Initial

Application Part I

Received: 04/15/2019

This application is placed in file for record. It MAY or MAY NOT have been reviewed to be determined Administratively Complete

TYPE: RECEIVED REVIEWER. APP NO: 115/2019 SUL MAMIGI NEW MEXICO OIL CONSERVATION DIVISION Geological & Engineering Bureau – 1220 South St. Francis Drive, Santa Fe, NM 87505 ADMINISTRATIVE APPLICATION CHECKLIST THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE Applicant: Delaware Energy, LLC OGRID Number: 371195 Well Name: Dust Devil State SWD #1 API: Pending Pool: SWD; Devonian Pool Code: 96101 SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED BELOW 1) **TYPE OF APPLICATION:** Check those which apply for [A] A. Location - Spacing Unit - Simultaneous Dedication INSL NSP (PRORATION UNIT) B. Check one only for [1] or [1] [1] Commingling - Storage - Measurement DHC DCTB PLC PC OLS OLM [II] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery WFX PMX SWD TIPI TEOR **PPR** FOR OCD ONLY 2) NOTIFICATION REQUIRED TO: Check those which apply. Notice Complete A. Offset operators or lease holders B. Royalty, overriding royalty owners, revenue owners Application C. Application requires published notice Content D. Notification and/or concurrent approval by SLO Complete E. Notification and/or concurrent approval by BLM F. Surface owner G. For all of the above, proof of notification or publication is attached, and/or, H. No notice required 3) **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is accurate and complete to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division. Note: Statement must be completed by an individual with managerial and/or supervisory capacity. 4/10/2019 Date Sarah Presley Print or Type Name 432-685-7005

APR 15 2019 PM02:

s.presley@delawareenergy.com e-mail Address

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

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

APPLICATION FOR AUTHORIZATION TO INJECT

	APPLICATION FOR AUTHORIZATION TO INJECT					
I.	PURPOSE:					
II.	OPERATOR:Delaware Energy, LLC					
	ADDRESS: 405 North Marienfeld, Suite 250, Midland TX 79701					
	CONTACT PARTY:Mike McCurdyPHONE:432-312-5251					
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?YesXXXX_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:					
	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and, 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:Mike McCurdyTITLE:Vice-President					
	SIGNATURE:					
	E-MAIL ADDRESS:m.mccurdy@delawareenergy.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.

Side 1 INJECT	INJECTION WELL DATA SHEET	
OPERATOR: Delaware Energy, LLC		
WELL NAME & NUMBER: Dust Devil State SWD # 1		
WELL LOCATION: 400' FSL & 2,350' FWL	N 7 23S	S 33E
	UNIT LETTER SECTION TOV	TOWNSHIP RANGE
WELLBORE SCHEMATIC see attached wellbore sketch	sketch <u>WELL CONSTRUCTION DATA</u> Surface Casing	TION DATA
	Hole Size: 17-1/2" Casir	Casing Size: <u>13-3/8", 54.5#</u>
200	Cemented with: <u>500</u> sx. or Top of Cement:surface Meth	orft ³ Method Determined: Plan to Circulate
	Intermediate Casing	3
10,722'	Hole Size: 12-1/4" Casir	Casing Size: 9-5/8", 47#, L-80
	Cemented with:2,500' sx. or	ft ³
	Top of Cement:surfaceMeth	Method Determined: Plan to Circulate
	Production Casing	24
	Hole Size: 8-1/2" Casir	Casing Size: 7-5/8", 39#, P-110
	Cemented with: 650 sx. or	ft3
16.822	Top of Cement: Top of Liner Meth to lin	Method Determined: Plan to Circulate to liner top
	Total Depth: 16,822'	
	Injection Interval	
	16,822' feet to (OPEN HOLE)	17,822'

INJECTION WELL DATA SHEET

Side 1

L		
	Tubing Size: 5.5" BTC x 5.5" Flush Joint Lining Material: Fiber Glass	
Tyl	Type of Packer: Weatherford Arrow Set 1X	
Pac	Packer Setting Depth: 16,772'	
Oth	Other Type of Tubing/Casing Seal (if applicable):	
	Additional Data	
	Is this a new well drilled for injection?XXXXXYesNo	
5	Name of the Injection Formation: Devonian	
in.	Name of Field or Pool (if applicable): SWD; Devonian	
4	Has the well ever been perforated in any other $zone(s)$? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. N/A	
5.	Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:	
	Below: none	

Side 2

Additional Questions on C-108

VII.

- 1. Proposed average and maximum daily rate and volume of fluids to be injected; Average 15,000-20,000 BWPD, Max 25,000 BWPD
- 2. Whether the system is open or closed; Open System, Commercial SWD
- 3. Proposed average and maximum injection pressure; Average 1,500-2,500 PSI, Max 3,364 PSI

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

Bone Spring, Delaware, and Wolfcamp produced water. No known incompatibility exists with these produced water types and the Devonian. Devonian formation is used as a disposal interval throughout the Delaware Basin for Wolfcamp, Bone Springs, and Delaware produced water. See attached water analysis from Bone Spring, Wolfcamp, and Delaware produced water.

