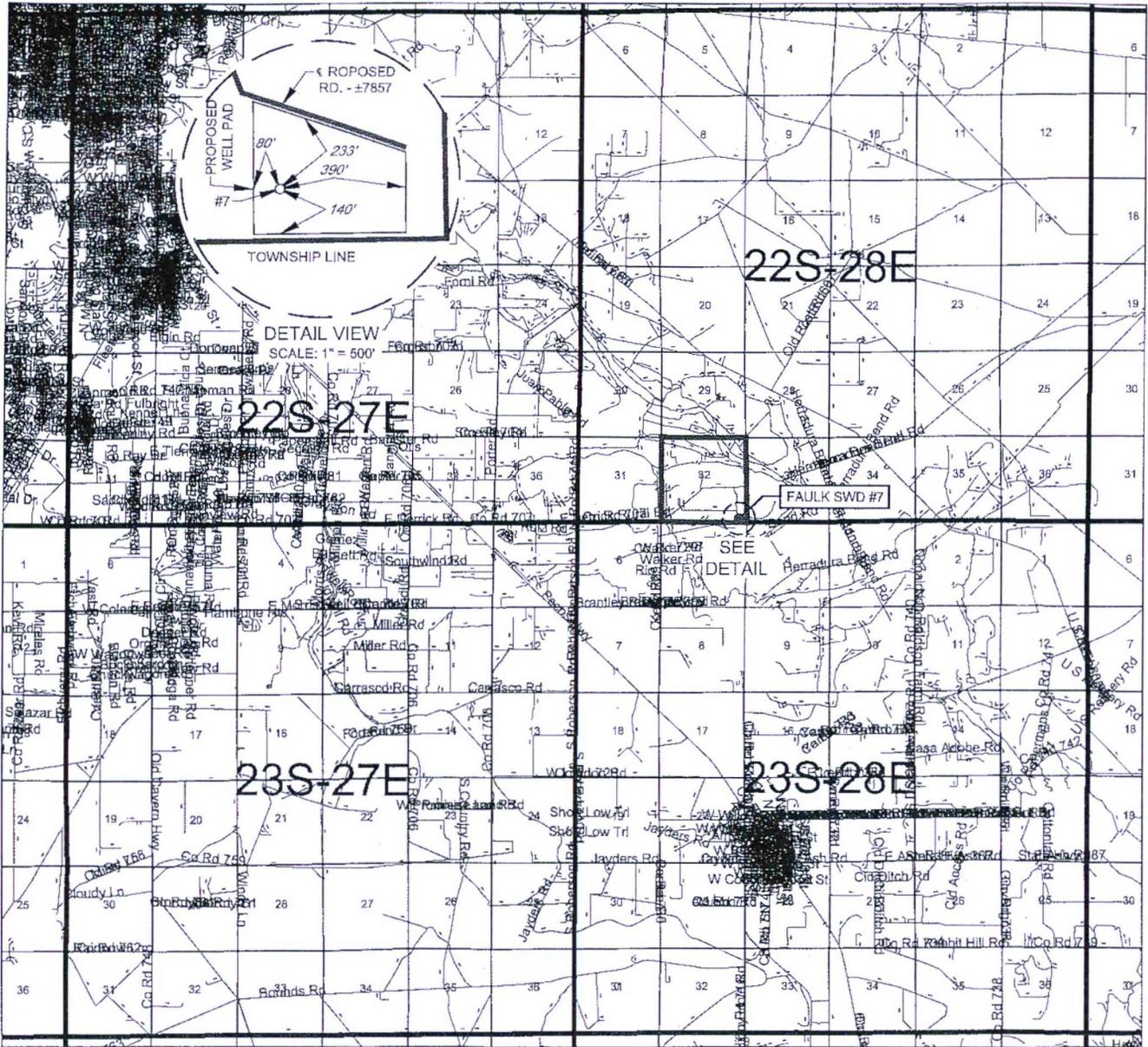


Map Prepared by: thudgins
Date: September 13, 2018
Filename: Faulk7_SWD_Notice
Coordinate System: NAD 1927 StatePlane New Mexico East FIPS 3001
Projection: Transverse Mercator; Datum: North American 1927; Units: Foot US
Sources: IHS; ESRI

SECTION V

Adjacent Wells and Leases

VICINITY MAP



LEASE NAME & WELL NO.: FAULK SWD #7

SECTION 32 TWP 22-S RGE 28-E SURVEY N.M.P.M.
 COUNTY EDDY STATE NM
 DESCRIPTION 161' FSL & 515' FEL

DISTANCE & DIRECTION
FROM INT. OF US HWY 285 & NM-31, GO EAST ON NM-31 ±0.2 MILES,
THENCE NORTH (LEFT) ON KELLY RD. ±2.0 MILES, THENCE WEST
(RIGHT) ON A PROPOSED RD. ±7857 FEET TO A POINT ±400 FEET
NORTHEAST OF THE LOCATION.

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY BLACK RIVER WATER MANAGEMENT COMPANY, LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.



1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
 TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
 2803 NORTH BIG SPRING • MIDLAND, TEXAS 79705
 TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
 WWW.TOPOGRAPHIC.COM

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

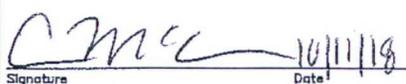
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number		² Pool Code		³ Pool Name					
⁴ Property Code		⁵ Property Name FAULK SWD		⁶ Well Number #7					
⁷ OGRID No.		⁸ Operator Name BLACK RIVER WATER MANAGEMENT COMPANY, LLC		⁹ Elevation 3026'					
¹⁰ Surface Location									
UL or lot no. P	Section 32	Township 22-S	Range 28-E	Lot Idn -	Feet from the 161'	North/South line SOUTH	Feet from the 515'	East/West line EAST	County 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 40		¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No.			

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.

<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;">SURFACE LOCATION NEW MEXICO EAST NAD 1927 X=571552 Y=488298 LAT.: N 32.3422330 LONG.: W 104.1016532 NAD 1983 X=612734 Y=488357 LAT.: N 32.3423531 LONG.: W 104.1021506</p> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>NAD27 NAD83 X=570708.17 X=611890.39 Y=489449.15 Y=488508.72</p> </div> <div style="text-align: center;"> <p>NAD27 NAD83 X=572034.41 X=613216.64 Y=489467.17 Y=489525.75</p> </div> <div style="text-align: center;"> <p>NAD27 NAD83 X=572071.28 X=613263.55 Y=488143.96 Y=488203.51</p> </div> <div style="text-align: center;"> <p>NAD27 NAD83 X=570738.20 X=611920.45 Y=488126.06 Y=488185.59</p> </div> </div> <div style="text-align: right; margin-top: 20px;"> <p>515'</p> <p>161'</p> </div>	<p>¹⁷OPERATOR CERTIFICATION</p> <p><i>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.</i></p> <p style="text-align: right;">  Signature Date: 10/11/18 </p> <p style="text-align: center;"> Andrea McArdle Printed Name </p> <p style="text-align: center;"> andrea-mcardle@swca.com E-mail Address </p> <p>¹⁸SURVEYOR CERTIFICATION</p> <p><i>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 to the best of my belief.</i></p> <div style="text-align: center; margin-top: 10px;"> <p>08/22/2018</p>  <p>DATE OF SURVEY: 08/22/2018 SIGNATURE AND SEAL OF PROFESSIONAL SURVEYOR: MICHAEL B. BROWN</p> </div> <p style="text-align: center;">Certificate Number</p>
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7004 2510 0006 5140 9246

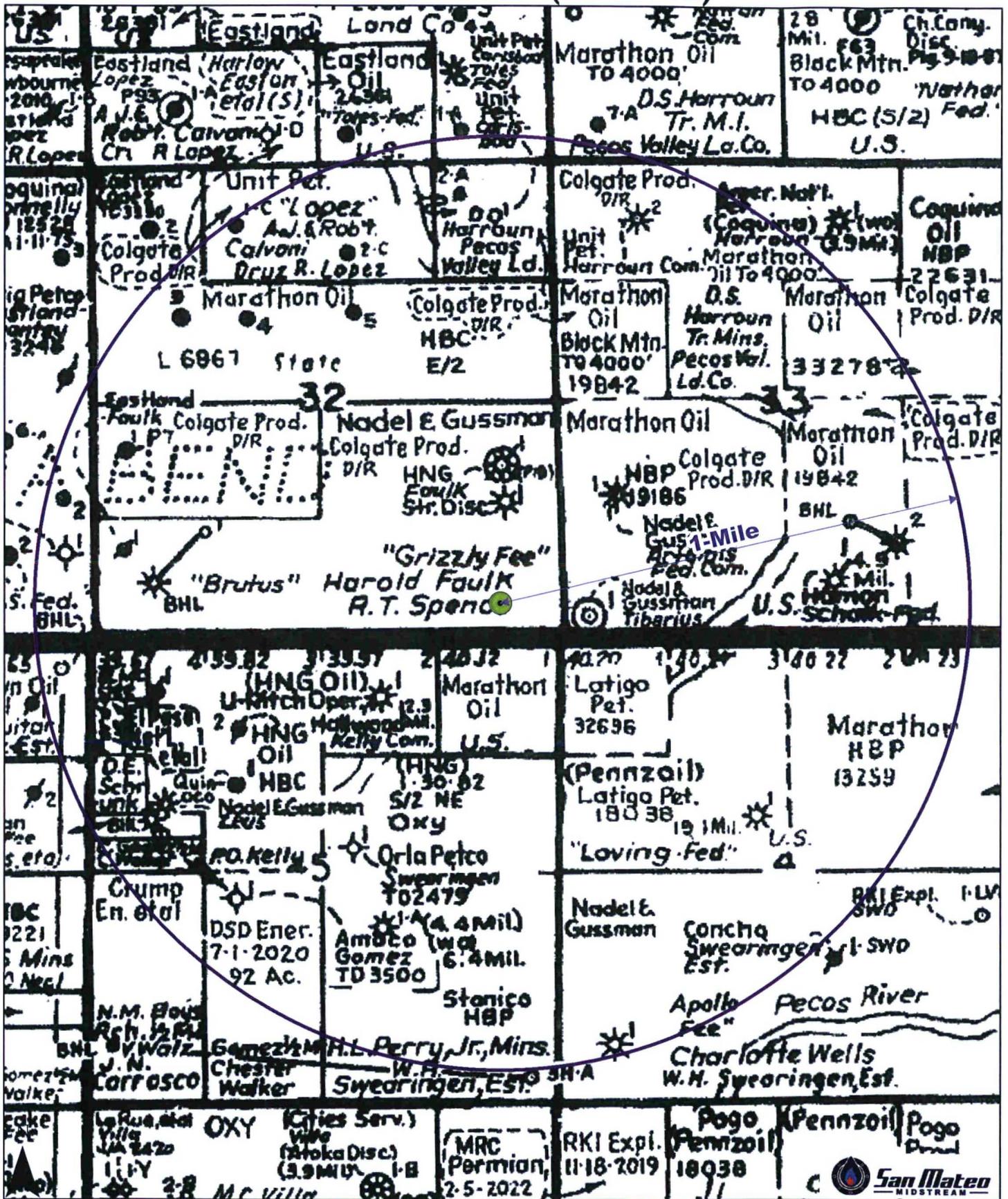
CARLSBAD, NM 88220

Postage	\$3.50
Certified Fee	\$7.50
Return Receipt Fee (Endorsement Required)	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$0.00
Total Postage & Fees	\$11.00

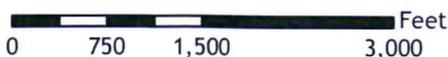
OFFICIAL USE
 CARLSBAD, NM 87701
 MAR 6 1 18 PM '09
 Postmark Date
 03/19/2019

Sent To David & Vickye Faulk
 Street, Apt. No. or PO Box No. R782 E. Derrick Rd Rural
 City, State, ZIP+4 Carlsbad NM 88220

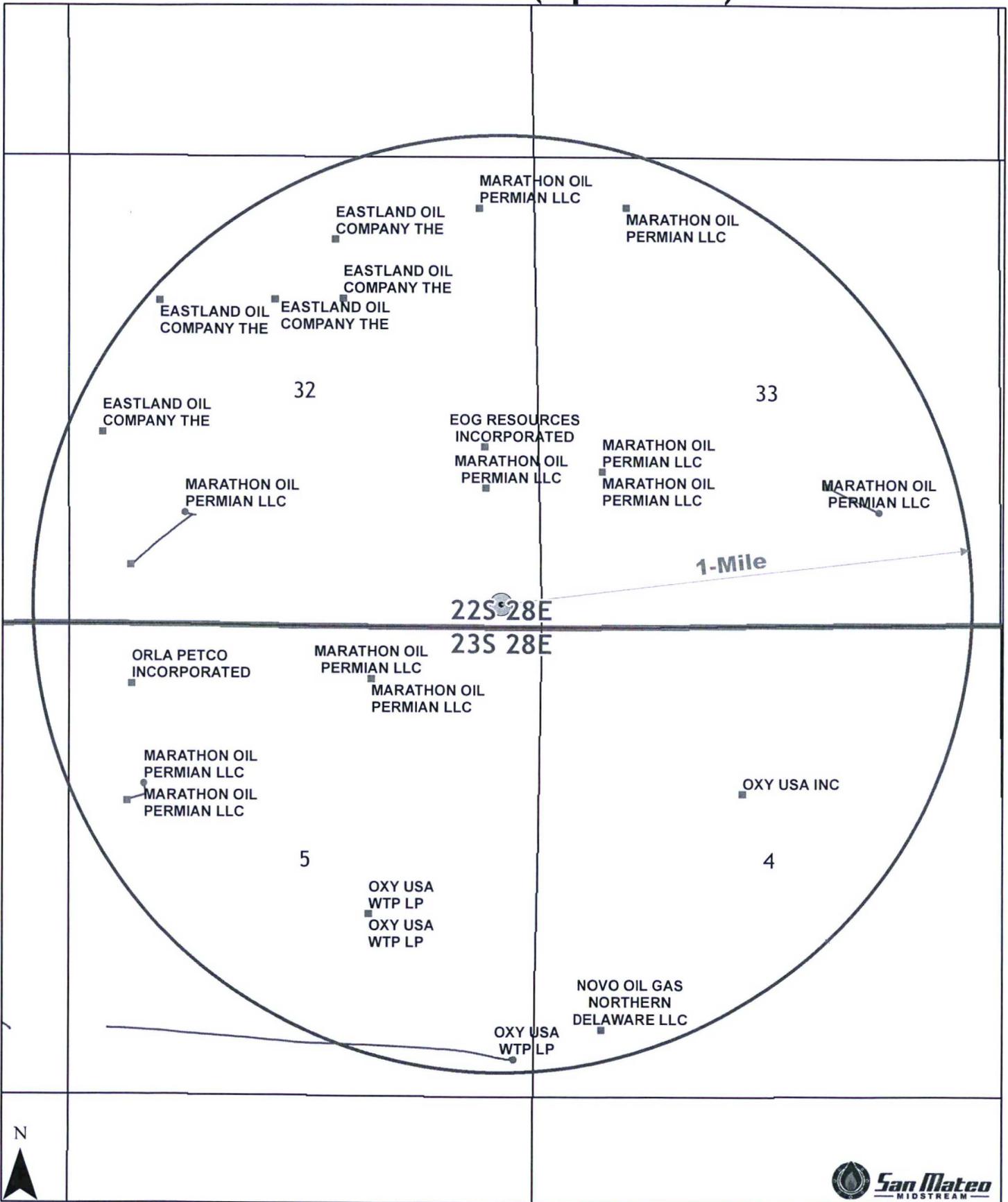
Faulk #7 SWD (Lessees)



