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)	(quar						IE 3=S	SW 4=SE) st) (NAD8	3 UTM in meters)		(In feet	)
POD Number:	POD Sub- Code basin C	County	-	Q 16	<u> </u>	Sec	: Tws	Rng	x		20000	Depth Water	Water Column
C 02273		LE	(Pere a Marine			- index of	26S		634549	3545134* 🔬	160	120	40
C 03577 POD1	CUB	LE	3	3	3	22	26S	33E	636010	3543771 🖓	750	110	640
C 03596 POD1	С	LE	3	3	4	22	26S	33E	636017	3543756	225		
										Average Depth t	o Water:	115 f	eet
										Minimur	n Depth:	110 f	eet
										Maximur	n Depth:	120 f	eet

#### PLSS Search:

Section(s): 20-26

Township: 26S

Range: 33E

\*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.

#### McMillan, Michael, EMNRD

From:		Kim Tyson <kimt@forl.com></kimt@forl.com>
Sent:		Thursday, March 12, 2015 12:22 PM
То:		McMillan, Michael, EMNRD
Subject:	•	RE: Quail Ridge SWD Well No. 1

Michael,

The correct surface location is 1050' FSL & 2330' FWL. The well name is the Quail "16" State SWD Well No. 9.

Let me know if you have anymore questions.

Thanks,

Kim Tyson

From: McMillan, Michael, EMNRD [mailto:Michael.McMillan@state.nm.us] Sent: Thursday, March 12, 2015 11:36 AM To: Kim Tyson Subject: Quail Ridge SWD Well No. 1

Ms. Tyson:

can you clarify the surface location for the Quail Ridge SWD Well No. 1, Sec. 16 T20S R34E? Your authorization to inject has 1050 FSL and 2330 FWL, your schematic has 1050 FSL and 2330 FEL.

Thank You

## Michael A. McMillan

Engineering and Geological Services Bureau, Oil Conservation Division 1220 South St. Francis Dr., Santa Fe NM 87505 O: 505.476.3448 F. 505.476.3462 <u>Michael.mcmillan@state.nm.us</u>

DATE IN	118/2014 SUSPENS	se engineer	12/18/2014 LOGGED IN	5 ud TYPE	PMAM1435260539
		ABOVE	THIS LINE FOR DIVISION USE ONLY		
	c h	NEW MEXICO OIL COM	, NSERVATION DI	VISION &	
20+	ven .		ng Bureau -	3	RECEIVED COR
х° ч	NE	1220 South St. Francis D	rive, Santa Fe, NM 8	7505	RECEIVED OCD
		ADMINISTRATIVE	APPLICATIO	ON CHEC	KLIST <sup>344 DEC 18</sup> P <u>3</u> : 18
Т	THIS CHECKLIST IS M		/E APPLICATIONS FOR EX SSING AT THE DIVISION L		
Appli	cation Acronyms		SSING AT THE DIVISION L	EVEL IN SANTA FE	-
	-	ndard Location] [NSP-Non-Si			
	—	nhole Commingling] [CTB- ol Commingling] [OLS - Of			
	_	[WFX-Waterflood Expansion]			
		[SWD-Salt Water Dispos	•		-
	[EOR-Qual	lified Enhanced Oil Recovery	Certification] [PP		
[1]	TYPE OF AP	PLICATION - Check Those	Which Apply for [A]		
	[A]	Location - Spacing Unit - Si		on -FA	Asken Oiland RAnch, LTC
		NSL NSP	SD ·		151416
	Check	One Only for [B] or [C]			441
	[B]	Commingling - Storage - M	easurement		- Quail "16"state
		🗌 DHC 🗌 СТВ 🗌	PLC 🗌 PC 🗌	OLS 🗌	OLM Suo#9
	[C]	Injection - Disposal - Pressu	re Increase - Enhance		
		$\square$ WFX $\square$ PMX $\square$			PPR
					Poul
	[D]	Other: Specify			Swis; DevoniAn
[2]	NOTIFICAT	ION REQUIRED TO: - Che	ck Those Which Ann	lv or 🗆 Does N	<b>.</b> .
[~] ,	[A]	Working, Royalty or O	• •	• ·	
	[B]	Offset Operators, Lease	eholders or Surface C	wner	
	[C]	Application is One Wh	ich Requires Publish	ed Legal Notic	e `
	l-J.				
•	[D]	Notification and/or Cor U.S. Bureau of Land Management -	ncurrent Approval by	BLM or SLO	
		_			Attached and/or
	[E]	$\boxtimes$ For all of the above, Pr		rudification is	Attached, and/or,
	(F)	Waivers are Attached			
[2]			E INFORMATION	DECURPS	
[3]		CURATE AND COMPLET		REQUIRED	I U PROCESS THE TYPE
	OF AFFLICA	ATION INDICATED ADOV	L.		

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[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.

Kim Tyson	12m Jum		12-15-2014
Print or Type Name	Signature J.	Title	Date
		kimt@forl.com	

e-mail Address

* STATÉ OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

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

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#### **APPLICATION FOR AUTHORIZATION TO INJECT**

I.	PURPOSE:       Secondary Recovery       Pressure Maintenance       X C Disposal D OCD       Storage         Application qualifies for administrative approval?       X Yes       No       D D D D       Storage
H.	OPERATOR: Fasken Oil and Ranch, Ltd. 2014 CEC 10 P 3: 18
	ADDRESS: 6101 Holiday Hill Road, Midland, TX 79707
	CONTACT PARTY: Kim Tyson PHONE: 432-687-1777
III.	WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
IV.	Is this an expansion of an existing project? Yes X No If yes, give the Division order number authorizing the project:
V.	Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
VI.	Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
VII.	Attach data on the proposed operation, including:
X	<ol> <li>Proposed average and maximum daily rate and volume of fluids to be injected;</li> <li>Whether the system is open or closed;</li> <li>Proposed average and maximum injection pressure;</li> <li>Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,</li> <li>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.).</li> </ol>
*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: Kim Tyson TITLE: <u>Regulatory Analyst</u>
	NAME:       Kim Tyson       TITLE:       Regulatory Analyst         SIGNATURE:       DATE:       12-15-2014
*	E-MAIL ADDRESS: <u>kimt@forl.com</u> 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:

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Side 2

#### III. WELL DATA

- A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:
  - (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
  - (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
  - (3) A description of the tubing to be used including its size, lining material, and setting depth.