5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

See attached Lea County Devonian water samples

*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 <u>injection</u> zone as well as any such sources known to be immediately underlying the injection interval.

The proposed disposal interval is in the Devonian formation 16,822'-17,822'. Devonian is an impermeable organic Shale at the very top (16,622 ft, Woodford Shale) 100ft thick followed by permeable lime, dolomite, and small amount of shale 1000ft thick. There are no fresh water zones underlying the proposed injection zone. Usable water depth is from surface to +/- 145, the water source is older alluvium (Quaternary). All the fresh water wells in the area have an average depth to water of 145ft per State Engineer.

IX. Describe the proposed stimulation program, if any.

60,000 gallons 20% HCL acid job with packer

X. Attach appropriate logging and test data on the well

Mud log will be filed after the well has been drilled. All cased hole and open hole Logs will be filed following drilling operations.

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. Attached is a water sample taken from 32.325532, -103.587956 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.

Delaware Energy, L.L.C. has reviewed and examined available geologic and engineering data in the area of interest for the Dust Devil State SWD #1 and have found no evidence of faults or other hydrologic connections between Devonian disposal zone and the underground sources of drinking water. Furthermore, there exist many impermeable intervals between the injection interval and the fresh ground water from the top of the Devonian Carbonate and the base of the ground water.

Mike McCurdy	Vice President	4/10/2019
	Title	Date

III. WELL DATA

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section. Dust Devil State SWD #1, Sec. 7-T23S-R33E, 400' FSL & 2,350' FWL, UL N, Lea County, New Mexico

(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.

Casing Size	Setting Depth	Sacks of Cement	Hole Size	Top of Cement	Determined
13-3/8"	500'	500	17-1/2"	Surface	CIRC
9-5/8"	10,722'	2500	12-1/4"	Surface	CIRC
7-5/8″	10,522'-16,822'	650	8-1/2"	Liner Top	CIRC & CBL

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

5-1/2" BTC X 5-1/2" Flush Joint, Internally Fiber Glass Coated Tubing set 50 to 100ft above open hole

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

Weatherford Arrow Set 1X injection packer, nickel plated with on/off tool

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. Devonian Formation Pool Name: SWD (Devonian)

- (2) The injection interval and whether it is perforated or open-hole. 16,822' to 17,822' (Open hole)
- (3) State if the well was drilled for injection or, if not, the original purpose of the well. Well is a planned new drill for SWD

(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.

None, well is a planned new drill

(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.

Next Higher: Delaware 4,972' – 8,972'; Bone Springs 8,972' – 10,722'; Wolfcamp 10,722' – 13,872'; Strawn 13,872' – 14,072'; Atoka 14,072' – 14,772'; Morrow 14,772' – 16,222'

Next Lower: None

DISTRICT I 1625 N. French Dr., Hobbe, NM 88240 Phone (575) 393-6161 Fax: (576) 363-0720 DISTRICT II 811 S. First St., Artesia, NM 88210 Phone (575) 748-1253 Fax: (575) 748-9720

DISTRICT III 1000 Rio Brazos Rd., Aztec, NM 67410 Phone (506) 334-5176 Pax: (505) 334-5170

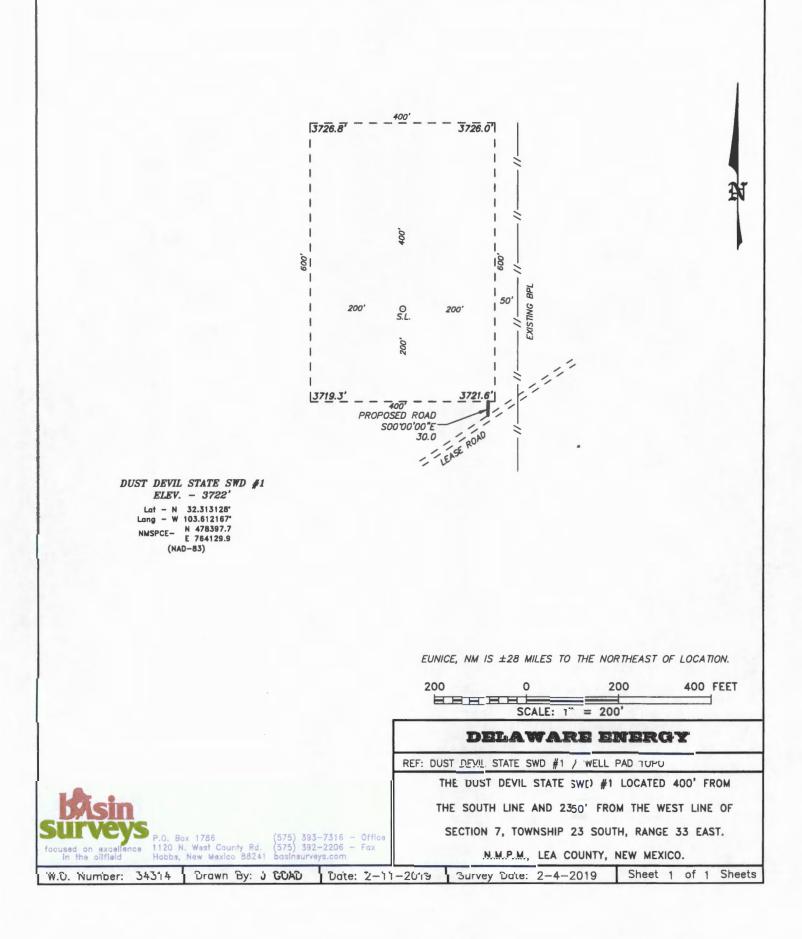
DISTRICT IV 1220 S. St. Francis Dr., Santa Fe, NM 67505 Phone (505) 476-3460 Fax: (505) 476-3463 State of New Mexico Energy, Minerals and Natural Resources Department Form C-102 Revised August 1, 2011