1 inch = 1,500 feet



Faulk #7 SWD (Operators)



1 inch = 1,500 feet





New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
O=orphaned,
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 6	Q 4	Q 16	Sec	Tws	Rng	X	Y	DepthWell	DepthWater	Water Column
C_00035		CUB	ED	3	3	3	32	22S	28E	583127	3578762*	146		
C_00036		CUB	ED	3	3	2	32	22S	28E	583916	3579583*	106		
C_00212		CUB	ED	3	3	3	32	22S	28E	583127	3578762*	146	30	116
C_00212 CLW193874	O	CUB	ED	3	3	3	32	22S	28E	583127	3578762*			
C_00213		CUB	ED	1	4	1	32	22S	28E	583517	3579775*	200	35	165
C_00214		CUB	ED	2	3	3	32	22S	28E	583327	3578962*	200		
C_00236		C	ED	2	2	3	32	22S	28E	583723	3579372*	80	39	41
C_03094		C	ED	4	3	1	32	22S	28E	583317	3579567*	138	53	85
C_03184		C	ED	2	3	3	32	22S	28E	583327	3578962*	157	30	127

Average Depth to Water: **37 feet**
 Minimum Depth: **30 feet**
 Maximum Depth: **53 feet**

Record Count: 9

Basin/County Search:

County: Eddy

PLSS Search:

Section(s): 32 **Township:** 22S **Range:** 28E

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

10/26/18 11:45 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

SECTION VII

Proposed Operations



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Q 32	Tw	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
C_00236		C	ED	2	2	3	32	22S	28E	583723	3579372*	1079	80	39	41
C_00036		CUB	ED	3	3	2	32	22S	28E	583916	3579583*	1084	106		
C_00214		CUB	ED	2	3	3	32	22S	28E	583327	3578962*	1290	200		
C_03184		C	ED	2	3	3	32	22S	28E	583327	3578962*	1290	157	30	127
C_00035		CUB	ED	3	3	3	32	22S	28E	583127	3578762*	1471	146		
C_00212		CUB	ED	3	3	3	32	22S	28E	583127	3578762*	1471	146	30	116
C_00212 CLW193874	O	CUB	ED	3	3	3	32	22S	28E	583127	3578762*	1471			
C_00289		CUB	ED	1	1	1	05	23S	28E	583128	3578563*	1481		33	
C_00213		CUB	ED	1	4	1	32	22S	28E	583517	3579775*	1496	200	35	165
C_03094		C	ED	4	3	1	32	22S	28E	583317	3579567*	1524	138	53	85

Average Depth to Water: **36 feet**
 Minimum Depth: **30 feet**
 Maximum Depth: **53 feet**

Record Count: 10

UTMNAD83 Radius Search (in meters):

Easting (X): 584598.51

Northing (Y): 3578740.43

Radius: 1609.1

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

4/15/19 8:45 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

VII.(1) Proposed average and maximum daily rate and volume of fluids to be injected:

- a. Average: 35,000 BWPD
- b. Maximum: 45,000 BWPD

VII.(2) Open System

VII.(3) Proposed average and maximum injection pressure:

- a. Average: 2300 psi;
- b. Maximum: 2,785 psi

VII.(4) Produced water, primarily from Bone Springs and Wolfcamp wells. No known incompatibility exists with injected water into the Devonian. Water is compatible with Devonian formation and is used as a disposal interval throughout the Delaware Basin for Wolfcamp and Bone Springs produced water.

VII.(5) The closest Devonian producer (API 30-D15-28991) is approximately 3.3 miles away It is P&A.

SECTION VIII- IX

Geologic Data, Stimulation Program Logging and Testing

Section VIII

- The proposed disposal interval is in the Devonian formation, which is estimated to be approximately 1,000 feet thick. There are no fresh water zones underlying the proposed injection zone. See NMOSE's Water Column/Average Depth to Water report on the following page for overlying water zone data.
- Devonian is an impermeable Shale at the very top (Woodford Shale) followed by permeable dolomite and Lime.
- Mud logs and electric logs will be used to confirm the estimated depths of the Woodford and Devonian Dolomite along with other significant tops.
- A gamma ray log will be run from second intermediate to TD.

<i>Estimated Pre-Drill Formation Tops</i>	
Lamar	2392'
Bell Canyon	2567'
Cherry Canyon	3317'
Brushy Canyon	4463'
Bone Spring Lime	5974'
1 st Bone Spring Sand	6817'
2 nd Bone Spring Carb	7292'
2 nd Bone Spring Sand	7804'
3 rd Bone Spring Carb	8122'
3 rd Bone Spring Sand	9014'
Wolfcamp	9363'
Wolfcamp B	9698'
Wolfcamp D	10611'
Strawn	11063'
Atoka	11216'
Morrow	11887'
Barnett	12531'
Miss Lime	13165'
Woodford Shale	13603'
Devonian Carb	13761'
Montoya	14761'

Section IX

- Well will be stimulated with acid

SECTION XI

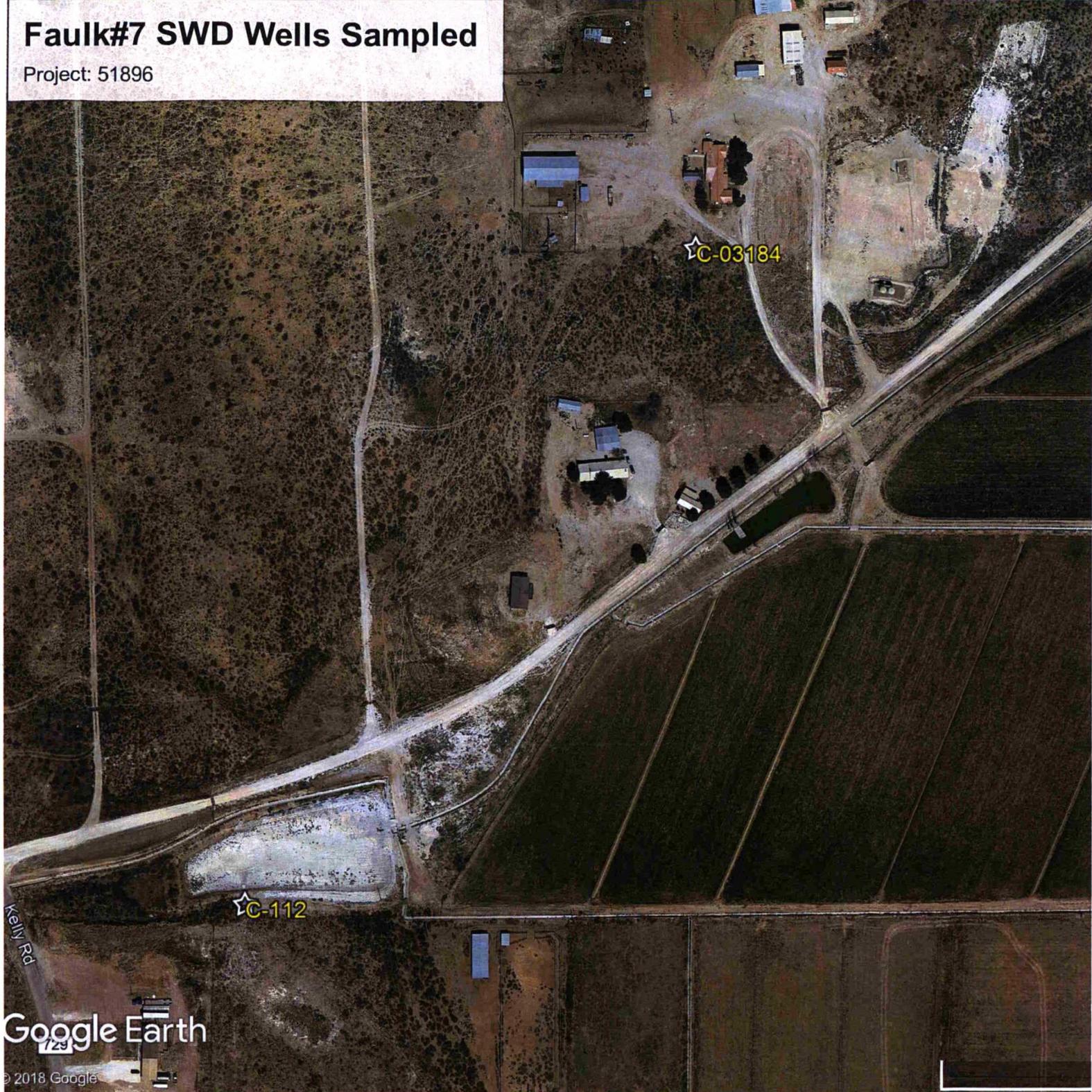
Location and Chemical Analysis of Fresh Water Well

Proposed Faulk #7 SWD Well

Status	POD Status	Owner-Last Name	Owner-First Name	Depth of Well	Depth to Water	Distance to Center	UTM Easting	UTM Northing
LIC	ACT	KELLY MRS P O	null	null	33	1374.379	583128	3578563
DCL	null	FAULK	HAROLD	200	null	1186.131	583327	3578962
PMT	PEN	CITY OF CARLSBAD	null	null	null	1457.973	584510	3580194
PMT	null	KELLY	P O	null	null	1098.174	583832	3577858
PMT	ACT	FAULK	DAVID A.	138	53	1438.612	583317	3579567
PMT	ACT	FAULK	DAVID	157	30	1186.131	583327	3578962
EXP	PEN	BRANTLEY	DRAPER	null	null	961.288	583926.6	3577958.3
EXP	PEN	PARKER	JUDY	250	null	1568.515	583156.2	3577913.1
LIC	ACT	FAULK	HAROLD	146	30	1364.674	583127	3578762
DEN	null	SWEARINGEN	W H	null	null	1277.99	585345	3577785
DEN	null	SWEARINGEN	W H	null	null	758.899	584543	3577979
DEN	null	SWEARINGEN	W H	null	null	962.474	584542	3577775
CAN	ACT	SPENCE	R T	146	null	1364.674	583127	3578762
CAN	ACT	SPENCE	R T	106	null	1023.857	583916	3579583
LIC	ACT	FAULK	HAROLD	200	35	1424.336	583517	3579775
PMT	ACT	FAULK	DAVID A.	80	39	997.394	583723	3579372
PMT	PEN	CITY OF CARLSBAD	null	null	null	1236.027	585119	3579801

Faulk#7 SWD Wells Sampled

Project: 51896



Kelly Rd

Google Earth

© 2018 Google



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 03, 2018

Lara Thompson
SWCA
5647 Jefferson
Albuquerque, NM 87109
TEL: (505) 254-1115
FAX

RE: Faulk 7 SWD Permitting

OrderNo.: 1809749

Dear Lara Thompson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 9/13/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: SWCA

Client Sample ID: C-112-01-03

Project: Faulk 7 SWD Permitting

Collection Date: 9/12/2018 9:35:00 AM

Lab ID: 1809749-001

Matrix: AQUEOUS

Received Date: 9/13/2018 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MRA
Fluoride	ND	2.0		mg/L	20	9/13/2018 4:05:41 PM
Chloride	2400	100		mg/L	200	9/25/2018 11:13:31 PM
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	9/13/2018 4:05:41 PM
Bromide	ND	2.0		mg/L	20	9/13/2018 4:05:41 PM
Nitrogen, Nitrate (As N)	7.5	2.0		mg/L	20	9/13/2018 4:05:41 PM
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	9/13/2018 4:05:41 PM
Sulfate	2300	100		mg/L	200	9/25/2018 11:13:31 PM
EPA METHOD 200.7: DISSOLVED METALS						Analyst: ELS
Calcium	840	10		mg/L	10	9/17/2018 5:28:03 PM
Magnesium	380	10		mg/L	10	9/17/2018 5:28:03 PM
Potassium	6.1	1.0		mg/L	1	9/17/2018 5:25:43 PM
Sodium	1300	20		mg/L	20	9/18/2018 2:57:59 PM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: JRR
Conductivity	8300	5.0		µmhos/c	1	9/18/2018 2:44:07 PM
SM2320B: ALKALINITY						Analyst: JRR
Bicarbonate (As CaCO ₃)	243.9	20.00		mg/L Ca	1	9/18/2018 2:44:07 PM
Carbonate (As CaCO ₃)	ND	2.000		mg/L Ca	1	9/18/2018 2:44:07 PM
Total Alkalinity (as CaCO ₃)	243.9	20.00		mg/L Ca	1	9/18/2018 2:44:07 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	7440	200	*D	mg/L	1	9/20/2018 6:07:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	Page 1 of 8
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** SWCA**Client Sample ID:** C-03184-01-03**Project:** Faulk 7 SWD Permitting**Collection Date:** 9/12/2018 9:00:00 AM**Lab ID:** 1809749-002**Matrix:** AQUEOUS**Received Date:** 9/13/2018 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MRA
Fluoride	ND	0.10		mg/L	1	9/13/2018 4:18:31 PM
Chloride	1600	100		mg/L	200	9/25/2018 11:25:55 PM
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	9/13/2018 4:31:23 PM
Bromide	ND	2.0		mg/L	20	9/13/2018 4:31:23 PM
Nitrogen, Nitrate (As N)	5.7	2.0		mg/L	20	9/13/2018 4:31:23 PM
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	9/13/2018 4:31:23 PM
Sulfate	2100	100		mg/L	200	9/25/2018 11:25:55 PM
EPA METHOD 200.7: DISSOLVED METALS						Analyst: ELS
Calcium	820	10		mg/L	10	9/17/2018 5:32:27 PM
Magnesium	250	10		mg/L	10	9/17/2018 5:32:27 PM
Potassium	5.8	1.0		mg/L	1	9/17/2018 5:30:09 PM
Sodium	890	10		mg/L	10	9/17/2018 5:32:27 PM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: JRR
Conductivity	6600	5.0		µmhos/c	1	9/18/2018 2:58:56 PM
SM2320B: ALKALINITY						Analyst: JRR
Bicarbonate (As CaCO ₃)	204.6	20.00		mg/L Ca	1	9/18/2018 2:58:56 PM
Carbonate (As CaCO ₃)	ND	2.000		mg/L Ca	1	9/18/2018 2:58:56 PM
Total Alkalinity (as CaCO ₃)	204.6	20.00		mg/L Ca	1	9/18/2018 2:58:56 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	6160	100	*D	mg/L	1	9/20/2018 6:07:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	Page 2 of 8
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	PQL Practical Quantitative Limit	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809749