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

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

- B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.
  - (1) The name of the injection formation and, if applicable, the field or pool name.
  - (2) The injection interval and whether it is perforated or open-hole.
  - (3) State if the well was drilled for injection or, if not, the original purpose of the well.
  - (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
  - (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

#### XIV. PROOF OF NOTICE

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

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

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,

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

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

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.



- III. Well Data
  - A) Tabular Well Data
    - 1. Quail "16" State SWD No. 9 Surface: 1050' FSL & 2330' FWL Bottom Hole: 1050' FSL & 2330' FWL Sec. 16, Unit Letter N, T-20-S, R-34-E
    - 2. <u>Surface Casing:</u> 13-3/8" 48#/ft H-40 @ 1650', cemented with 1351 sx Class 'C', TOC at surface.

Intermediate Casing: 9-5/8" 40# HCK-55 @ 5200'. Cemented to surface (circulated cement) w/ 2350 sx Class 'C' in two stages. DV tool @ 3700'.

Production Casing: 7" 29#/ft L-80 & HCL-80 @ 14,500'. Cemented with 1350 sx Class 'H', TOC at Surface.

- 3. 4-1/2" 12.75#/ft EUE 8rd L-80 IPC tubing at 14410'.
- 4. Packer Type nickel plated Arrowset 1X 10K casing packer IPC wetted parts with on/off tool. Packer will be set at 14,410'.
- B) Proposed Injection Formation Data
  - 1. Injection Formation Name: Devonian
  - 2. Injection Interval 14,500' to 16,500' Open Hole
  - 3. Original Purpose of Well Devonian SWD.
  - 4. None well to be drilled.
  - Next Higher Oil/Gas Productive Zone Lower Morrow @ 13,438 Next Lower Oil/Gas Productive Zone – unknown
- VII. Proposed Operation

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- Average Daily Rate 20,000 BPD Maximum Daily Rate – 30,000 BPD
- 2. This will be a closed system.
- Average Injection Pressure 2000 psi Maximum Injection Pressure –2900 psi

- 4. Produced water from the Atoka, Bone Springs, Delaware, Morrow, Strawn, and Wolfcamp formations will be injected into the Devonian interval. Representative water analyses are attached for the Bone Spring, Delaware, Morrow and Wolfcamp along with calculated compatibility analyses for various mixtures. Calcium sulfate precipitation is unlikely. Calcium carbonate precipitation is less likely in all cases when compared to the existing Devonian water at bottom hole conditions. About 90-100% of the water injected will be Bone Springs. Other prospective zone water samples are unavailable due to the lack of wells producing from these formations in this area at this time.
- 5. See attached Devonian chemical analysis.
- VIII. Geologic Data

1.	Estimated	Formation	Tops
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Formation Name	Measured Depth (ft.)	
Rustler	1583'	
Yates	3606'	- 0
Capitan Reef	3956'	)- Key
Bell Canyon	5332'	
Cherry Canyon	6178'	j
Brushy Canyon	7135'	
Bone Spring	8355'	]
Wolfcamp	11,308'	j
Strawn	12,153'	]
Atoka	12,544'	
Morrow	12,731'	
Lower Morrow	13,438	
Devonian	14,500'	
Base of Devonian	16,500'	

2. Injection Zone Lithology

The estimated injection interval of 14,500' - 16,500' is in the Devonian formation. The lithology primarily consists of dolomite and limestone.

3. There are two fresh water zones in the area. The base of the uppermost zone the Ogallala formation is at 135'. This information was verified by Paul Kautz with the OCD. The lowermost zone is the Santa Rosa Sand. Top is approximately 600' above the Rustler Anhydrite (T/Rustler estimated at 983' this location) and the base is approximately 300 to 450' above the Rustler Anhydrite. These water bearing formations will be sealed off from the wellbore with 1650' of 13 3/8" 48# / ft H-40 surface casing cemented to the surface, and 5200' of 9 5/8" 40# / ft HCK-55 casing cemented to surface. The 9-5/8" 40#/ft HCK-55 intermediate string will be run to 5200' and cemented in two stages, circulating

cement to the surface through a DV tool at 3700'. This provides 2 strings of casing and cement covering the fresh water sands.

IX. Stimulation Program

This interval will be acidized with 15% NEFE HCL acid.

X. Logging and Test Data

Logs and test data will be made available once the well is drilled.