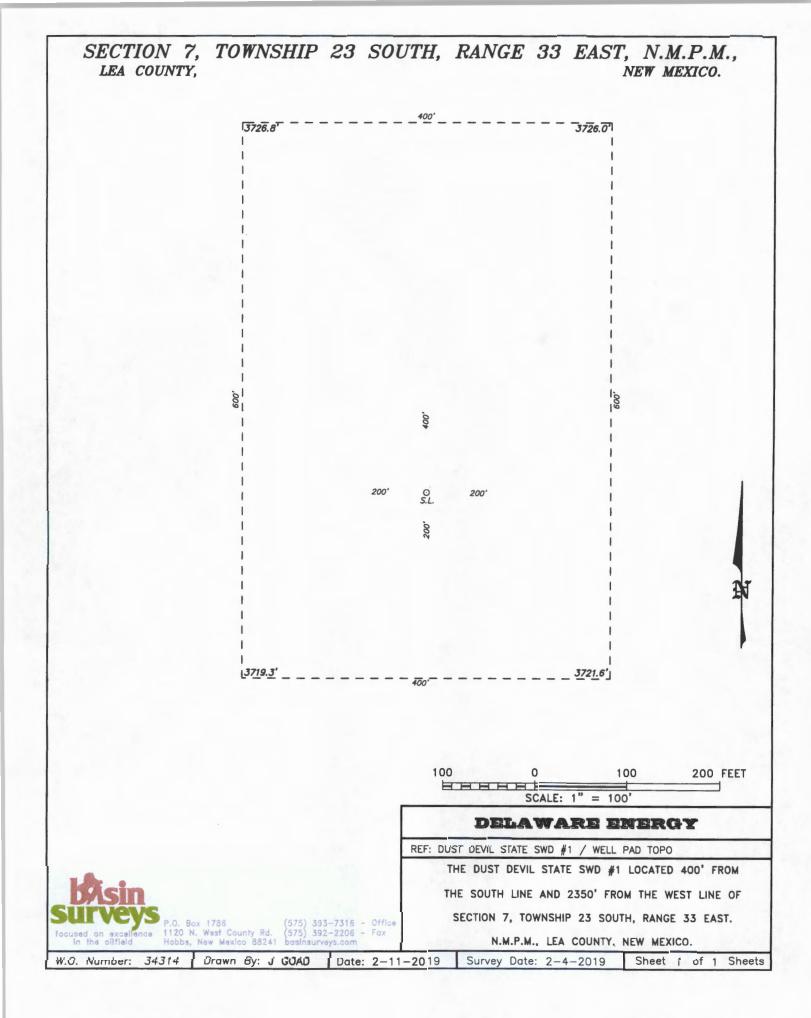
Submit one copy to appropriate District Office

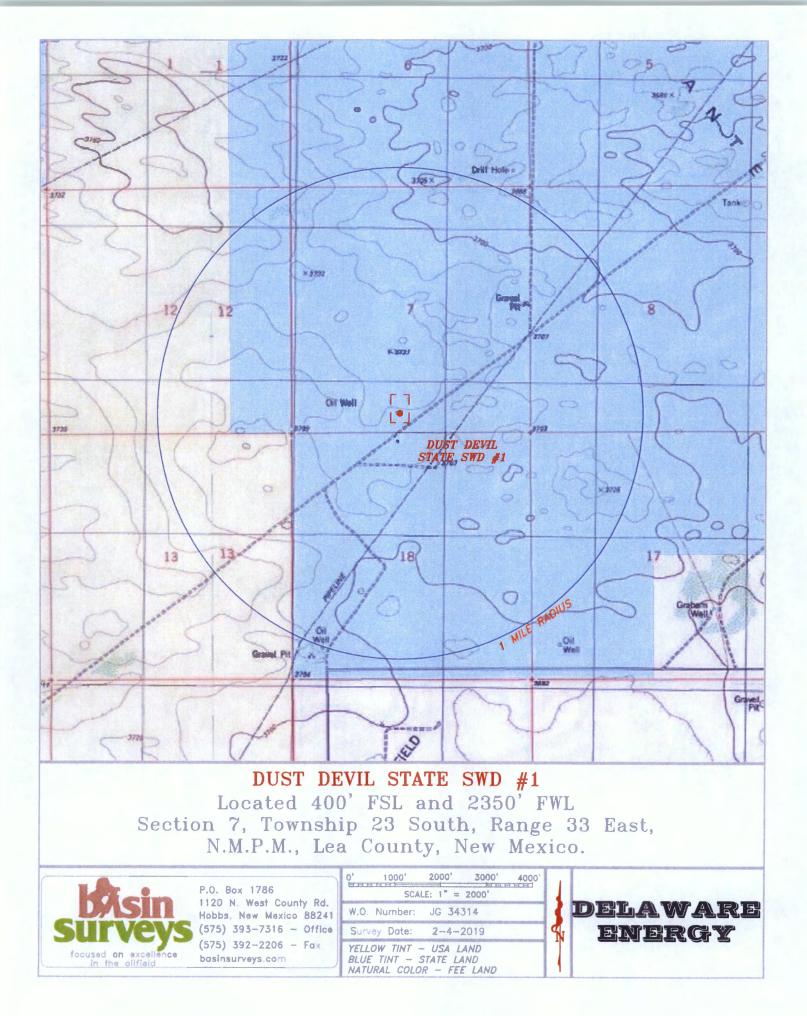
OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, New Mexico 87505