03-Oct-18

Client: SWCA
Project: Faulk 7 SWD Permitting

Sample ID	MB-A	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	A54193	RunNo:	54193					
Prep Date:		Analysis Date:	9/17/2018	SeqNo:	1792020	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID	LLLCS-A	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	A54193	RunNo:	54193					
Prep Date:		Analysis Date:	9/17/2018	SeqNo:	1792022	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	104	50	150			
Magnesium	ND	1.0	0.5000	0	101	50	150			
Potassium	ND	1.0	0.5000	0	96.6	50	150			
Sodium	ND	1.0	0.5000	0	130	50	150			

Sample ID	LCS-A	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	A54193	RunNo:	54193					
Prep Date:		Analysis Date:	9/17/2018	SeqNo:	1792024	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49	1.0	50.00	0	98.8	85	115			
Magnesium	50	1.0	50.00	0	99.3	85	115			
Potassium	49	1.0	50.00	0	98.2	85	115			
Sodium	50	1.0	50.00	0	100	85	115			

Sample ID	MB-B	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	B54217	RunNo:	54217					
Prep Date:		Analysis Date:	9/18/2018	SeqNo:	1793942	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	ND	1.0								

Sample ID	LLLCS-B	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	B54217	RunNo:	54217					
Prep Date:		Analysis Date:	9/18/2018	SeqNo:	1793946	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	ND	1.0	0.5000	0	85.1	50	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809749

03-Oct-18

Client: SWCA
Project: Faulk 7 SWD Permitting

Sample ID	LCS-B	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	B54217	RunNo:	54217					
Prep Date:		Analysis Date:	9/18/2018	SeqNo:	1793947	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	48	1.0	50.00	0	96.0	85	115			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809749

03-Oct-18

Client: SWCA
Project: Faulk 7 SWD Permitting

Sample ID MB	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R54173		RunNo: 54173							
Prep Date:	Analysis Date: 9/13/2018		SeqNo: 1791002		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								

Sample ID LCS	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R54173		RunNo: 54173							
Prep Date:	Analysis Date: 9/13/2018		SeqNo: 1791003		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.56	0.10	0.5000	0	112	90	110			S
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	101	90	110			
Bromide	2.5	0.10	2.500	0	100	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	105	90	110			
Phosphorus, Orthophosphate (As P)	5.1	0.50	5.000	0	101	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R54419		RunNo: 54419							
Prep Date:	Analysis Date: 9/25/2018		SeqNo: 1803021		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R54419		RunNo: 54419							
Prep Date:	Analysis Date: 9/25/2018		SeqNo: 1803022		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.2	90	110			
Sulfate	9.3	0.50	10.00	0	93.3	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809749

03-Oct-18

Client: SWCA
Project: Faulk 7 SWD Permitting

Sample ID	ics-1 98.6uS eC	SampType:	LCS	TestCode:	SM2510B: Specific Conductance					
Client ID:	LCSW	Batch ID:	R54265	RunNo:	54265					
Prep Date:		Analysis Date:	9/18/2018	SeqNo:	1795469	Units:	µmhos/cm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	5.0	98.30	0	103	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809749

03-Oct-18

Client: SWCA
Project: Faulk 7 SWD Permitting

Sample ID	mb-1 alk	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R54265	RunNo:	54265					
Prep Date:		Analysis Date:	9/18/2018	SeqNo:	1795420	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	ics-1 alk	SampType:	LCS	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R54265	RunNo:	54265					
Prep Date:		Analysis Date:	9/18/2018	SeqNo:	1795421	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	78.20	20.00	80.00	0	97.7	90	110			

Sample ID	mb-2 alk	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R54265	RunNo:	54265					
Prep Date:		Analysis Date:	9/18/2018	SeqNo:	1795444	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	ics-2 alk	SampType:	LCS	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R54265	RunNo:	54265					
Prep Date:		Analysis Date:	9/18/2018	SeqNo:	1795445	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	76.92	20.00	80.00	0	96.2	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809749

03-Oct-18

Client: SWCA
Project: Faulk 7 SWD Permitting

Sample ID	MB-40427	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	40427	RunNo:	54298					
Prep Date:	9/18/2018	Analysis Date:	9/20/2018	SeqNo:	1796602	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-40427	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	40427	RunNo:	54298					
Prep Date:	9/18/2018	Analysis Date:	9/20/2018	SeqNo:	1796603	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1000	20.0	1000	0	100	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

Sample Log-In Check List

Client Name: SWCA

Work Order Number: 1809749

RcptNo: 1

Received By: Michelle Garcia 9/13/2018 9:05:00 AM

Michelle Garcia

Completed By: Ashley Gallegos 9/13/2018 12:35:59 PM

AG

Reviewed By: *mg 09/13/18*

Labeled by: *JAB 09/13/18*

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? FedEx

Log In

3. Was an attempt made to cool the samples? Yes No NA
 4. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 5. Sample(s) in proper container(s)? Yes No
 6. Sufficient sample volume for indicated test(s)? Yes No
 7. Are samples (except VOA and ONG) properly preserved? Yes No
 8. Was preservative added to bottles? Yes No NA
 9. VOA vials have zero headspace? Yes No No VOA Vials
 10. Were any sample containers received broken? Yes No
 11. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 12. Are matrices correctly identified on Chain of Custody? Yes No
 13. Is it clear what analyses were requested? Yes No
 14. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

of preserved bottles checked for pH: *4*
 (<2 or >12 unless noted)
 Adjusted? *No*
 Checked by: *JAB 09/13/18*

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	Lara Thompson	Date:	9/13/2018
By Whom:	Michelle Garcia	Via:	<input type="checkbox"/> eMail <input checked="" type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	Missing analysis request		
Client Instructions:	Run Cation/Anion Balance		

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.5	Good	Yes			

SECTION XII

Operator Affirmative Statement

Black River Water Management Company, LLC

One Lincoln Centre • 5400 LBJ Freeway • Suite 1500 • Dallas, Texas 75240

Voice 972.371.5454 • Fax 214.866.4832

ccollier@matadorresources.com

Clark Collier
Senior Geologist

September 7, 2018

New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
David.Catanach@state.nm.us

**Re: Geology Statement
Faulk SWD #7 (“the Well”)
Section 32, Township 22 South, Range 28 East, N.M.P.M.
Eddy County, New Mexico**

To whom it may concern:

Available geologic and engineering data related to the proposed Well has been thoroughly reviewed, and no evidence for a hydrological connection between the proposed deep Devonian injection zone, located at approximately 13,761’, and any underground sources of drinking water has been found.

Sincerely,
Black River Water Management
Company, LLC

Clark Collier



Section XIII

Proof of Notice

CARLSBAD
CURRENT-ARGUS

AFFIDAVIT OF PUBLICATION

**Ad No.
0001265059**

SWCA ENVIRONMENTAL CONSULTANTS
5647 JEFFERSON STREET NE

ALBUQUERQUE NM 87109

I, a legal clerk of the **Carlsbad Current-Argus**, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

10/13/18



Legal Clerk

Subscribed and sworn before me this
15th of October 2018.



State of WI, County of Brown
NOTARY PUBLIC

1-12-2021

My Commission Expires

Legal Notice

Black River Water Management Company, LLC is seeking administrative approval from the New Mexico Oil Conservation Division to inject produced salt water into a new disposal well, Faulk SWD #7. The expected maximum injection rate is 45,000 bpd and the expected maximum pressure is 2,785 psi.

Faulk SWD #7 is located in Township 22S, Range 28E, Sec. 32, 161' FSL and 515' FEL, Eddy County, NM. The injection interval will be 13,786' to 14,611 TVD, in the Devonian formation.

Affected parties were notified via certified letter. Addresses for parties listed below could not be located: Olen F. Featherstone and Robert J. Cerf.

Interested parties must file objections or requests for hearing with the New Mexico Oil Conservation Division, 1220 South Saint Francis Dr., Santa Fe, NM 87505 within 15 days. Additional information can be obtained by contacting Tara Flume of Black River Water Management Company, LLC at 5400 LBJ Freeway, Suite 1500, Dallas, Texas 75240 or by calling (972)-371-5203.

Pub: October 13, 2018 #1265059



IN WITNESS WHEREOF, this Memorandum of Salt Water Disposal Well Lease Agreement is effective as of the Effective Date of the Lease.

LESSOR:

DAVID A. FAULK

By: David A. Faulk

VICKYE FAULK

By: Vickie Faulk

LESSEE:

BLACK RIVER WATER MANAGEMENT
COMPANY, LLC

By: Matthew D. Spicer MBV
Name: Matthew D. Spicer TTF
Title: Vice President

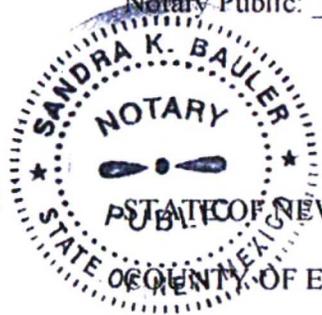
ACKNOWLEDGEMENT

STATE OF NEW MEXICO §
 §
COUNTY OF EDDY §

This instrument was acknowledged before me on this 31 day August 2018, by David A. Faulk.

My commission expires: June 28, 2020

Notary Public: Sandra K. Bauler

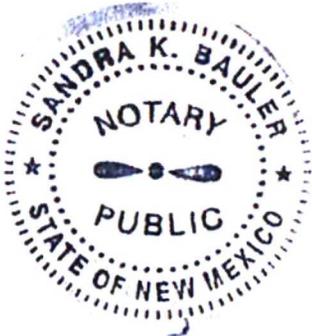


STATE OF NEW MEXICO §
 §
COUNTY OF EDDY §

This instrument was acknowledged before me on this 31 day August 2018, by Vickye Faulk.

My commission expires: June 28, 2020

Notary Public: Sandra K. Bauler



ACKNOWLEDGEMENT

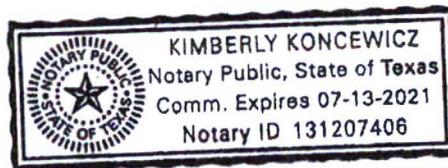
STATE OF TEXAS §
 §
COUNTY OF DALLAS §

Before me, a notary public, on this day personally appeared Matthew D. Spicer, known to me to be the person whose name is subscribed to the foregoing instrument, and known to me to be the Vice President of BLACK RIVER WATER MANAGEMENT COMPANY, LLC, a Texas limited liability company, and acknowledged to me that he executed on behalf of said limited liability company.

Given under my hand and seal of office this 13th day of SEPTEMBER, 2018.

My commission expires: 7/13/21

Notary Public: *Kim Koncewicz*



Black River Water Management Company, LLC
5400 LBJ Freeway, Suite 1500
Dallas, Texas 75240

October 10, 2018

VIA CERTIFIED RETURN RECEIPT

SUBJECT: APPLICATION FOR AUTHORIZATION TO INJECT INTO FAULK SWD #7

Dear Sir or Madam:

Black River Water Management Company, LLC is seeking administrative approval from the New Mexico Oil Conservation Division (NMOCD) to utilize a new vertical well Faulk SWD #7 to dispose of produced salt water into the Devonian formation. As required by NMOCD, you are receiving this package because you have been identified as having past or current interest in acreage near the vicinity of our proposed activity. No action is required unless you have questions or objections

The well is located in Section 32, Township 22S, Range 28E of Eddy County, NM at 161' FSL & 515' FEL. The proposed disposal zone will be between 13,786 and 14,611 feet total depth.

To submit comments or objections contact the State of New Mexico Oil Conservation Division Engineering Bureau at 1220 South St. Francis Drive, Santa Fe, NM 87505. A decision can be made 15 days after the application is submitted if no objections is received. If you have any questions regarding the enclosed application, Black River Water Management Company can be reached at the address above, (972) 371-5203 or info@sanmateomidstream.com.