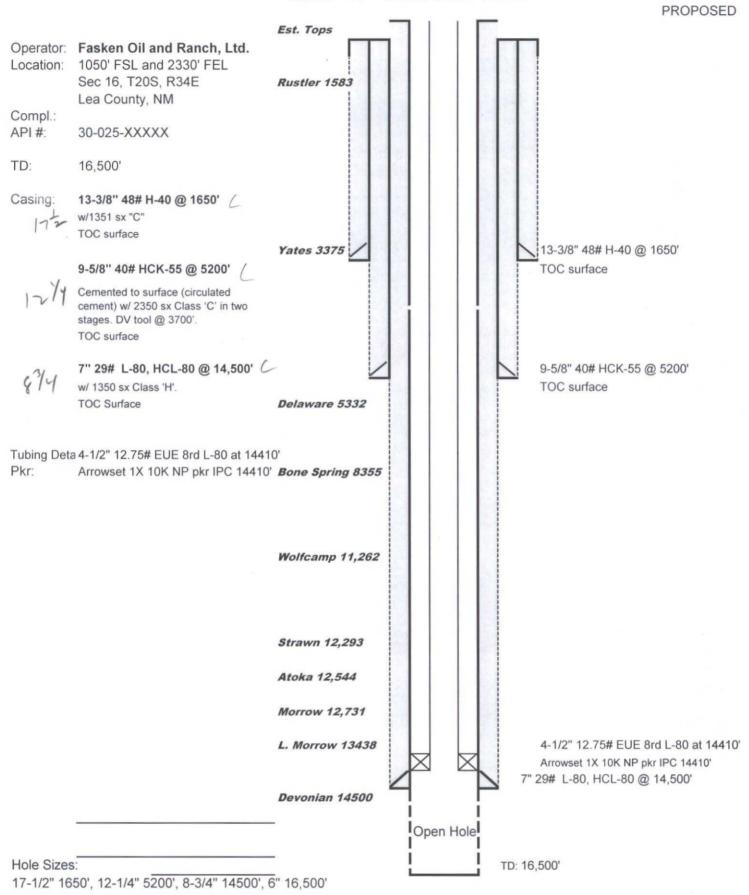
XI. Affirmative Statement

Upon examination of the available geologic and engineering data, no evidence of open faults or any other hydraulic connection between the disposal zones and an underground source of drinking water was found.

Bryden, Sr. Geologist

Quail "16" State SWD No. 9

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cf/jdrb/cwb 2-13-14 Copy of Quail16StSWD9 wb diagram

#### **INJECTION WELL DATA SHEET** Side 1 OPERATOR: Fasken Oil and Ranch, Ltd. WELL NAME & NUMBER: Quail "16" State SWD No. 9 WELL LOCATION: 1050' FSL & 2330' FWL N 16 20S 34E FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGE WELL CONSTRUCTION DATA WELLBORE SCHEMATIC Surface Casing Hole Size: $17 \frac{1}{2}$ Casing Size: $13 \frac{3}{8}, 48 \# (@, 1650)$ Cemented with: 1351 sx. or $ft^3$ Top of Cement: Surface Method Determined: Circulated Intermediate Casing 9 5/8", 40# @ 5200" Hole Size: $12 \frac{1}{4}$ Casing Size: w/ DV Tool @ 3700' Cemented with: <u>2350</u> sx. or ft<sup>3</sup> Top of Cement: Surface Method Determined: Circulated **Production Casing** Hole Size: 8 <sup>3</sup>/<sub>4</sub>" Casing Size: 7", 29#, @ 14.500" or ft<sup>3</sup> Cemented with: <u>1350</u> sx. Top of Cement: Surface Method Determined: Circulated Total Depth: 16,500' Injection Interval 16,500' 14.500' feet to (Perforated or Open Hole; indicate which)

## **INJECTION WELL DATA SHEET**

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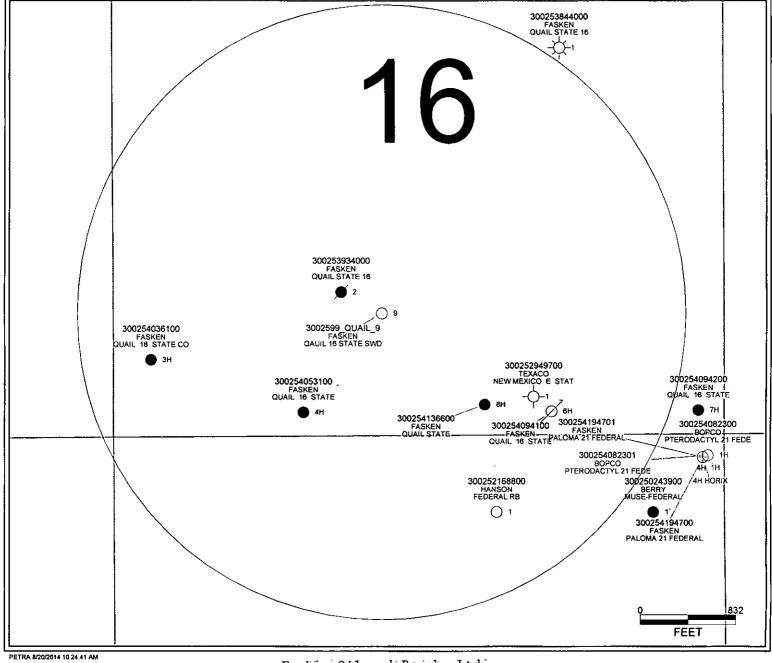
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Tu	bing Size: <u>4 <sup>1</sup>/2</u> Lining Material: <u>Internally Plastic Coated</u>
Ty	pe of Packer: <u>Nickel plated Arrowset 1-X 10K casing packer IPC wetted parts with on / off_tool</u>
Pac	cker Setting Depth: <u>14,410'</u>
Otl	her Type of Tubing/Casing Seal (if applicable): <u>N/A</u>
	<u>Additional Data</u>
1.	Is this a new well drilled for injection? <u>X</u> Yes No
	If no, for what purpose was the well originally drilled?
2.	Name of the Injection Formation:Devonian
3.	Name of Field or Pool (if applicable): <u>SWD; Devonain</u>
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. <u>No</u>
5.	Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: $\therefore$ Lower Morrow – 13,438' – 13,499'

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Fasken 011 and Ranch, Ltd. Quail "16" State SWD No. 9 1050' FSL & 2330' FWL Sec. 16, T20S, R34E] Lea County

## Fasken Oil and Ranch, Ltd.

## Quail "16" State SWD No. 9

## Table of Well Data within <sup>1</sup>/<sub>2</sub> Mile

<u>Operator</u>	Well Name and Number	<u>API Number</u>	Oil or <u>Gas</u>	Spud Date	Total <u>Depth</u>	Formation and Perfs			
Fasken Oil and Ranch, Ltd.	Quail "16" State No. 3H	30-025-40361	Oil	04/19/2012	14,988' MD 10,957' TVD	Bone Spring 12,426' – 14,930'			
Location:	SHL – 660' FSL & 300' FWL BHL – 380' FNL & 380' FWL Sec. 16, T20S, R34E								
Casing:	Well does not penetrate the proposed injection interval.								
Fasken Oil and Ranch, Ltd.	Quail "16" State No. 4H	30-025-40531	Oil	12/20/2012	15,605' MD 10,493' TVD	Bone Spring 11,221' – 15,530'			
Location:	SHL - 200' FSL & 1650' FWL BHL – 336' FNL & 1601' FWL Sec. 16, T20S, R34E								
Casing:	Well does not penetrate	the proposed injectio	n interval.						