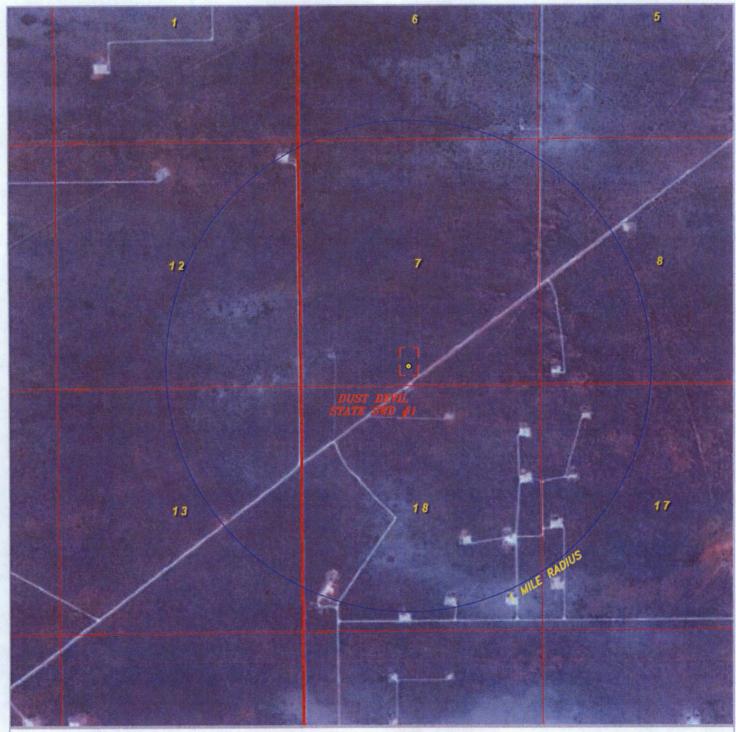
□ AMENDED REPORT WELL LOCATION AND ACREAGE DEDICATION PLAT Pool Code Pool Name API Number SWD: DEVONIAN 96101 **Property** Name Well Number **Property** Code DUST DEVIL STATE SWD 1 **Operator** Name Elevation OGRID No. 3722' 371195 DELAWARE ENERGY Surface Location UL or lot No. Section Township Range Lot Idn Feet from the North/South line Feet from the East/West line County 7 33 E 400 SOUTH 2350 WEST LEA N 23 S 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 **Dedicated** Acres Joint or Infill **Consolidation** Code 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 N.: 483295.1 483267.8 761748.4 (NAD83) E.: 766949.1 (NAD83) **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. LOT 1 the division 101 110 1 Signature J Date Sarah Presley Printed Name s.presley@delawareenergy.com Email Address LOT 2 SURVEYOR CERTIFICATION N.: 480630.2 E : 761765 4 I hereby certify that the well location shown (NAD83) on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my belief. FEBRUARY 402019 MEXICO Date Sa EN Sign LOT 3 Prof al urveyor sio 797 SURFACE LOCATION Lat - N 32.313128° Long - W 103.612167° NMSPCE- N 478397.7 E 764129.9 Certific 7977 (NAD-83) 2350 N.: 478010.3 SCALE: 1" = 2000' WO Num:: 34344 400' 0' N.: 477987.5 E.: 761783.1 1000' E.: 766989.3 (NAD83) LOT 4 (NAD83)