Sincerely,

Tara Flume
Senior Midstream Counsel
Black River Water Management Company, LLC

Enclosures: List of Interested Parties

List Interested of Parties:

Marathon Oil Permian, LLC
5555 San Felipe Street
Houston, TX 79701

J.R. Rowan
PO Box 70907
Midland, TX 79708

Continental Land Resources, LLC
PO Box 2691
Roswell, NM 88201

Helen Joyce Hardgrave
6012 E. 114th
Tulsa, OK 74137

Ruth D. Roberts
c/o C. Daniel Roberts
PO Box 6368
Austin, TX 78762

Chalmers A. Loughridge
3901 Riva Drive
Alexandria, VA 22309

Sonja Lopez
1081 Gobbler Drive
Holladay, TN 38341

Tundra AD3, LP
2100 Ross Ave., Suite 1870
Dallas, TX 75201

Roy G. Barton, Jr. and Claudia R. Barton
1919 N. Turner St.
Hobbs, NM 88240

NOVO Minerals, LP
1001 West Wilshire Blvd, Suite 206
Oklahoma City, OK 73116

Novo Oil & Gas Northern Delaware, LLC
1001 West Wilshire Blvd, Suite 206
Oklahoma City, OK 73116

Roy G. Barton, Jr.
1919 N. Turner St.
Hobbs, NM 88240

Realeza Del Spear, LP
PO Box 1684
Midland, TX 79702

Chalfant, Magee & Hansen, Inc.
1201 First National Bank Bldg.
Midland, TX 79701

Finwing Corporation
508 West Wall St., Suite 1200
Midland, TX 79701

Orla Petco, Inc.
PO Box 1383
Midland, TX 79702

Cities Service Company
PO Box 300
Tulsa, OK 74102

Ed Phillips
PO Box 11313
Midland, TX 79702

Southwest Royalties, Inc.
PO Box 11390
Midland, TX 79702

Oxy USA Inc.
5 Greenway Plaza, Suite 110
Houston, TX 77046

Nadel and Gussman Permian, LLC
3300 1st Place Tower
15 E 5th St
Tulsa, Oklahoma 74103

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Postage \$0.50

Total Postage \$6.70

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Tulsa, OK 74137

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Houston, TX 77046

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<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00

Postage \$0.50

Total Postage \$6.70

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5555 San Felipe Street
Houston, TX 79701

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Alexandria, VA 22309

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Total Postage & Fees \$6.70

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3300 1st Place Tower
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Tulsa, Oklahoma 74103

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Return Receipt Fee (Endorsement Required)	\$0.00	
Restricted Delivery Fee (Endorsement Required)	\$0.00	
Total Postage & Fees	\$16.70	

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Midland, TX 79702

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Return Receipt Fee (Endorsement Required)	\$0.00	
Restricted Delivery Fee (Endorsement Required)	\$0.00	
Total Postage & Fees	\$16.70	

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PO Box 2691
Roswell, NM 88201

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DALLAS TX 75201
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Return Receipt Fee (Endorsement Required)	\$0.00	
Restricted Delivery Fee (Endorsement Required)	\$0.00	
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2100 Ross Ave., Suite 1870
Dallas, TX 75201

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Return Receipt Fee (Endorsement Required)	\$0.00	
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Total Postage & Fees	\$16.70	

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Return Receipt (electronic)	\$0.00	
Certified Mail Restricted Delivery	\$0.00	
Adult Signature Required	\$0.00	
Adult Signature Restricted Delivery	\$0.00	
Total	\$6.70	

Sent To
Novo Oil & Gas Northern Delaware, LLC
1001 West Wilshire Blvd, Suite 206
Oklahoma City, OK 73116

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Restricted Delivery Fee (Endorsement Required)	\$0.00	
Total	\$16.70	

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<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00	
<input type="checkbox"/> Adult Signature Required	\$0.00	
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00	
Postage	\$0.50	
Total Postage and Fees	\$6.70	

Sent To: J.R. Rowan
PO Box 70907
Midland, TX 79708

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Restricted Delivery Fee (Endorsement Required)	\$0.00	
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508 West Wall St., Suite 1200
Midland, TX 79701

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Postage	\$0.50	
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Sent To: Sonja Lopez
1081 Gobbler Drive
Holladay, TN 38341

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<input type="checkbox"/> Adult Signature Required	\$0.00	
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00	
Postage	\$0.50	
Total Postage and Fees	\$6.70	

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c/o C. Daniel Roberts
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<input type="checkbox"/> Adult Signature Required	\$0.00	
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00	
Postage	\$0.50	
Total Postage and Fees	\$6.70	

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1201 First National Bank Bldg.
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<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00	
Postage	\$0.50	
Total Postage and Fees	\$6.70	

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1001 West Wilshire Blvd, Suite 206
Oklahoma City, OK 73116

Postmark: OCT 10 2018

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Restricted Delivery Fee (Endorsement Required)	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$0.00
Total Postage & Fees	\$6.70



10/10/2018

Sent To
 Street, Apt. No. or PO Box No.
 City, State, ZIP

**Ed Phillips
 PO Box 11313
 Midland, TX 79702**

PS Form 3800, June 2002

7004 2510 0006 5140 8980

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Restricted Delivery Fee (Endorsement Required)	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$0.00
Total Postage & Fees	\$6.70



10/10/2018

Sent To

**Roy G. Barton, Jr. and Claudia R. Barton
 1919 N. Turner St.
 Hobbs, NM 88240**

PS Form 3800, June 2002

7004 2510 0006 5140 9048

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TULSA, OK 74102

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Restricted Delivery Fee (Endorsement Required)	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$0.00
Total Postage & Fees	\$6.70



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**Cities Service Company
 PO Box 300
 Tulsa, OK 74102**

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Restricted Delivery Fee (Endorsement Required)	\$0.00
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Hobbs, NM 88240

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See Reverse for Instructions

8405 0415 9000 0152 4002

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10/10/2018

Sent To
Cities Service Company
PO Box 300
Tulsa, OK 74102

PS Form 3800

McMillan, Michael, EMNRD

From: Lara Thompson <Lara.Thompson@swca.com>
Sent: Friday, March 29, 2019 10:01 AM
To: McMillan, Michael, EMNRD
Subject: [EXT] RE: EXTERNAL:RE: Additional Application Materials for Black River Water Mgmt's Faulk #7 SWD Well
Attachments: Certified Mail Receipt- App sent to Eastland Oil.pdf

Hi Michael,

Just to be on the safe side, we went ahead and sent notification to Eastland Oil Company, which does have a lease in the far northern reach of the area of review. The certified mail receipt for that is attached. Can you let me know if the application is now complete?

Thanks!

-Lara

From: McMillan, Michael, EMNRD <Michael.McMillan@state.nm.us>
Sent: Monday, March 25, 2019 4:35 PM
To: Lara Thompson <Lara.Thompson@swca.com>
Subject: EXTERNAL:RE: Additional Application Materials for Black River Water Mgmt's Faulk #7 SWD Well

Yes

How about the SW/4 SW/4 of Section 28 and S/2 SE/4 of Section 29.

Do you need to notify them

Mike

From: Lara Thompson <Lara.Thompson@swca.com>
Sent: Monday, March 25, 2019 12:25 PM
To: McMillan, Michael, EMNRD <Michael.McMillan@state.nm.us>
Subject: [EXT] RE: Additional Application Materials for Black River Water Mgmt's Faulk #7 SWD Well

Hi Michael,

I have attached a revised set of produced water data that shows Bonespring and Wolfcamp wells that have much higher TDS values than the previous ones I sent. Let me know if these will work for the Faulk #7 SWD well application.

Thanks,

Lara

From: Lara Thompson
Sent: Tuesday, March 19, 2019 2:34 PM
To: 'michael.mcmillan@state.nm.us' <michael.mcmillan@state.nm.us>
Subject: Additional Application Materials for Black River Water Mgmt's Faulk #7 SWD Well

Hi Michael,

Attached are the additional application materials you requested for Black River Water Management's Faulk #7 SWD well, including:

1. Maps showing all lessees and operators within a 1-mile AOR

2. A table with the chemical properties of produced water samples from the Delaware, Bonespring and Wolfcamp formations
 - a. There were few results for the Bonespring and Wolfcamp formations (I believe they are not commonly used for that purpose), but I believe you requested results from all three formations
3. A scanned receipt showing that we mailed a copy of the application packet to the surface owners, David and Vickye Faulk.

Please let me know if you need any additional info. Thanks,

Lara Thompson
Project Manager

SWCA Environmental Consultants
5647 Jefferson St NE
Albuquerque, NM 87109
P 505.254.1115 ext. 4604 | F 505.254.1116



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Return Receipt Fee (Endorsement Required)	\$0.00	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$1.00	\$0.00
Total Postage & Fees	\$7.90	\$7.90



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or PO Box No.
City, State, ZIP+4

Eastland Oil Company
PO Box 3488
Midland, TX 79702

PS Form 3800, JUN 03

McMillan, Michael, EMNRD

From: Lara Thompson <Lara.Thompson@swca.com>
Sent: Monday, April 1, 2019 9:47 AM
To: McMillan, Michael, EMNRD
Subject: [EXT] RE: EXTERNAL:RE: Additional Application Materials for Black River Water Mgmt's Faulk #7 SWD Well

Yes- I reached out to Tara Flume at Black River Water Management. She and her team checked the current lessees and operators in those two small areas and the only one that had not been previously notified was Eastland.

From: McMillan, Michael, EMNRD <Michael.McMillan@state.nm.us>
Sent: Monday, April 1, 2019 9:39 AM
To: Lara Thompson <Lara.Thompson@swca.com>
Subject: RE: EXTERNAL:RE: Additional Application Materials for Black River Water Mgmt's Faulk #7 SWD Well

Does this include notification of affected parties in both sections?

Mike

From: Lara Thompson <Lara.Thompson@swca.com>
Sent: Friday, March 29, 2019 10:01 AM
To: McMillan, Michael, EMNRD <Michael.McMillan@state.nm.us>
Subject: [EXT] RE: EXTERNAL:RE: Additional Application Materials for Black River Water Mgmt's Faulk #7 SWD Well

Hi Michael,
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Thanks!
-Lara

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Subject: EXTERNAL:RE: Additional Application Materials for Black River Water Mgmt's Faulk #7 SWD Well

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Subject: [EXT] RE: Additional Application Materials for Black River Water Mgmt's Faulk #7 SWD Well

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Lara

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Sent: Tuesday, March 19, 2019 2:34 PM

To: 'michael.mcmillan@state.nm.us' <michael.mcmillan@state.nm.us>

Subject: Additional Application Materials for Black River Water Mgmt's Faulk #7 SWD Well

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 - a. There were few results for the Bonespring and Wolfcamp formations (I believe they are not commonly used for that purpose), but I believe you requested results from all three formations
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Please let me know if you need any additional info. Thanks,

Lara Thompson
Project Manager

SWCA Environmental Consultants

5647 Jefferson St NE

Albuquerque, NM 87109

P 505.254.1115 ext. 4604 | F 505.254.1116



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Table 1. Produced water data from wells in vicinity of Black Water River Management's proposed Faulk #7 SWD Well

Well Name	API	Lat	Long	Sec	Twsp	Range	Formation	Source	pH	TDS (ppm)	Cl (ppm)	Bicarb (ppm)	Sulfate (ppm)
OLD INDIAN DRAW UNIT #003	3001521504	32.3836327	-104.1248856	19	22S	28E	Delaware	Wellhead	7.2	127652	76200	415	2600
OLD INDIAN DRAW UNIT #011	3001521844	32.3844833	-104.1206665	19	22S	28E	Delaware	Wellhead	8.6	130991	78000	586	1800
BOSS HOGG 15 STATE COM #003H	3001541837	32.3115501	-104.2776184	15	23S	26E	Bonespring	-	6.82	160607.8	56960.8	629.5	-
BELLOQ 2 STATE #002H	3001542895	32.34007037	-103.7515914	2	23S	31E	Wolfcamp	-	6.8	119471.8	73172.5	-	1035.5

*Data taken from New Mexico Tech's Go-Tech website (<http://octane.nmt.edu/gotech/Water/producedwater.aspx>) on March 25, 2019

**STATE OF NEW MEXICO
OIL CONSERVATION DIVISION
APPLICATION FOR AUTHORIZATION TO INJECT**

Prepared for

Black River Water Management Company, LLC
5400 LBJ Freeway
Dallas, Texas 75240

Attn. Tara Flume
Senior Midstream Council
(972) 629-2129
tflume@sanmateomidstream.com

Prepared by

SWCA Environmental Consultants
5647 Jefferson Street NE
Albuquerque, New Mexico 87109
(505) 254-1115
www.swca.com

October 2018

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: Secondary Recovery Pressure Maintenance Disposal Storage
Application qualifies for administrative approval? Yes No
- II. OPERATOR: Black River Water Management Company, LLC
ADDRESS: 5400 LBJ Freeway, Suite 1500 Dallas, Texas
CONTACT PARTY: Tara Flume PHONE: 972-629-2129
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? Yes No
If yes, give the Division order number authorizing the project: _____
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
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: Lara Thompson TITLE: Natural Resource Specialist
SIGNATURE: Lara Thompson DATE: 10/26/2018
E-MAIL ADDRESS: lara.thompson@swca.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: _____

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.

SECTION III

Well Data

A (1)

Lease Name: Faulk SWD

Well Name and Number: Faulk SWD #7

Well Location: Sec. 32-T22S-R28E, 161' FSL & 515' FEL, Eddy County, New Mexico

A (2)

Casing Size	Setting Depth	Sx of Cement	Hole Size	Cement Top	Method Determined
20"	550'	1,100	26"	Surface	Circulate
16"	2600'	1,400	18-1/8"	Surface	Circulate
10-3/4"	10,400'	3,800	14-3/4"	Surface	Circulate
7-5/8"	13,762'	1,100	9-1/2"	9,900'	CBL

A (3): Tubing: 5.5", 20.0# P110, BTC, Internal Plastic Coated 0'-13,740'.