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<u>Operator</u>	Well Name and Number	<u>API Number</u>	Oil or <u>Gas</u>	Spud <u>Date</u>	Total <u>Depth</u>	Formation and Perfs		
Fasken Oil and Ranch, Ltd.	Quail "16" State Com No. 8H	30-025-41366	Oil	09/03/2013		Bone Spring 11,276' – 15,364'		
Location:	SHL - 262' FSL & 2080 BHL – 321' FNL & 2111 Sec. 16, T20S, R34E							
Casing:	Well does not penetrate the proposed injection interval.							
Fasken Oil and Ranch, Ltd.	Quail "16" State No. 6H	30-025-40941	Dry Hole	06/30/2013	8459'	N/A		
Location:	SHL - 250' FSL & 1500 BHL – 250' FSL & 170 Sec. 16, T20S, R34E							
Casing:	Well does not penetrate	the proposed injection	interval.					
Fasken Oil and Ranch, Ltd.	Quail "16" State No. 2	30-025-39340	SWD Well	05/01/2010	13,600'	Lower Middle Morrow 13,520' – 13,533' CIBP @ 13,500 w/ 35 sx		
Location:	1230' FSL & 1980' FEL Sec. 16, T20S, R34E					13,296' – 13,321' CIBP @ 12,800' Delaware		
Casing:	Well does not penetrate th	e proposed injection in	nterval.			5332' – 8105'		

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<b>Operator</b>		Well Name <u>and Number</u>	<u>API Number</u>	Oil or <u>Gas</u>	Spud <u>Date</u>	Total <u>Depth</u>	Formation <u>and Perfs</u>
Texaco, Inc.		New Mexico E State NCT – 3 No. 1	30-025-29497	Dry Hole	02/16/1986	3650'	N/A
Location:		FSL & 1655' FEL 16, T20S, R34E					
Casing:	Well	does not penetrate the	proposed injection i	nterval.			
Xeric Oil and Corporation	Gas	Federal RB No. 1	30-025-21688	Plugged Oil Well	12/20/1965	3742'	Yates 3523' – 3560'
		NL & 1980' FEL 1, T20S, R34E					
Casing:	Well d	loes not penetrate the p	roposed injection int	erval.			

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#### Fasken Oil and Ranch, Ltd. Quail "16" State SWD No. 9 SWD Application List of Notified Parties

#### Offset Operators and Leasehold Owners within a 1/2 mile radius

Fasken Oil and Ranch, Ltd. 6101 Holiday Hill Road Midland, TX 79707

Attn: Mr. Greg Fulfer Fulfer Oil & Cattle Company, LLC P.O. Box 1224 Jal, NM 88252

Attn: Kelly Bass Chevron U.S.A. Inc. 1400 Smith Street Houston, TX 77002

Geronimo Holding Corporation 1801 W. Texas Midland, TX 79701

Attn: Monty Montgomery CTV O&G NM, L.L.C. 201 Main St., Suite 2900 Fort Worth, TX 76102

Attn: Monty Montgomery SRBI O&G NM, L.L.C. 201 Main St., Suite 2900 Fort Worth, TX 76102

Attn: Monty Montgomery Thru Line O&G NM, L.L.C. 201 Main St., Suite 2900 Fort Worth, TX 76102

Attn: Monty Montgomery Keystone O&G NM, L.L.C. 201 Main St., Suite 2900 Fort Worth, TX 76102 Attn: Monty Montgomery LMBI O&G NM, L.L.C. 201 Main St., Suite 2900 Fort Worth, TX 76102

Oxy USA WTP Limited Partnership 6 Desta Dr. Suite 6000 Midland, TX 79705

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Doyle Hartman P.O. Box 10426 Midland, TX 79702

James A. Davidson c/o Doyle Hartman P.O. Box 10426 Midland, TX 79702

Larry A. Nermyr 302 One O One Road Sidney, MT 59270

John E. Hendrix Corporation P.O. Box 3040 Midland, TX 79702

Ronnie H. Westbrook 6704 Pebble Ct. Midland, TX 79707

Michael L. Klein 600 N. Marienfeld, Suite 906 Midland, TX 79701

James E. Burr P.O. Box 8050 Midland, TX 79708 Ruth Sutton 2826 Moss Ave. Midland, TX 79705