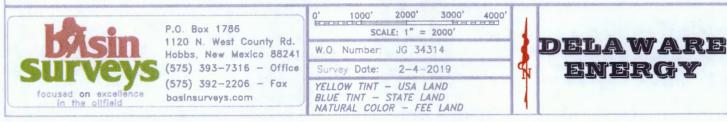


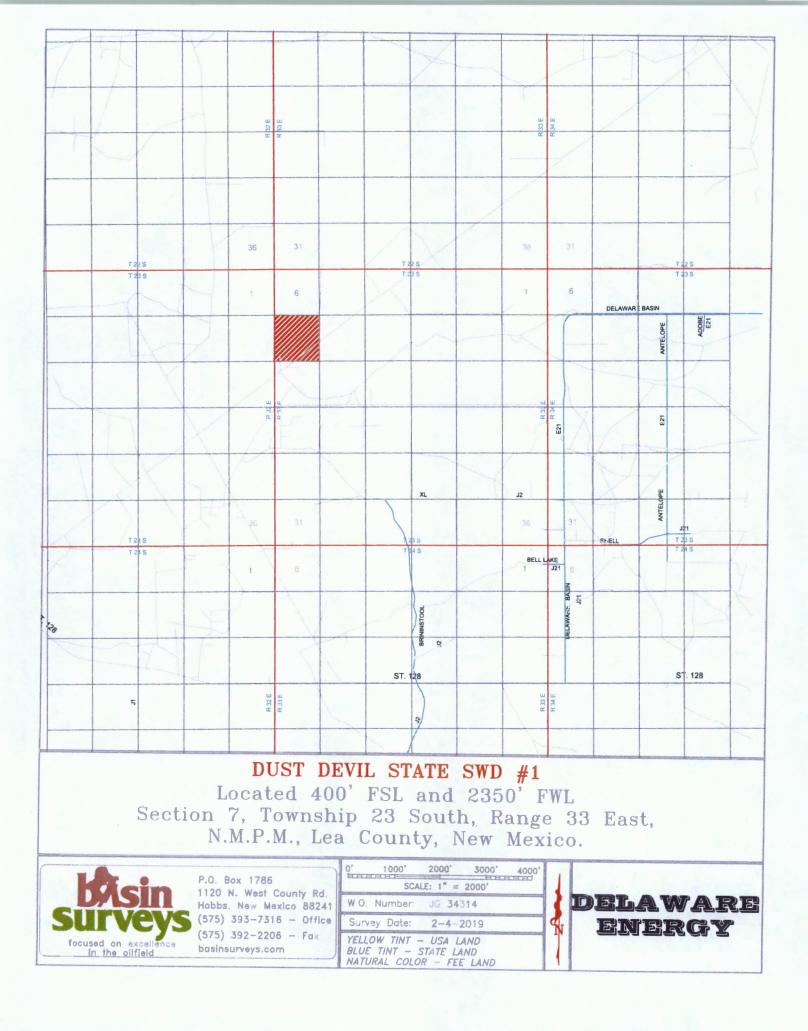


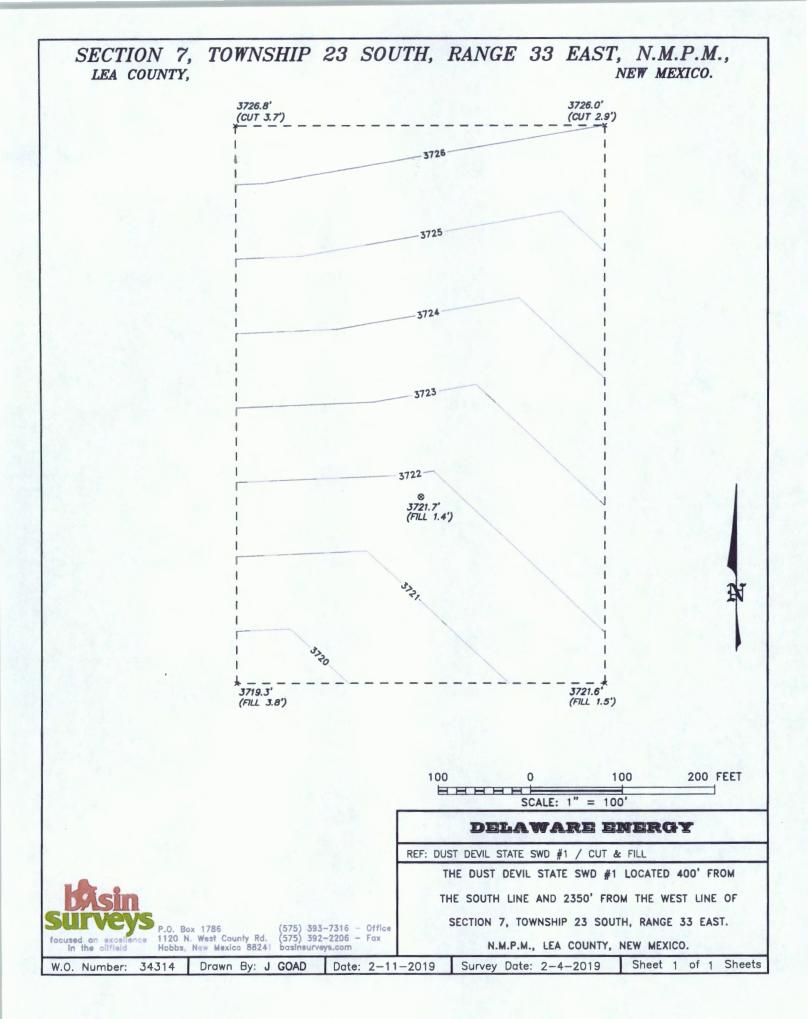




DUST DEVIL STATE SWD #1 Located 400' FSL and 2350' FWL Section 7, Township 23 South, Range 33 East, N.M.P.M., Lea County, New Mexico.