A (4): Packer: Chrome and/or nickel-coated packer

B (1): Injection formation: Devonian (estimated to be approximately 1,000' thick)

B (2): Injection interval: 13,761' to 14,611', open hole

B (3): New well drilled for disposal

B (4): Depths of any other perforated intervals, sacks of cement or bridge plugs used to seal off such perforations: N/A

B (5):

- Next higher oil or gas zone in the area of the well: Morrow 11,887' to 12,531'
- Next lower oil or gas zone in the area of the well: None

WELLBORE SCHEMATIC

WELL: Faulk SWD #7

PROSPECT: Devonian SWD

GL ELEV : 3026'
RKB ELEV : 3055'

SURFACE LOCATION: 161' FSL & 515' FEL
Sec. 32, TWP 22-S, RGE 28-E
Eddy County, NM

Formation Tops (TVD)		CASING DIAGRAM	Depth	Hole	Casing & Cement Details 30" Conductor @ ± 120'	
			550'	26"	Surf. Csg Cmt: (150% Excess) Top of Cement: Circulate to surface 20", 94#, K-55, BTC	
Lamar @ 2392'			18,125'		1st Int. Csg Cmt: (120% Excess) Lead: Circulate to surface Tail: 20% critical 16", 84#, N-80HC, BTC	
Bell Canyon @ 2567'			2600'			
Cherry Canyon @ 3317'				14,75'		2nd Int. Csg Cmt: (50% Excess) Top of Cement: Surface 10-3/4", 47.0#, P110HC
Brushy Canyon @ 4463'				10,400'		
Bone Spring Lime @ 5974'						
1st Bone Spring Sand @ 6817'						
2nd Bone Spring Carb @ 7292'						
2nd Bone Spring Sand @ 7804'						
3rd Bone Spring Carb @ 8122'						
3rd Bone Spring Sand @ 9014'						
Wolfcamp @ 9363'						
Wolfcamp B @ 9698'						
Wolfcamp D @ 10611'				9.5"	Prod Csg Cmt: (35% Excess) Top of Cement: 9,900'	
Strawn @ 11063'						
Atoka @ 11216'						
Morrow @ 11887'						
Barnett @ 12531'						
Miss Lime @ 13165'						
Woodford Shale @ 13603'						
Devonian Carb @ 13761'					7-5/8", 29.7#, P110 HC, BTC, 0-9400' 7-5/8", 33.7#, P110 EC, BTC, 9400'-13,762'	
Montoya @ 14761'				6.5"	Tubing: 5-1/2" 20.0#, P110IC, BTC, Internal Plastic Coated 0' - 13,740' Chrome and/or Nickel Coated Packer set @ 13,740'	
		TD @ 14,611' TVD				

Prepared By: ACL - 10/24/18

INJECTION WELL DATA SHEET

OPERATOR: Black River Water Management Company, LLC

WELL NAME & NUMBER: Faulk SWD #007

WELL LOCATION:	<u>161' FSL & 515' FEL</u>	<u>P</u>	<u>32</u>	<u>T</u>
	FOOTAGE LOCATION	UNIT LETTER	SECTION	T

WELLBORE SCHEMATIC

WELL CONSTRUCTION
Surface Casing

Hole Size: 26" Ca

Cemented with: 1100 sx. **or**

Top of Cement: 0' Me

Intermediate Casing

Hole Size: 18.125" Ca

Cemented with: 1400 sx. **or**

Top of Cement: 0' Me

Intermediate Casing

Hole Size: 14.75" Ca

Cemented with: 3800 sx. **or**

Top of Cement: 0' Me

Production Casing

Hole Size: 9.5" Ca

Cemented with: 1100 sx. **or**

Top of Cement: 9,900' Mc

Total Depth: 13,761

Injection Interval

13,761 feet to

(Perforated or Open Hole; i

INJECTION WELL DATA SHEET

Tubing Size: 5-1/2" Lining Material: Internal Plastic Coated

Type of Packer: Chrome and/or Nickel coated

Packer Setting Depth: 13,740'

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: Devonian formation

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

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. N/A

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

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
⁴ Property Code	⁵ Property Name FAULK SWD		⁶ Well Number #7
⁷ OGRID No.	⁸ Operator Name BLACK RIVER WATER MANAGEMENT COMPANY, LLC		⁹ Elevation 3026'

¹⁰Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	32	22-S	28-E	-	161'	SOUTH	515'	EAST	EDDY

¹¹Bottom 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 40	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
-------------------------------------	-------------------------------	----------------------------------	-------------------------

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.

<p>¹⁶</p> <p>SURFACE LOCATION NEW MEXICO EAST NAD 1927 X=571552 Y=488298 LAT.: N 32.3422330 LONG.: W 104.1016532 NAD 1983 X=612734 Y=488357 LAT.: N 32.3423531 LONG.: W 104.1021506</p>		<p>¹⁷OPERATOR CERTIFICATION</p> <p>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.</p> <p><i>Andrea McArdle</i> 10/11/18 Signature Date</p> <p>Andrea McArdle Printed Name</p> <p>andrea.mcardle@swca.com E-mail Address</p>
		<p>¹⁸SURVEYOR CERTIFICATION</p> <p>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 to the best of my belief.</p> <p>08/22/2018 Date of Survey Signature and Seal MICHAEL ESTEY NEW MEXICO 18329 PROFESSIONAL SURVEYOR</p> <p>Certificate Number</p>

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
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State of New Mexico
Energy, Minerals & Natural Resources
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OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
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FORM C-102
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Submit one copy to appropriate
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AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number		² Pool Code		³ Pool Name	
⁴ Property Code		⁵ Property Name FAULK SWD			⁶ Well Number #7
⁷ OGRID No.		⁸ Operator Name BLACK RIVER WATER MANAGEMENT COMPANY, LLC			⁹ Elevation 3026'

¹⁰Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	32	22-S	28-E	-	161'	SOUTH	515'	EAST	EDDY

¹¹Bottom Hole Location If Different From Surface

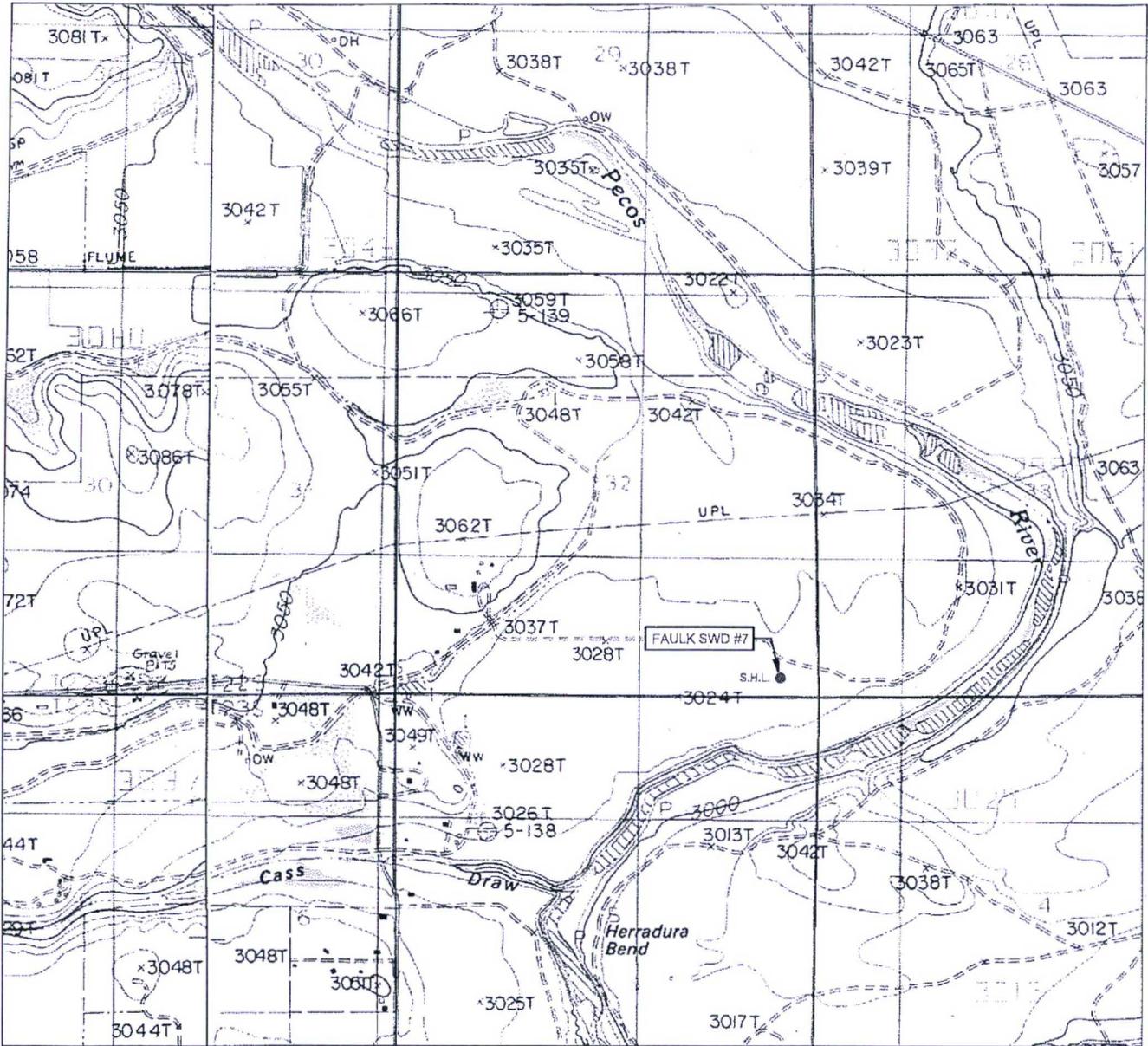
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
-	-	-	-	-	-	-	-	-	-

¹² Dedicated Acres 40	¹³ Joint or InHH	¹⁴ Consolidation Code	¹⁵ Order No.
-------------------------------------	-----------------------------	----------------------------------	-------------------------

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.

¹⁶ <div style="border: 1px solid black; padding: 5px; width: fit-content;"> SURFACE LOCATION NEW MEXICO EAST NAD 1927 X=571552 Y=488298 LAT.: N 32.3422330 LONG.: W 104.1016532 NAD 1983 X=612734 Y=488357 LAT.: N 32.3423531 LONG.: W 104.1021506 </div>	NAD27 NAD83 X=570708.17 X=611890.39 Y=489449.15 Y=488508.72	NAD27 NAD83 X=572034.41 X=613216.64 Y=489467.17 Y=489526.75	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.  Signature _____ Date: 10/11/18 Printed Name: Andrea McArdle E-mail Address: andrea-mcardle@swca.com
	NAD27 NAD83 X=570738.20 X=611920.45 Y=488126.06 Y=488185.59	NAD27 NAD83 X=572071.28 X=613253.55 Y=488143.96 Y=488203.51	

LOCATION & ELEVATION VERIFICATION MAP



LEASE NAME & WELL NO.: FAULK SWD #7

SECTION 32 TWP 22-S RGE 28-E SURVEY N.M.P.M.
 COUNTY EDDY STATE NM ELEVATION 3026'
 DESCRIPTION 161' FSL & 515' FEL

LATITUDE N 32.3423531 LONGITUDE W 104.1021506



SCALE: 1" = 2000'
 0' 1000' 2000'

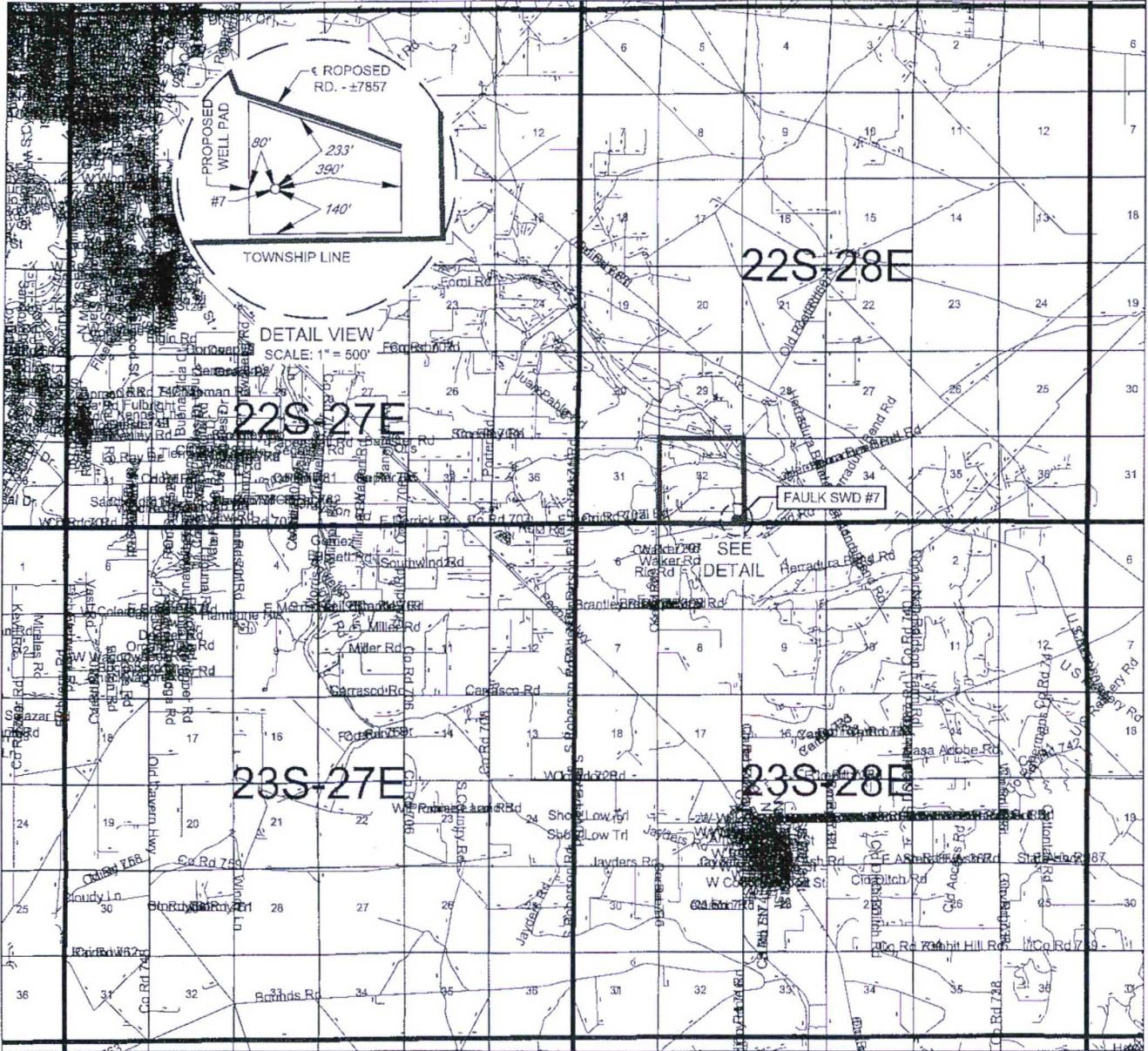


1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
 TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
 2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
 TELEPHONE: (432) 682-1653 OR (800) 787-1653 • FAX (432) 682-1743
 WWW.TOPOGRAPHIC.COM

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY BLACK RIVER WATER MANAGEMENT COMPANY, LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.