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#### **Surface Owner**

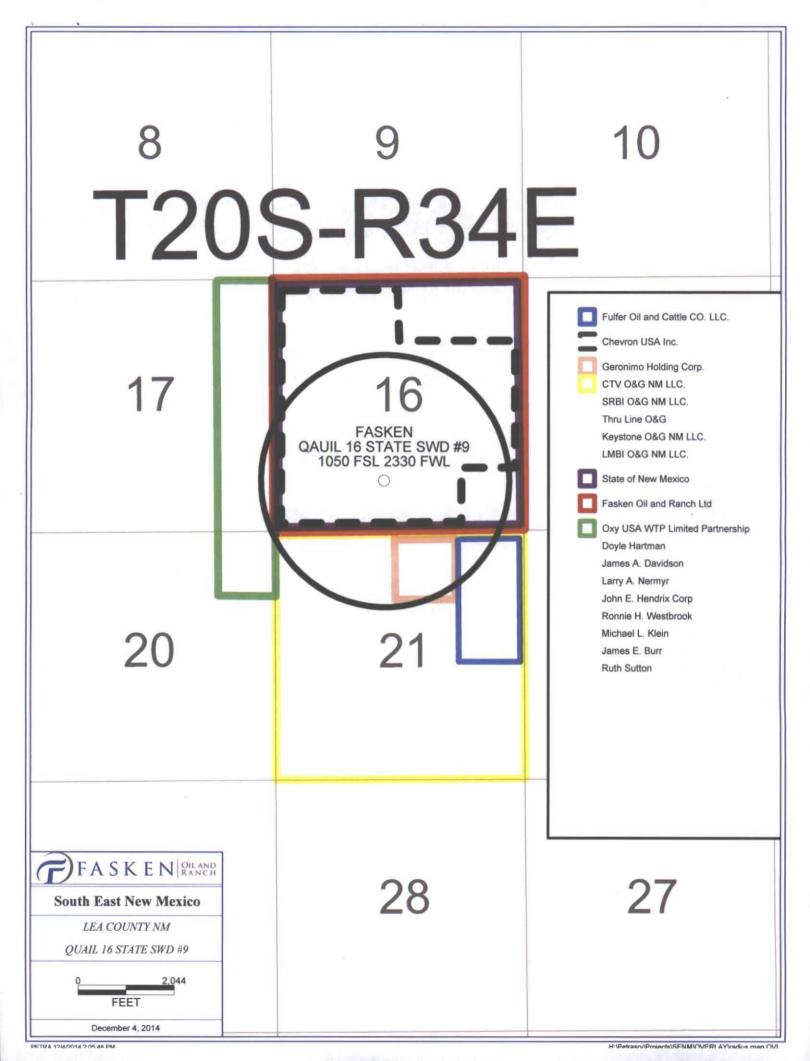
State of New Mexico State Land Office 310 Old Santa Fe Trail Santa Fe, NM 87501

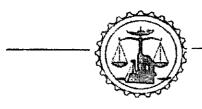
#### **Other Notified Parties**

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New Mexico Oil Conservation Division 1625 N. French Dr. Hobbs, NM 88240





## Martin Water Laboratories, Inc.

Analysts & Consultants since 1953 Bacterial & Chemical Analysis

To: Clay Lamb 6101 Holiday Hill Road Midland, TX 79707

Company: Fasken Oil & Ranch County: Lea, NM Laboratory No.0713-539Sample Received7-29-13Results Reported7-29-13

Clay Lamb:

Using the submitted analyses of Bone Springs (CESI Chemical Analysis), Wolfcamp (Endura Analysis), Morrow (Halliburton Analysis), and Delaware (Halliburton Analysis), I have hypothetically combined them in various proportions and attempted to determine the potential for scale and/or precipitation to occur with the mixtures. None of the combinations would likely result in barium sulfate scale, but I have to assume no barium to be present in the Delaware and Morrow samples (barium was not tested for). An equal combination shows no supersaturation to calcium sulfate and therefore no significant gypsum would be expected. Due to insufficient information provided by these analyses, I am unable to determine an accurate calcium carbonate scale potential or iron sulfide precipitation at this time. However, the low bicarbonate and pH levels suggest low carbonate tendencies.

In summary of the above, and based only on the information provided by these analyses, these waters appear to be compatible when combined.

Greg Ogden, B.S.



1004 S. Plainsman Road Marlow, OK 73055 Ph.: 800- 256-4703 Fx.: (580)-658-3223

FS-0032-0213 Test: 2/1/2013 Date:

Company: Submitted By: Depth: Location:	Cudd Pumping- Bill Ford Leigh County, N		Well Name: Formation: Bonesprii Source:	ng Shale	
			Date Taken:		
THE SAMPLE (	CONTAINED:		ANALYSIS OF WATE	R	
WATER		% by Vol.	CALCIUM	5,727	mg/L
OIL		% by Vol.	MAGNESIUM	1,093	mg/L
SOLIDS		% by Vol.	BARIUM	0	mg/L
EMULSION		% by Vol.	IRON <sup>2</sup>	17	mg/L
			POTASSIUM		mg/L
ANALYSIS OF	<u>OIL:</u>		CHLORIDES	89,000	mg/L
			BICARBONATES	153	mg/L
BS&W		% by Wt.	CARBONATES		mg/L
API Gr.		° @ 60 °F	HYDROXIDES		mg/L
PARAFFIN		% by Wt.	SULFATES	275	mg/L
ASPHALTENES	5	% by Wt.	SODIUM (Calc.)	44,933	mg/L
CLOUD POINT		°F	TDS (Calc.)	137,770	mg/L

ANALYSIS OF SOLIDS:

I/L /L /L /L /L 137,770 mg/L IODIDES (Qual.) 6.37 1.0961 0.070 Ohm-Meters **TEMPERATURE** 70 ° F

#### COMMENTS:

POUR POINT

The sodium and TDS are calculated using the French Creek DownHole SAT.

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Rw

Sp. Gr.

Respectfully submitted,

Shenny Daskins

°F

Name Title

Sherry Gaskins Chemist

NOTICE: This report is for information only and the content is limited to the sample described. CESI Chemical makes no warranties, express or implied, as to the accuracy of the contents or results. Any user of this report agrees CESI Chemical shall not be liable for any loss or damage, regardless of cause, including any act or omission of CESI Chemical, resulting from the use thereof.