Water	Analysis -	Disposal	Zone -	DEVONIAN
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NM WAIDS D	NM WAIDS DATA						
S-T-R	FIELD	FORMATION	TDS	CHLRD			
24-235-29E	REMUDA	DEVONIAN	64582	37500			
24-235-29E	REMUDA	DEVONIAN	56922	29000			
06-235-34E	BELL LAKE NORTH	DEVONIAN	71078	42200			
34-235-34E	ANTELOPE RIDGE	DEVONIAN	80187	47900			

Water Analysis - Source Zone - BONE SPRING

BioTe	chin	Lat	oratory Analysis Endurance		Sample Oat	e: 1/31/2014	
Requested by:	T. Ratidf	J	azzmaster 17 St	ate #4H	Les C	o, NM	
		Water	Analysia Measurementa	Caterna (=)	ang/L	Anions (-)	. mat
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Carbon Da-de (mgl.)	Ar 903	Specific Gravity	1 150	Catum (Ca)	38 440	Banhonate (HCO,)	18.00
Hydregen Sultas (mgL)	00	Total Chesoft at Labor (TD)	11	Magnesian (Mg)	386	Chierrer (mg1.)	118.520
-	57	impt ten	180 5458	Lodars [Na]-ten	54 270	Suttate (SQ,)	319
Temperature T	73	Total Haldwess (Mg/L)	18 000	imm (P=)	100		
				Alassianta (Ma)	0.00		

Water Analysis - Source Zone - DELAWARE

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		LABORATORY NO	80.20	
Er. Joe Seall				
P. Q. Box 31810. Midland, IX	10110	SAMPLE RCCEIVED		
P. 9. 898. 21819. AUG1899. 14.	any	RESULTS REPORTE	9-18	-32
OUPANY Heridian Oil Correny LELO OR POOL LECTION BLOCK BURNEY OURCE OF SAMPLE AND DATE TAKEN:	COUNTY	Lea 51	ATL	
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Tatal Dissolved Salide 9-180	a last att	and a second second second		



P.O. Box 3394, Midland, Texas 79702 Phone (432) 684-4233 Fax (432) 684-4277

Water Analysis

Code	214054				
Client Informat	tion	Sample Information			
Delaware Ene	ergy	Lease/Well:	Dust Devil SWD/1		
County:	Lea				
		Sample Point:			
		Date Sampled:	03/14/2019		
Rep:	Derrick Boutwell	Date Reported:	03/19/2019		

Results

Cations lon Concentration(mg/L) Barium (as 0 Ba) Calcium (as 7 Ca) Iron (as Fe) 0 Sodium (as 92 Na) Magnesium 38 (as Mg)

Anions

lon	Concentration(mg/L)
Chlorides (as Cl)	46
Sulfate (as SO4)	88
Carbonate (as CO3)	0
Bicarbonates (as HCO3)	561
Sulfide (as S2-)	0

Scaling Indices

Temp(F)	CaCO ₃	CaSO ₄ *2H ₂ O	CaSO ₄	BaSO ₄
80	1.6788	0.0000	0.0000	-27.5333
120	1.9836	0.0000	0.0000	-27.7390
160	2.3127	0.0000	0.0000	-27.8452
200	2.6111	0.0000	0.0000	-27.8885
250	2.8912	0.0000	0.0000	-27.9045

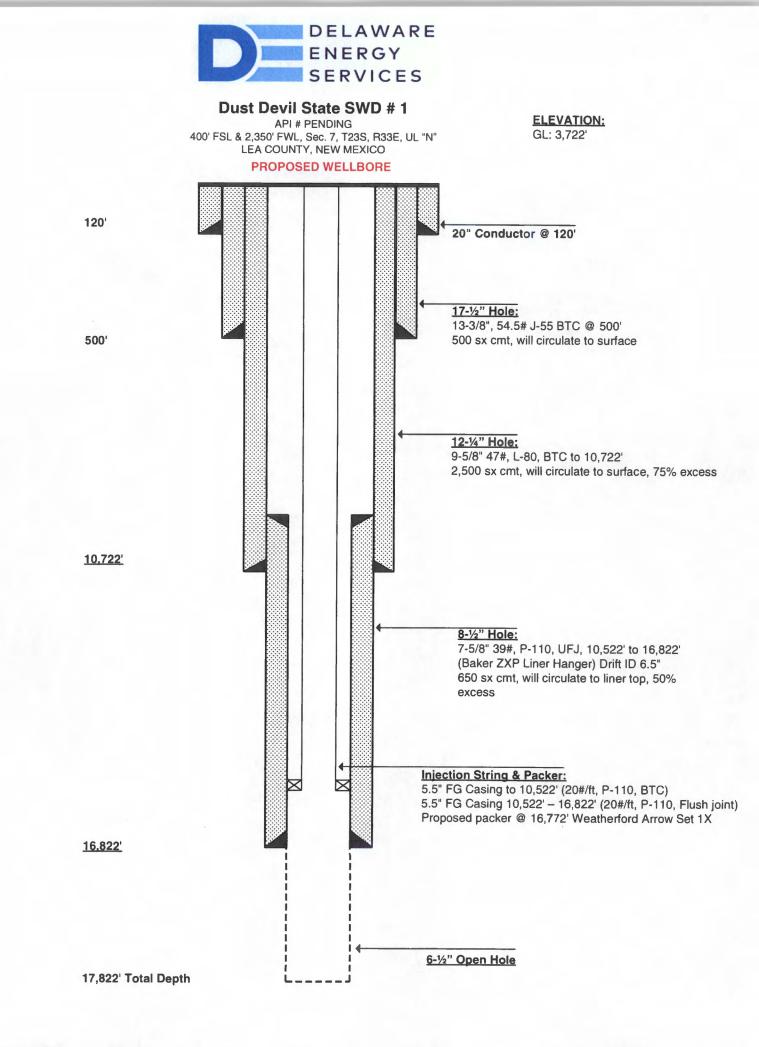
Low = < 0.200, Moderate = 0.200-0.999, High = > 1.00