VICINITY MAP



LEASE NAME & WELL NO.: _____ FAULK SWD #7

SECTION 32 TWP 22-S RGE 28-E SURVEY N.M.P.M.
 COUNTY EDDY STATE NM
 DESCRIPTION 161' FSL & 515' FEL

DISTANCE & DIRECTION
 FROM INT. OF US HWY 285 & NM-31, GO EAST ON NM-31 ±0.2 MILES,
 THENCE NORTH (LEFT) ON KELLY RD. ±2.0 MILES, THENCE WEST
 (RIGHT) ON A PROPOSED RD. ±7857 FEET TO A POINT ±400 FEET
 NORTHEAST OF THE LOCATION.



TOPOGRAPHIC
 LOYALTY INNOVATION LEGACY
 1400 EVERMAN PARKWAY, Ste. 140 • FT. WORTH, TEXAS 76140
 TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
 2803 NORTH BIG SPRING • MIDLAND, TEXAS 79705
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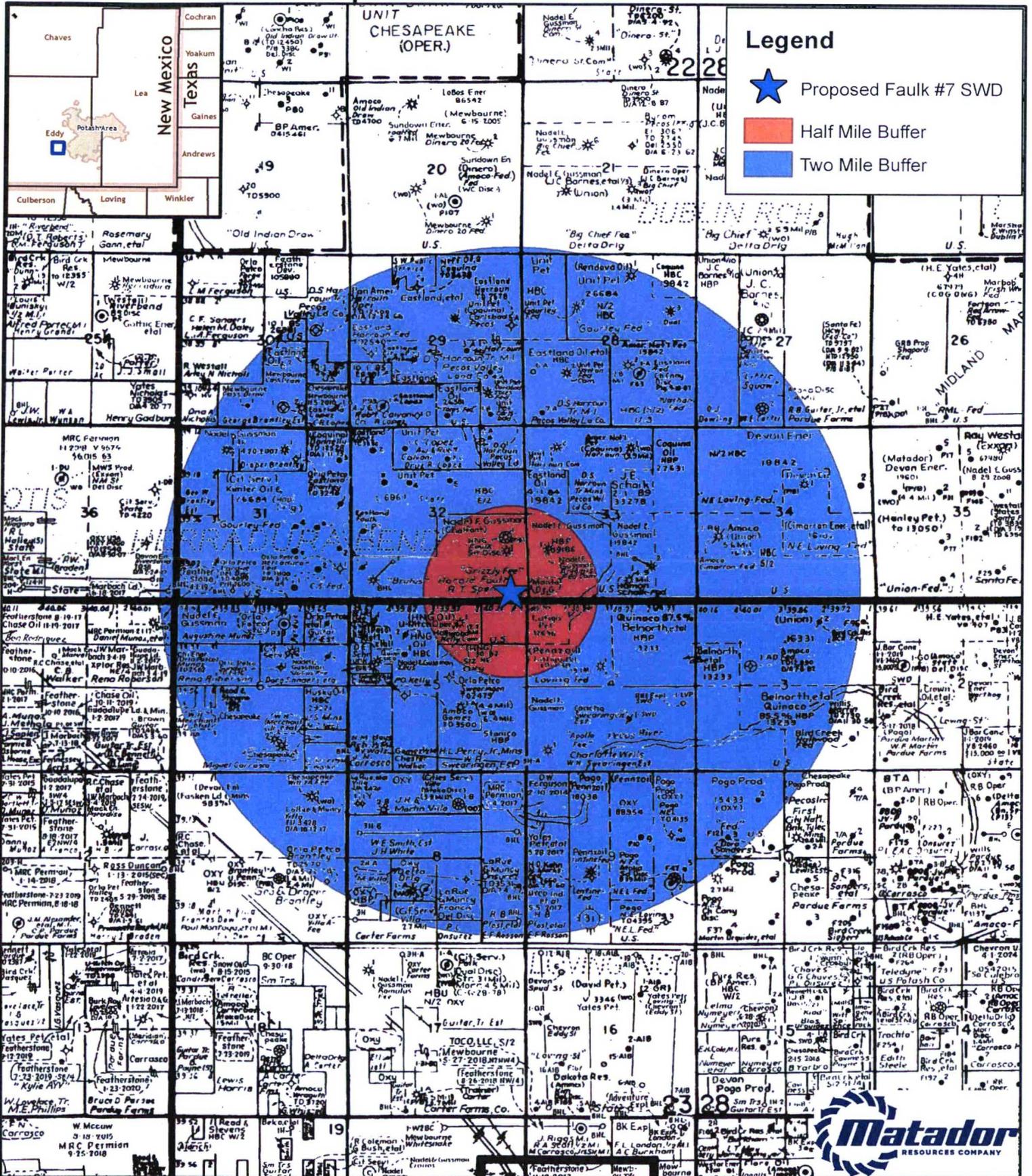
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ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.

SECTION V

Adjacent Wells and Leases

Proposed Faulk #7 SWD



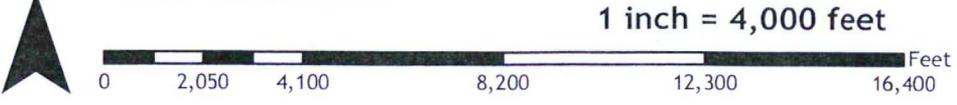
Legend

- Proposed Faulk #7 SWD
- Half Mile Buffer
- Two Mile Buffer

GIS Standard Map Disclaimer:
 This cartographic product is for informational purposes and may not be used for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the suitability of the information.

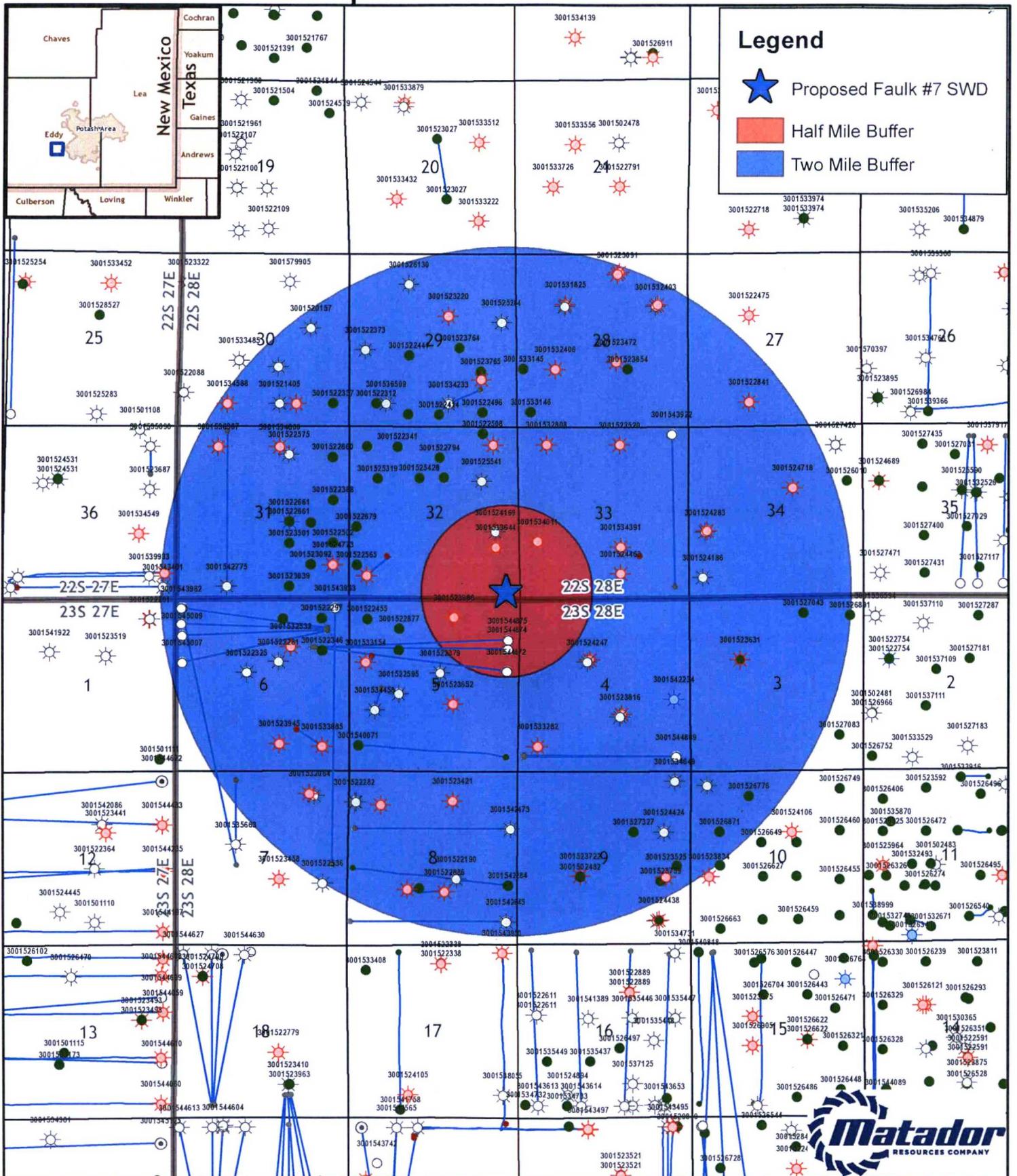
1:48,000
 1 inch = 4,000 feet

Southeast New Mexico



Map Prepared by: thudjins
 Date: September 13, 2018
 Filename: Faulk7_SWD_Notice
 Coordinate System: NAD 1927 StatePlane New Mexico East FIPS 3001
 Projection: Transverse Mercator; Datum: North American 1927; Units: Foot US
 Sources: IHS; ESRI;

Proposed Faulk #7 SWD



Legend

- ★ Proposed Faulk #7 SWD
- Half Mile Buffer
- Two Mile Buffer

GIS Standard Map Disclaimer:
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1:48,000

1 inch = 4,000 feet

Southeast New Mexico



Map Prepared by: thudjins
 Date: September 13, 2018
 Filename: Faulk7_SWD_Notice
 Coordinate System: NAD 1927 StatePlane New Mexico East FIPS 3001
 Projection: Transverse Mercator; Datum: North American 1927; Units: Foot US
 Sources: IHS; ESRI

SECTION VI

Other Wells within Area of Review

NMOSE Wells of Public Record within Area of Review

Well Locations - Large Scale	Distance from Faulk #7	Location	Well Type	Well Status	SPUD Date
GRIZZLY FEE #001	0.25 mi	sec32 T22S-R28E	gas	active	10/12/20
KELLY 5 COM #001	0.32 mi	sec5 T23S-R28E	gas	active	10/16/19
PRE-ONGARD WELL #001	0.34 mi	sec32 T22S-R28E	oil	plugged	1/1/19
ARTEMIS FEDERAL COM #001	0.35 mi	sec33 T22-R28E	gas	active	4/1/20
PRE-ONGARD WELL #001	0.41 mi	sec5 T23S-R28E	gas	plugged	1/1/19
PRE-ONGARD WELL #001	0.59 mi	sec5 T23S-R28E	gas	plugged	1/2/19
PRE-ONGARD WELL #001	0.64 mi	sec5 T23S-R28E	gas	plugged	1/3/19
LOVING FEDERAL COM #001	0.65 mi	sec4 T23S-R28E	gas	active	12/3/19
PRE-ONGARD WELL #001	0.65 mi	sec4 T23S-R28E	oil	cancelled APD	N/A
PRE-ONGARD WELL #006	0.66 mi	sec32 T22S-R28E	oil	cancelled APD	N/A
SCHALK FEDERAL COM 33 #001	0.7 mi	sec33 T22S-R28E	gas	plugged	N/A
BRUTUS #001	0.71 mi	sec32 T22S-R28E	gas	active	7/18/20
SWEARINGEN A COM #001	0.72 mi	sec5 T23S-R28E	gas	active	2/23/19
STATE 32 #005	0.74 mi	sec32 T22S-R28E	oil	active	12/8/19
USA 9 FEDERAL COM #003H	0.81 mi	sec32 T22S-R28E	oil	active	10/26/19
KELLY #001	0.81 mi	sec5 T23S-R28E	water storage	plugged	3/18/19
WINCHESTER FEDERAL COM #001H	0.81 mi	sec9 T20S-R28E	oil	cancelled APD	N/A
STATE 32 #004	0.82 mi	sec32 T22S-R28E	oil	active	10/26/19
ARTEMIS FEDERAL COM #002	0.82 mi	sec33 T22S-R28E	gas	active	11/1/20
CARLSBAD #001	0.85 mi	sec32 T22S-R28E	gas	active	4/25/20
ZEUS #001	0.86 mi	sec5 T23S-R28E	gas	active	1/15/20
PRE-ONGARD WELL #001	0.86 mi	sec5 T23S-R28E	oil	plugged	1/1/19
C.R. LOPEZ C #002	0.86 mi	sec32 T22S-R28E	oil	active	1/20/19
PRE-ONGARD WELL #001	0.87 mi	sec32 T22S-R28E	oil	plugged	1/1/19
HARROUN COM #002	0.89 mi	sec33 T22S-R28E	gas	active	7/2/20
SWEARINGEN A COM #002C	0.9 mi	sec5 T23S-R28E	gas	cancelled APD	N/A
HARROUN A #002	0.92 mi	sec32 T22S-R28E	oil	plugged	N/A
STATE 32 #001	0.93 mi	sec32 T22S-R28E	oil	active	9/16/19
APOLLO FEE #001	0.93 mi	sec4 T23S-R28E	gas	active	3/24/20
SWEARINGEN A FEE COM #003H	0.97 mi	sec5 T23S-R28E	oil	active	6/3/20
STATE 32 #003	0.98 mi	sec32 T22S-R28E	oil	active	9/6/19
APOLLO FEE 23 28 4 WA #005H	0.98 mi	sec5 T23S-R28E	gas	not drilled/completed	N/A
HERRADURA FEDERAL #001	0.99 mi	sec31 T22s-R28E	oil	plugged	2/23/19
APOLLO FEE 23 28 4 WD #00	0.99 mi	sec4 T23S-R28E	gas	plugged	N/A

There are no Devonian penetrators within a mile of the proposed disposal well. The table above shows all wells of public record within the

SECTION VII

Proposed Operations

VII.(1) Proposed average and maximum daily rate and volume of fluids to be injected:

- a. Average: 35,000 BWPD
- b. Maximum: 45,000 BWPD

VII.(2) Open System

VII.(3) Proposed average and maximum injection pressure:

- a. Average: 2300 psi;
- b. Maximum: 2,785 psi

VII.(4) Produced water, primarily from Bone Springs and Wolfcamp wells. No known incompatibility exists with injected water into the Devonian. Water is compatible with Devonian formation and is used as a disposal interval throughout the Delaware Basin for Wolfcamp and Bone Springs produced water.