		WATER ANALYSIS		No. W83-078
To <u>David Fasken</u>			Date	<u>1</u> 2083
Midland, Texas	al Bank Building	it nor any or disclose of laborat course of and emple	part thereof d without firs ory managem regular busine	erty of Halliburton Company and neither nor a copy thereof is to be published st securing the express written approva ent; it may however, be used in the iss operations by any person or concern receiving such report from Halliburtor
Submitted by			. Date Rec	1-20-83
Well No. Ling Feder	al #1 Depth6,236*	<u> </u>	_ Formation	Delaware
CountyLea	FieldW. Hob	bs	_Source	DST #1.
	Sampler	<u>Tool Top</u>		Top of Fluid
Resistivity	0.167 @ 70°F.	0.168 @ 70°F	•	0.220 @ 60°F.
Specific Gravity	1.035			<u> </u>
pH	7.9			
Calcium (Ca)	3,200	· ····································	·	*MPL
Magnesium (Mg)	150	n		
Chlorides (Cl)	25,000	24,000		18,500
Sulfates (SO4)	3,300			
Bicarbonates (HCO <sub>3</sub> )	120			
Soluble Iron (Fe)	Nil	•		
		· · · · · · · · · · · · · · · · · · ·		
Pit Sample -	Res. @ 70°F 0.247	Chlorides, m	<u>p1 - 15</u> ,	000
Remarks:				*Milligrams per liter
	Respectful	ly submitted,		
Analyst:Brewer	· · · · · · · · · · · · · · · · · · ·	н		N COMPANY
CC:		ву_Ш. с	Х.	Brewer
	N C	DTICE	- Crit	

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1948 A	HALE M	DIVISION LABORAT UBURTON BERVICES IDLAND DIVISION NEW MEDICO 88240	APR 10 1939 Grant and
	LABORATO	RY WATER ANALYSIS	No. 062
To Barbara Fasken	·		Date4-4-89
303 West Wall Ave	Suite 1901		in is the property of Hallburton Company and neither y part thereof nor a copy thereof is to be published
Midland TX 79701	:	or disclo of labora course of	ted without first securing the express written approvi tory management; it may however, be used in th regular business operations by any person or concer- loyees thereof receiving such report from Halliburb
Submitted by			_ Date Rec
	Depth		
			_ Source
			· · · · · · · · · · · · · · · · · · ·
Resistivity	0.070.0.700		
Specific Gravity		1.010	
рН		6,6	
Calcium (Ca)		1,800	*MP
Magnesium (Mg)		Nil	
Chlorides (Cl)		9,000	
Sulfates (SO <sub>4</sub> )		Light	
Bicarbonates (HCO <sub>3</sub> )		80	
Soluble Iron (Fe)	Heavy	Nil	
	1	<u>, 370</u>	
· · · · · · · · · · · · · · · · · · ·	····		
Remarks:			*Milligrams per liter
	•	-	
	Respe	ctfully submitted,	
Anolyst:Jay Bradfo	ord	+	IALLIBURTON COMPANY
<b>CE:</b>	<i>,</i>	Ву	
		NOTICE	CHEMIST

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# Endura Products Corporation P.O. Box 3394, Midland, Texas 79702

Phone (432) 684-4233 Fax (432) 684-4277

#### WATER ANALYSIS

D ( 10/2				
		a Rep Norman Smiley		10114034
	Date well head 9.			New Mexico
	ken Oil and Ranc	h	County	
Formation		Lease Ling Federal	Well	
			Wolf	camp Water
DISSOLVED	<u>Solids</u>			
<u>CATIONS</u>		mg/l	me/l	
Sodium, Na+ (Ca	ılc.)	24,127	1,049	
Total Hardness a		5,272	0	
Calcium Ca++		5,176	259	
Magnesium, Mg+		59	5	
Barium, Ba++		0	0	
Iron (Total) Fe+-	<del>-+</del> *	21	1	
ANIONS				
Chlorides, Cl-		46,550	1,311	
Sulfate, SO4-	,	96	2	
Carbonate, CO3-		0	0	
Bicarbonates, HC	CO3-	49	1	
Sulfide, S-*		0	0	
Total Dissolved S	Solid	76,078		
OTHER PROP	ERTIES			
pH*		6.470		
Specific Gravity,	60/60 F.	1.076		
Turbidity		266		
		SCALING INDICIES	Ś	
<u>TEMP, F</u>	<u>CA CO3</u>	<u>CASO4*2H2O</u>	<u>CA SO4</u>	BA SO4
80	-0.9152	-1.2275	-1.4135	-29.0795
120	-0.6052	-1.2350	-1.2405	-29.3083

-1.2274

-1.0602

-29.5321

#### **PERFORATIONS**

160

-0.1294

## Affidavit of Publication

STATE OF NEW MEXICO COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

> Beginning with the issue dated December 09, 2014 and ending with the issue dated December 09, 2014.

Publisher

Sworn and subscribed to before me this 9th day of December 2014.

**Business Manager** 

My commission expires January 29, 2015 (Seal) -



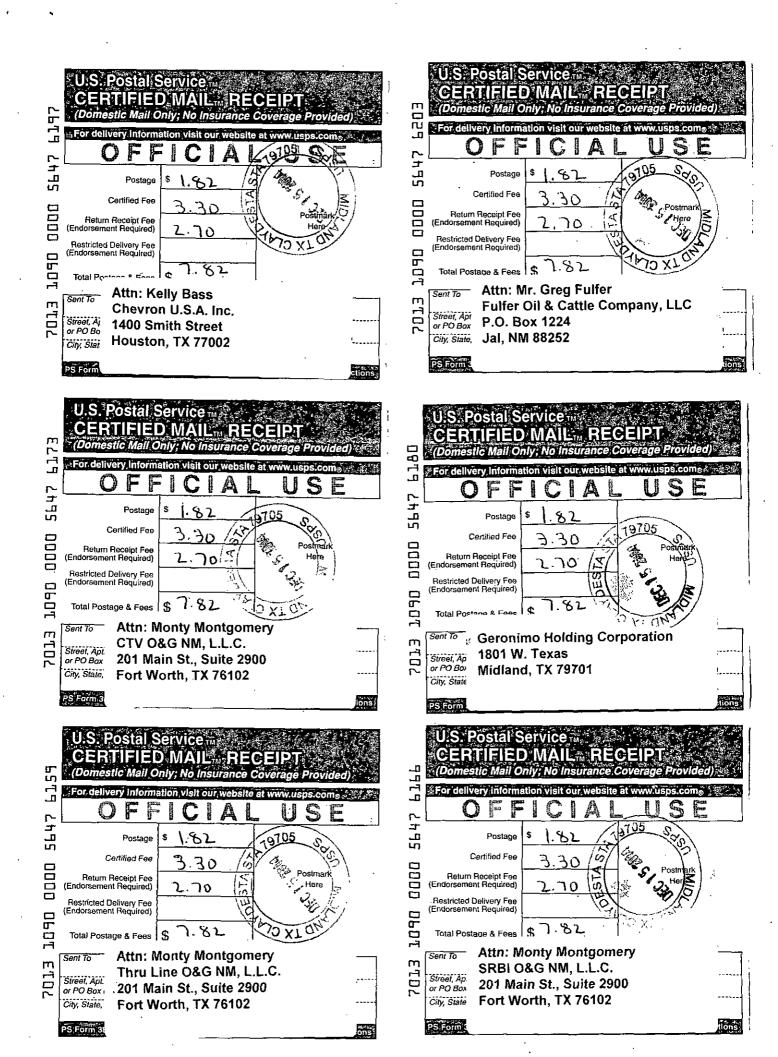
This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