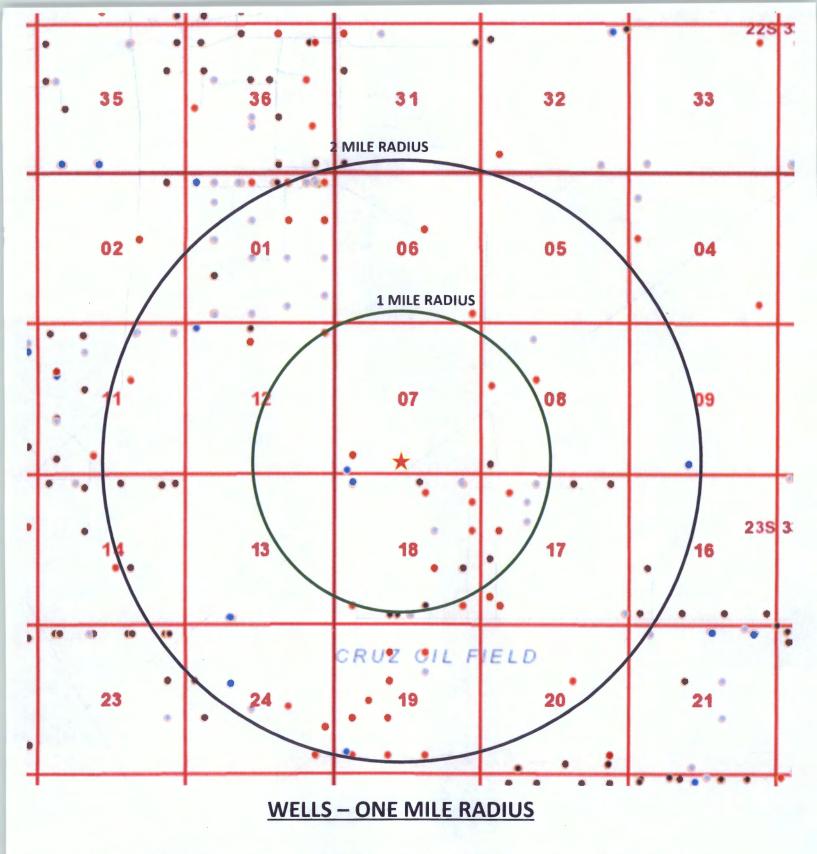
Comments

32.325532-103.58	7956
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Other Measurements

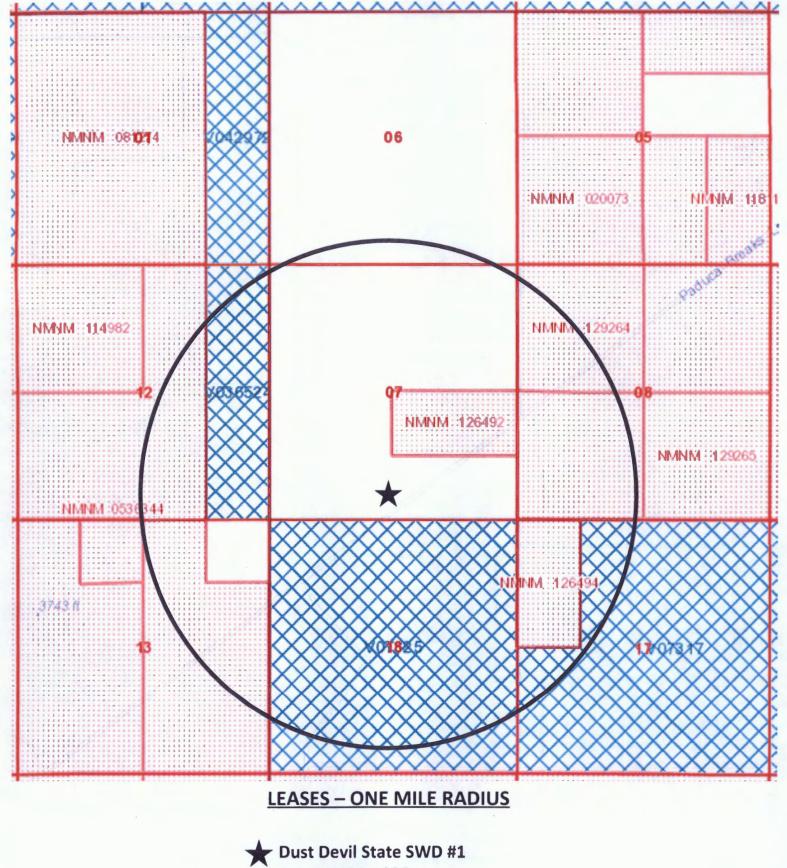
Value
9.51
1.001
17
832.000





NO WELLS PENETRATE THE DEVONIAN FORMATION IN THE AOR

SECTION 7-T23S-R33E Dust Devil State SWD #1 (Proposed Location) Delaware Energy, LLC