VII.(5) The closest Devonian producer (API 30-D15-28991) is approximately 3.3 miles away It is P&A.

SECTION VIII- IX

Geologic Data, Stimulation Program Logging and Testing

Section VIII

- The proposed disposal interval is in the Devonian formation, which is estimated to be approximately 1,000 feet thick. There are no fresh water zones underlying the proposed injection zone. See NMOSE's Water Column/Average Depth to Water report on the following page for overlying water zone data.
- Devonian is an impermeable Shale at the very top (Woodford Shale) followed by permeable dolomite and Lime.
- Mud logs and electric logs will be used to confirm the estimated depths of the Woodford and Devonian Dolomite along with other significant tops.
- A gamma ray log will be run from second intermediate to TD.

<i>Estimated Pre-Drill Formation Tops</i>	
Lamar	2392'
Bell Canyon	2567'
Cherry Canyon	3317'
Brushy Canyon	4463'
Bone Spring Lime	5974'
1 st Bone Spring Sand	6817'
2 nd Bone Spring Carb	7292'
2 nd Bone Spring Sand	7804'
3 rd Bone Spring Carb	8122'
3 rd Bone Spring Sand	9014'
Wolfcamp	9363'
Wolfcamp B	9698'
Wolfcamp D	10611'
Strawn	11063'
Atoka	11216'
Morrow	11887'
Barnett	12531'
Miss Lime	13165'
Woodford Shale	13603'
Devonian Carb	13761'
Montoya	14761'

Section IX

- Well will be stimulated with acid

SECTION XI

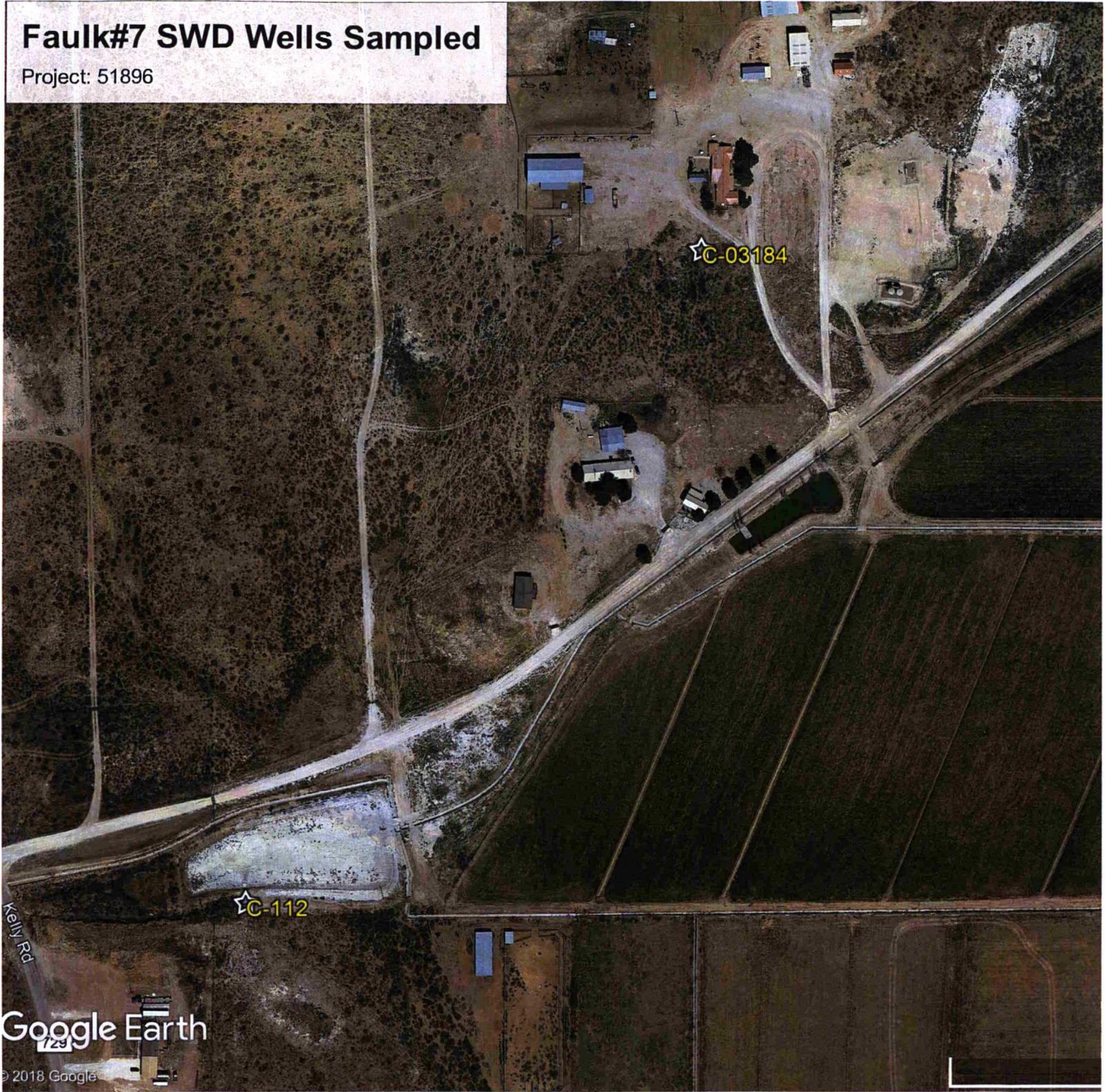
Location and Chemical Analysis of Fresh Water Well

Proposed Faulk #7 SWD Well

Status	POD Status	Owner-Last Name	Owner-First Name	Depth of Well	Depth to Water	Distance to Center	UTM Easting	UTM Northing
LIC	ACT	KELLY MRS P O	null	null	33	1374.379	583128	3578563
DCL	null	FAULK	HAROLD	200	null	1186.131	583327	3578962
PMT	PEN	CITY OF CARLSBAD	null	null	null	1457.973	584510	3580194
PMT	null	KELLY	P O	null	null	1098.174	583832	3577858
PMT	ACT	FAULK	DAVID A.	138	53	1438.612	583317	3579567
PMT	ACT	FAULK	DAVID	157	30	1186.131	583327	3578962
EXP	PEN	BRANTLEY	DRAPER	null	null	961.288	583926.6	3577958.3
EXP	PEN	PARKER	JUDY	250	null	1568.515	583156.2	3577913.1
LIC	ACT	FAULK	HAROLD	146	30	1364.674	583127	3578762
DEN	null	SWEARINGEN	W H	null	null	1277.99	585345	3577785
DEN	null	SWEARINGEN	W H	null	null	758.899	584543	3577979
DEN	null	SWEARINGEN	W H	null	null	962.474	584542	3577775
CAN	ACT	SPENCE	R T	146	null	1364.674	583127	3578762
CAN	ACT	SPENCE	R T	106	null	1023.857	583916	3579583
LIC	ACT	FAULK	HAROLD	200	35	1424.336	583517	3579775
PMT	ACT	FAULK	DAVID A.	80	39	997.394	583723	3579372
PMT	PEN	CITY OF CARLSBAD	null	null	null	1236.027	585119	3579801

Faulk#7 SWD Wells Sampled

Project: 51896



☆C-03184

☆C-112

Kelly Rd

Google Earth

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Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 03, 2018

Lara Thompson
SWCA
5647 Jefferson
Albuquerque, NM 87109
TEL: (505) 254-1115
FAX

RE: Faulk 7 SWD Permitting

OrderNo.: 1809749

Dear Lara Thompson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 9/13/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: SWCA

Client Sample ID: C-112-01-03

Project: Faulk 7 SWD Permitting

Collection Date: 9/12/2018 9:35:00 AM

Lab ID: 1809749-001

Matrix: AQUEOUS

Received Date: 9/13/2018 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MRA
Fluoride	ND	2.0		mg/L	20	9/13/2018 4:05:41 PM
Chloride	2400	100		mg/L	200	9/25/2018 11:13:31 PM
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	9/13/2018 4:05:41 PM
Bromide	ND	2.0		mg/L	20	9/13/2018 4:05:41 PM
Nitrogen, Nitrate (As N)	7.5	2.0		mg/L	20	9/13/2018 4:05:41 PM
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	9/13/2018 4:05:41 PM
Sulfate	2300	100		mg/L	200	9/25/2018 11:13:31 PM
EPA METHOD 200.7: DISSOLVED METALS						Analyst: ELS
Calcium	840	10		mg/L	10	9/17/2018 5:28:03 PM
Magnesium	380	10		mg/L	10	9/17/2018 5:28:03 PM
Potassium	6.1	1.0		mg/L	1	9/17/2018 5:25:43 PM
Sodium	1300	20		mg/L	20	9/18/2018 2:57:59 PM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: JRR
Conductivity	8300	5.0		µmhos/c	1	9/18/2018 2:44:07 PM
SM2320B: ALKALINITY						Analyst: JRR
Bicarbonate (As CaCO ₃)	243.9	20.00		mg/L Ca	1	9/18/2018 2:44:07 PM
Carbonate (As CaCO ₃)	ND	2.000		mg/L Ca	1	9/18/2018 2:44:07 PM
Total Alkalinity (as CaCO ₃)	243.9	20.00		mg/L Ca	1	9/18/2018 2:44:07 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	7440	200	*D	mg/L	1	9/20/2018 6:07:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: SWCA

Client Sample ID: C-03184-01-03

Project: Faulk 7 SWD Permitting

Collection Date: 9/12/2018 9:00:00 AM

Lab ID: 1809749-002

Matrix: AQUEOUS

Received Date: 9/13/2018 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MRA
Fluoride	ND	0.10		mg/L	1	9/13/2018 4:18:31 PM
Chloride	1600	100		mg/L	200	9/25/2018 11:25:55 PM
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	9/13/2018 4:31:23 PM
Bromide	ND	2.0		mg/L	20	9/13/2018 4:31:23 PM
Nitrogen, Nitrate (As N)	5.7	2.0		mg/L	20	9/13/2018 4:31:23 PM
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	9/13/2018 4:31:23 PM
Sulfate	2100	100		mg/L	200	9/25/2018 11:25:55 PM
EPA METHOD 200.7: DISSOLVED METALS						Analyst: ELS
Calcium	820	10		mg/L	10	9/17/2018 5:32:27 PM
Magnesium	250	10		mg/L	10	9/17/2018 5:32:27 PM
Potassium	5.8	1.0		mg/L	1	9/17/2018 5:30:09 PM
Sodium	890	10		mg/L	10	9/17/2018 5:32:27 PM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: JRR
Conductivity	6600	5.0		µmhos/c	1	9/18/2018 2:58:56 PM
SM2320B: ALKALINITY						Analyst: JRR
Bicarbonate (As CaCO ₃)	204.6	20.00		mg/L Ca	1	9/18/2018 2:58:56 PM
Carbonate (As CaCO ₃)	ND	2.000		mg/L Ca	1	9/18/2018 2:58:56 PM
Total Alkalinity (as CaCO ₃)	204.6	20.00		mg/L Ca	1	9/18/2018 2:58:56 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: KS
Total Dissolved Solids	6160	100	*D	mg/L	1	9/20/2018 6:07:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	Page 2 of 8
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809749

03-Oct-18

Client: SWCA
Project: Faulk 7 SWD Permitting

Sample ID MB-A	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: A54193		RunNo: 54193							
Prep Date:	Analysis Date: 9/17/2018		SeqNo: 1792020		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID LLLCS-A	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: A54193		RunNo: 54193							
Prep Date:	Analysis Date: 9/17/2018		SeqNo: 1792022		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	104	50	150			
Magnesium	ND	1.0	0.5000	0	101	50	150			
Potassium	ND	1.0	0.5000	0	96.6	50	150			
Sodium	ND	1.0	0.5000	0	130	50	150			

Sample ID LCS-A	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: A54193		RunNo: 54193							
Prep Date:	Analysis Date: 9/17/2018		SeqNo: 1792024		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49	1.0	50.00	0	98.8	85	115			
Magnesium	50	1.0	50.00	0	99.3	85	115			
Potassium	49	1.0	50.00	0	98.2	85	115			
Sodium	50	1.0	50.00	0	100	85	115			

Sample ID MB-B	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: B54217		RunNo: 54217							
Prep Date:	Analysis Date: 9/18/2018		SeqNo: 1793942		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	ND	1.0								

Sample ID LLLCS-B	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B54217		RunNo: 54217							
Prep Date:	Analysis Date: 9/18/2018		SeqNo: 1793946		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	ND	1.0	0.5000	0	85.1	50	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809749

03-Oct-18

Client: SWCA
Project: Faulk 7 SWD Permitting

Sample ID	LCS-B	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	B54217	RunNo:	54217					
Prep Date:		Analysis Date:	9/18/2018	SeqNo:	1793947	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	48	1.0	50.00	0	96.0	85	115			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809749

03-Oct-18

Client: SWCA
Project: Faulk 7 SWD Permitting

Sample ID MB	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R54173		RunNo: 54173							
Prep Date:	Analysis Date: 9/13/2018		SeqNo: 1791002		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								

Sample ID LCS	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R54173		RunNo: 54173							
Prep Date:	Analysis Date: 9/13/2018		SeqNo: 1791003		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.56	0.10	0.5000	0	112	90	110			S
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	101	90	110			
Bromide	2.5	0.10	2.500	0	100	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	105	90	110			
Phosphorus, Orthophosphate (As P)	5.1	0.50	5.000	0	101	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R54419		RunNo: 54419							
Prep Date:	Analysis Date: 9/25/2018		SeqNo: 1803021		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R54419		RunNo: 54419							
Prep Date:	Analysis Date: 9/25/2018		SeqNo: 1803022		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.2	90	110			
Sulfate	9.3	0.50	10.00	0	93.3	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809749