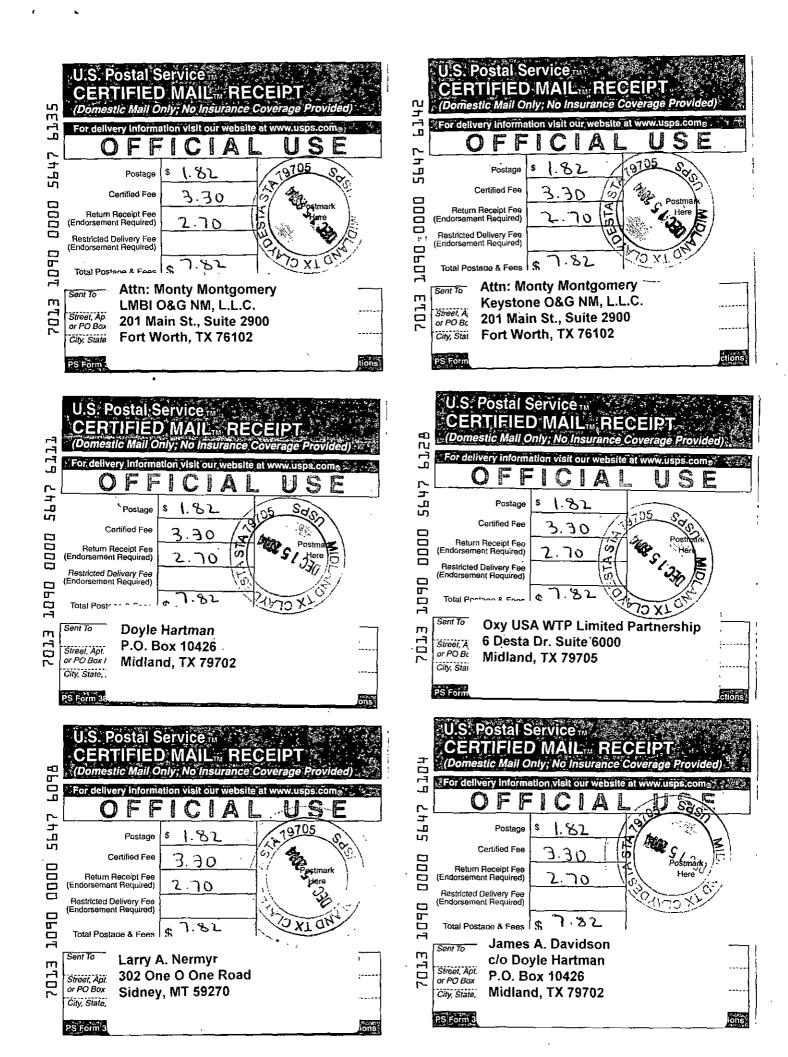
LEGAL NOTICE December 9, 2014 Fasken Oil and Ranch, Ltd." 6101 Holiday Hill-Road Midland, Texas 79707, jis filling Form C-108 (Application for Authorization (Application for Authorization, to Inject) with the New, Mexico (Oil Conservation Division, seeking administrative approval for a administrative approval for a. SWD; well, in: the SWD; Devonian pool, The proposed well; Quait 16\* State SWD No: 9, is located 1050\*FSL(\*2330; FWL Section 16, T20S, 'R34E1 Lea County, New Mexico Injection, water will, be sourced, from screatwells. sourced from area wells pressure of 2900 psi and a maximum rate of 30,000 BWPD: Any interested party who has an objection to this who has an objection to this application must give inoticat in ' wilting ' to the ' Oil Conservation Division' 1220 South Saint Francis Street, Santa Fe, New Mexico 87505, within fifteen (15) days of this notice ' Any interested party with duestions or comments may contact (Kim Tryson at Fasken Oil and Ranch Ltd Hoilday Hill Road. Ь. 6101 Holiday Hill Road Midland Texas 79707 for call\*(432)\687-1777 #29624 \* '