03-Oct-18

Client: SWCA
Project: Faulk 7 SWD Permitting

Sample ID	Ics-1 98.6uS eC	SampType:	LCS	TestCode:	SM2510B: Specific Conductance					
Client ID:	LCSW	Batch ID:	R54265	RunNo:	54265					
Prep Date:		Analysis Date:	9/18/2018	SeqNo:	1795469	Units:	µmhos/cm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	5.0	98.30	0	103	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809749

03-Oct-18

Client: SWCA
Project: Faulk 7 SWD Permitting

Sample ID	mb-1 alk	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R54265	RunNo:	54265					
Prep Date:		Analysis Date:	9/18/2018	SeqNo:	1795420	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	ics-1 alk	SampType:	LCS	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R54265	RunNo:	54265					
Prep Date:		Analysis Date:	9/18/2018	SeqNo:	1795421	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	78.20	20.00	80.00	0	97.7	90	110			

Sample ID	mb-2 alk	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R54265	RunNo:	54265					
Prep Date:		Analysis Date:	9/18/2018	SeqNo:	1795444	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	ics-2 alk	SampType:	LCS	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R54265	RunNo:	54265					
Prep Date:		Analysis Date:	9/18/2018	SeqNo:	1795445	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	76.92	20.00	80.00	0	96.2	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809749

03-Oct-18

Client: SWCA
Project: Faulk 7 SWD Permitting

Sample ID	MB-40427	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	40427	RunNo:	54298					
Prep Date:	9/18/2018	Analysis Date:	9/20/2018	SeqNo:	1796602	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-40427	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	40427	RunNo:	54298					
Prep Date:	9/18/2018	Analysis Date:	9/20/2018	SeqNo:	1796603	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1000	20.0	1000	0	100	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| PQL Practical Quantitative Limit | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

Sample Log-In Check List

Client Name: SWCA

Work Order Number: 1809749

RcptNo: 1

Received By: Michelle Garcia 9/13/2018 9:05:00 AM

Michelle Garcia

Completed By: Ashley Gallegos 9/13/2018 12:35:59 PM

AG

Reviewed By: *mg 09/13/18*

Labeled by: *JAB 09/13/18*

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? FedEx

Log In

3. Was an attempt made to cool the samples? Yes No NA
 4. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 5. Sample(s) in proper container(s)? Yes No
 6. Sufficient sample volume for indicated test(s)? Yes No
 7. Are samples (except VOA and ONG) properly preserved? Yes No
 8. Was preservative added to bottles? Yes No NA
 9. VOA vials have zero headspace? Yes No No VOA Vials
 10. Were any sample containers received broken? Yes No
 11. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 12. Are matrices correctly identified on Chain of Custody? Yes No
 13. Is it clear what analyses were requested? Yes No
 14. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

of preserved bottles checked for pH: *4*
 (<2 or >12 unless noted)
 Adjusted? *No*
 Checked by: *JAB 09/13/18*

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	Lara Thompson	Date:	9/13/2018
By Whom:	Michelle Garcia	Via:	<input type="checkbox"/> eMail <input checked="" type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	Missing analysis request		
Client Instructions:	Run Cation/Anion Balance		

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.5	Good	Yes			

Chain-of-Custody Record

Client: SWCA Environmental Consult
 Attn: Lara Thompson
 Mailing Address: 5647 Jefferson St. NE
Albuquerque, NM
 Phone #: 505.254.1115
 email or Fax#:
 QA/QC Package:
 Standard Level 4 (Full Validation)
 Accreditation: Az Compliance
 NELAC Other _____
 EDD (Type) _____

Turn-Around Time:
 Standard Rush
 Project Name:
Faulk #7 SWD Permitting
 Project #:
51896
 Project Manager:
Lara Thompson
 Sampler:
 On Ice Yes No
 # of Coolers: 1
 Cooler Temp (including CF): D, 4, 0.402-05

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
9/12	9:35 am	DEM	C-112-01			001
9/12	9:37 am	DEM	L-112-02			
9/12	9:40 am	DEM	L-112-03			
9/12	9:00 am	IRR	C-03184-01			002
9/12	9:05 am	IRR	C-03184-02			
9/12	9:10 am	IRR	C-03184-03			

Container Type and #	Preservative Type	HEAL No.
		1809749

Analysis Request											
BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO ₃ , NO ₂ , PO ₄ , SO ₄	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	TDS	Cat/Amion Balance
										X	X
										X	X

Date: _____ Time: _____ Relinquished by: _____
 Date: _____ Time: _____ Relinquished by: _____

Received by: M. G. ... Via: _____ Date: _____ Time: _____
 Received by: _____ Via: _____ Date: _____ Time: _____

Remarks: Verified analytical with Lara Thompson
me 09/12/12



HALL ENVIRONMENTAL ANALYSIS LABORATORY
 www.hallenvironmental.com
 4901 Hawkins NE - Albuquerque, NM 87109
 Tel. 505-345-3975 Fax 505-345-4107

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

SECTION XII

Operator Affirmative Statement

Black River Water Management Company, LLC

One Lincoln Centre • 5400 LBJ Freeway • Suite 1500 • Dallas, Texas 75240

Voice 972.371.5454 • Fax 214.866.4832

ccollier@matadorresources.com

Clark Collier
Senior Geologist

September 7, 2018

New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
David.Catanach@state.nm.us

**Re: Geology Statement
Faulk SWD #7 (“the Well”)
Section 32, Township 22 South, Range 28 East, N.M.P.M.
Eddy County, New Mexico**

To whom it may concern:

Available geologic and engineering data related to the proposed Well has been thoroughly reviewed, and no evidence for a hydrological connection between the proposed deep Devonian injection zone, located at approximately 13,761’, and any underground sources of drinking water has been found.

Sincerely,
Black River Water Management
Company, LLC

Clark Collier



Section XIII
Proof of Notice

CARLSBAD
CURRENT-ARGUS

AFFIDAVIT OF PUBLICATION

**Ad No.
0001265059**

SWCA ENVIRONMENTAL CONSULTANTS
5647 JEFFERSON STREET NE

ALBUQUERQUE NM 87109

Legal Notice

Black River Water Management Company, LLC is seeking administrative approval from the New Mexico Oil Conservation Division to inject produced salt water into a new disposal well, Faulk SWD #7. The expected maximum injection rate is 45,000 bpd and the expected maximum pressure is 2,785 psi.

Faulk SWD #7 is located in Township 22S, Range 28E, Sec. 32, 161' FSL and 515' FEL, Eddy County, NM. The injection interval will be 13,786' to 14,611 TVD, in the Devonian formation.

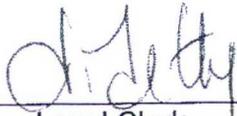
Affected parties were notified via certified letter. Addresses for parties listed below could not be located: Olen F. Featherstone and Robert J. Cerf.

Interested parties must file objections or requests for hearing with the New Mexico Oil Conservation Division, 1220 South Saint Francis Dr., Santa Fe, NM 87505 within 15 days. Additional information can be obtained by contacting Tara Flume of Black River Water Management Company, LLC at 5400 LBJ Freeway, Suite 1500, Dallas, Texas 75240 or by calling (972)-371-5203.

Pub: October 13, 2018 #1265059

I, a legal clerk of the **Carlsbad Current-Argus**, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

10/13/18



Legal Clerk

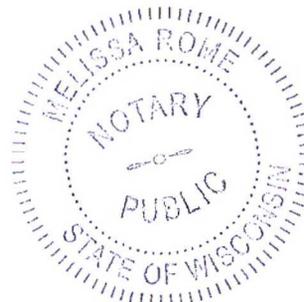
Subscribed and sworn before me this
15th of October 2018.



State of WI, County of Brown
NOTARY PUBLIC

1-12-2021

My Commission Expires



IN WITNESS WHEREOF, this Memorandum of Salt Water Disposal Well Lease Agreement is effective as of the Effective Date of the Lease.

LESSOR:

DAVID A. FAULK

By: David a. Faulk

VICKYE FAULK

By: Vickie Faulk

LESSEE:

BLACK RIVER WATER MANAGEMENT
COMPANY, LLC

By: Matthew D. Spicer MBV
Name: Matthew D. Spicer TTF
Title: Vice President

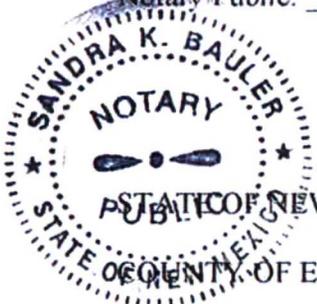
ACKNOWLEDGEMENT

STATE OF NEW MEXICO §
 §
COUNTY OF EDDY §

This instrument was acknowledged before me on this 31 day August 2018, by David A. Faulk.

My commission expires: June 28, 2020

Notary Public: Sandra K. Bauler

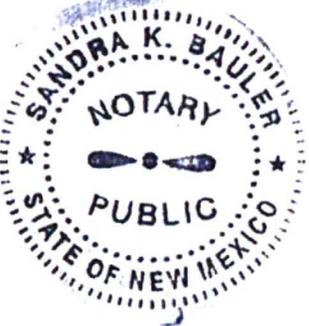


STATE OF NEW MEXICO §
 §
COUNTY OF EDDY §

This instrument was acknowledged before me on this 31 day August 2018, by Vickye Faulk.

My commission expires: June 28, 2020

Notary Public: Sandra K. Bauler



ACKNOWLEDGEMENT

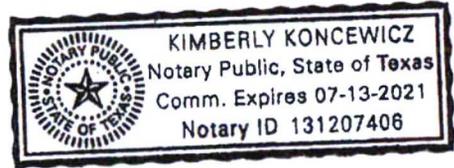
STATE OF TEXAS §
 §
COUNTY OF DALLAS §

Before me, a notary public, on this day personally appeared Matthew D. Spicer, known to me to be the person whose name is subscribed to the foregoing instrument, and known to me to be the Vice President of BLACK RIVER WATER MANAGEMENT COMPANY, LLC, a Texas limited liability company, and acknowledged to me that he executed on behalf of said limited liability company.

Given under my hand and seal of office this 13th day of SEPTEMBER, 2018.

My commission expires: 7/13/21

Notary Public: *Kim Koncewicz*



Black River Water Management Company, LLC
5400 LBJ Freeway, Suite 1500
Dallas, Texas 75240

October 10, 2018

VIA CERTIFIED RETURN RECEIPT

SUBJECT: APPLICATION FOR AUTHORIZATION TO INJECT INTO FAULK SWD #7

Dear Sir or Madam:

Black River Water Management Company, LLC is seeking administrative approval from the New Mexico Oil Conservation Division (NMOCD) to utilize a new vertical well Faulk SWD #7 to dispose of produced salt water into the Devonian formation. As required by NMOCD, you are receiving this package because you have been identified as having past or current interest in acreage near the vicinity of our proposed activity. No action is required unless you have questions or objections

The well is located in Section 32, Township 22S, Range 28E of Eddy County, NM at 161' FSL & 515' FEL. The proposed disposal zone will be between 13,786 and 14,611 feet total depth.

To submit comments or objections contact the State of New Mexico Oil Conservation Division Engineering Bureau at 1220 South St. Francis Drive, Santa Fe, NM 87505. A decision can be made 15 days after the application is submitted if no objections is received. If you have any questions regarding the enclosed application, Black River Water Management Company can be reached at the address above, (972) 371-5203 or info@sanmateomidstream.com.

Sincerely,

Tara Flume
Senior Midstream Counsel
Black River Water Management Company, LLC

Enclosures: List of Interested Parties

List Interested of Parties:

Marathon Oil Permian, LLC
5555 San Felipe Street
Houston, TX 79701

J.R. Rowan
PO Box 70907
Midland, TX 79708

Continental Land Resources, LLC
PO Box 2691
Roswell, NM 88201

Helen Joyce Hardgrave
6012 E. 114th
Tulsa, OK 74137

Ruth D. Roberts
c/o C. Daniel Roberts
PO Box 6368
Austin, TX 78762

Chalmers A. Loughridge
3901 Riva Drive
Alexandria, VA 22309

Sonja Lopez
1081 Gobbler Drive
Holladay, TN 38341

Tundra AD3, LP
2100 Ross Ave., Suite 1870
Dallas, TX 75201

Roy G. Barton, Jr. and Claudia R. Barton
1919 N. Turner St.
Hobbs, NM 88240

NOVO Minerals, LP
1001 West Wilshire Blvd, Suite 206
Oklahoma City, OK 73116

Novo Oil & Gas Northern Delaware, LLC
1001 West Wilshire Blvd, Suite 206
Oklahoma City, OK 73116

Roy G. Barton, Jr.
1919 N. Turner St.
Hobbs, NM 88240

Realeza Del Spear, LP
PO Box 1684
Midland, TX 79702

Chalfant, Magee & Hansen, Inc.
1201 First National Bank Bldg.
Midland, TX 79701

Finwing Corporation
508 West Wall St., Suite 1200
Midland, TX 79701

Orla Petco, Inc.
PO Box 1383
Midland, TX 79702

Cities Service Company
PO Box 300
Tulsa, OK 74102

Ed Phillips
PO Box 11313
Midland, TX 79702

Southwest Royalties, Inc.
PO Box 11390
Midland, TX 79702

Oxy USA Inc.
5 Greenway Plaza, Suite 110
Houston, TX 77046

Nadel and Gussman Permian, LLC
3300 1st Place Tower
15 E 5th St
Tulsa, Oklahoma 74103

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<input type="checkbox"/> Adult Signature Required	\$0.00
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Sent To: Helen Joyce Hardgrave
6012 E. 114th
Tulsa, OK 74137

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5555 San Felipe Street
Houston, TX 79701

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Alexandria, VA 22309

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3300 1st Place Tower
15 E 5th St
Tulsa, Oklahoma 74103

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Midland, TX 79702

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Roswell, NM 88201

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Dallas, TX 75201

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Hobbs, NM 88240

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1001 West Wilshire Blvd, Suite 206
Oklahoma City, OK 73116

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Midland, TX 79702

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 Holladay, TN 38341

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 c/o C. Daniel Roberts
 PO Box 6368
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