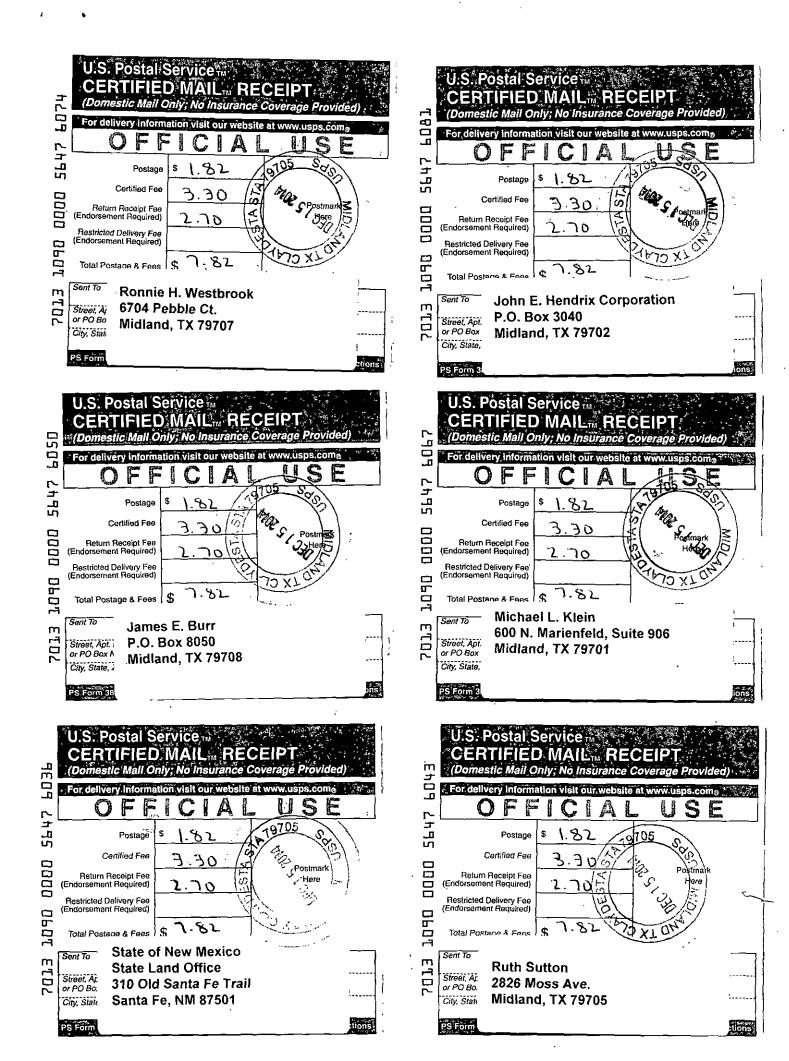
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00148765

KIM TYSON FASKEN OIL AND RANCH, LTD 6101 HOLIDAY HILL ROAD MIDLAND, TX 79707









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C-108 Review		eceived 1537 1537 umber: 1535 Perr	est:	Reply Date:	Suspended: [Ver 13
				Logady i om	
Well No. 9 Well Name	-				
91:30-0 <u>25-Pendia</u> 1050FSL	5 Spud Dat	te: 78)	New or Old:	₩ (UIC Class II	Primacy 03/07/1982)
ootages 2330FWL	Lot	or Unit <u>N</u> Sec _/C	• Tsp 20	DS Rge 34	S County Leg
eneral Location: <u>そをいう。</u> M 100K Map: <u> </u>	=s acsti Fa	HALFINAL Pool:	5 <u>6 D</u> ' <u>5</u> D	evoniAN	Pool No.: 96101
.М 100К Мар: <u>Но Ю Ю 5</u>	_ Operator: _ 스 너	& RAALL, L TE	OGRID	: <u>15/4/6</u> Conta	ct: Tyson
OMPLIANCE RULE 5.9: Total Wel	lls: <u>14</u> 2 inactiv	/e: Fincl Assur:	Y Compl.		
ELL FILE REVIEWED O Current	i Status: <u>MA-</u>	-NO API			· · · · · · · · · · · · · · · · · · ·
ELL DIAGRAMS: NEW: Proposed		Before Conv. After (		oos in Imaging:	
				- <u></u>	
anned Rehab Work to Well:					
Well Construction Details:	Borehole / Pipe	Setting Depths (ft)	DV	Cement Sx or Cf	, Cement Top and Determination Method
Planned _or Existing _Surface		1650	Stage Tool	1351	SurFace
Planned_or Existing _ Interm/Prod		5200	407	2350	Suppore
Planned_or ExistingInterm/Prod		14500		1350	Support
Planned_or Existing _ Prod/Line:			4410		
Planned_or Existing _ Liner		1274475 here	<b>*</b>	100	
Planned_or Existing OHPERF	14500 1654	·	In Length	Completion	VOperation Details:
Injection Stratigraphic Units:	Depths (ft)	Injection or Confining	Tops	Drilled TD /65	00 PBTD
Adjacent Unit: Litho. Struc. Por.		Units			NEW PBTD
Confining Unit: Litho. Struc. Por.				NEW Open Hole 🥊	or NEW Perfs
Proposed Inj Interval TOP:	14500				in. Inter Coated? Y
Proposed Inj Interval BOTTOM:	16500			•	Depth 14410 ft
Confining Unit: Litho. Struc. Por.	e de la companya de l	·····			13502 (100-ft limit)
Adjacent Unit: Litho. Struc. Por.			~~~***********************************		face Press. 2900psi
AOR: Hydrologic	1	18 - 97 - WERE CONTRACTOR OF THE CONTRACTOR	CTAL CONTRACTOR STOCKED		2.400 (0.2 psi per ft)
OTASH: R-111-P () Noticed? RESH WATER: Aquifer			1	•	
MOSE Basin: CApitan	_ CAPITAN REEF:		No. Wells w	ithin 1-Mile Radius	FW Analysis
Pisposal Fluid: Formation Source	SONE SI	C. Straw Analysi	s? V	On Lease @ Aperal	or Only () or Commercial 🔍
Disposal Int: Inject Rate (Avg/Max	PM(PD): 0 00 / 7 /				
	· · ·				
IC Potential: Producing Interval?_ OR Wells: 1/2-M Radius Map?		Ì		1 '	
enetrating Wells: No. Active We	<b>*</b>				Diagrams?
enetrating Wells: No. P&A Wells	i i				Diagrams?
OTICE: Newspaper Date	4-1014 Mineral	Owner km SLO	Surface C	wner <b>hu</b> m < d	N. Date /2-15-20
ULE 26.7(A): Identified Tracts?	,	. 7	644041	while Do	YIE HANTIMAN
	<u> </u>	05.2			

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