Sec. 7-T23S-R33E Lea Co. NM

Dust Devil State SWD #1

LEASES - ONE MILE RADIUS

Section 6, T23S-R33E

• Matador Resources Company 5400 LBJ Fwy Ste 1500 Dallas, TX 75240

Section 7, T23S-R33E

Federal Leases (NMNM 126492)

- EOG Y Resources, Inc (Lessee) 104 S. 4TH Street Artesia, NM 88210
- EOG A Resources, Inc (Lessee) 104 S. 4TH Street Artesia, NM 88210
- EOG M Resources, Inc (Lessee) 104 S. 4TH Street Artesia, NM 88210
- Matador Resources Company 5400 LBJ Fwy Ste 1500 Dallas, TX 75240

Section 8, T23S-R33E

Cimarex Energy Co.
 600 N Marienfeld St # 600
 Midland, TX 79701

Federal Lease (NMNM 020073)

• EOG Resources, Inc (Lessee) PO Box 2267 Midland, TX 79702-2267

Federal Lease (NMNM 129264)

• EOG Resources, Inc (Lessee) 5509 Champions Drive Midland, TX 79706

Section 12, T23S-R32E

Federal Lease (NMNM 0536344)

• Conoco Phillips Co. (Lessee) PO Box 7500 Bartlesville, OK 74005-7500

State Lease (V036524)

- Cimarex Energy Co. (Lessee) 600 N Marienfeld St # 600 Midland, TX 79701
- Strata Production Co. 1301 N Sycamore Ave Roswell, NM 88201
- Burlington Resources Oil & Gas 3300 North A Street, #6 Midland, TX 79705

Section 17, T23S-R33E

State Lease (V07317)

• COG Operating, LLC (Lessee) 600 W. Illinois Midland, TX 79701

Federal Leases (NMNM 126494)

- EOG Y Resources, Inc (Lessee) 104 S. 4TH Street Artesia, NM 88210
- EOG A Resources, Inc (Lessee) 104 S. 4TH Street Artesia, NM 88210
- EOG M Resources, Inc (Lessee) 104 S. 4TH Street Artesia, NM 88210

Section 13, T23S-R32E

- Conoco Phillips Co. (Lessee) PO Box 7500 Bartlesville, OK 74005-7500
- Strata Production Co. 1301 N Sycamore Ave Roswell, NM 88201
- Bureau of Land Management 620 E. Greene Street Carlsbad, NM 88220
- Burlington Resources Oil & Gas 3300 North A Street, #6 Midland, TX 79705

Section 18, T23S-R33E

State Lease (V07325)

 COG Operating LLC Held by and (Lessee) 600 W. Illinois Midland, TX 79701 Dust Devil State SWD #1 Location: 400' FSL & 2350' FWL Sec. 7, T-23-S, R-33-E

Estimated Pre-Drill Formation Tops

Top of Salt	1,222'
Base Salt	4,922'
Delaware Mountain Group	4,972'
Bone Spring/Abo	8,972'
Wolfcamp	10,722'
Strawn	13,872′
Atoka	14,072'
Morrow	14,772'
Barnett	15,972'
Mississippian	16,222'
Woodford	16,622'
Devonian	16,822'

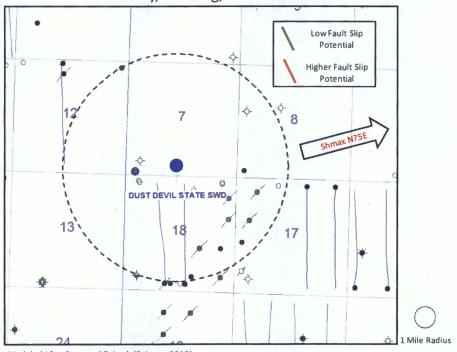
Statement Regarding Seismicity and Well Location (Dust Devil State SWD #1)

Historically, the area near the proposed Dust Devil State SWD #1 has seen only minor seismic activity. There has been one seismic event (as per public data available on the USGS database) close to this location. The event was 4.6 miles southeast of the location on December 4, 1984 and measured 2.9.

Delaware Energy does not own 2D or 3D seismic data near the proposed SWD location therefore the fault interpretations are based on data obtained from the USGS New Mexico Faults Database (2005) and other published data. Based on these sources the closest fault would be approximately 4.5 miles east of the location. A recent technical paper written by Snee and Zoback, "State of Stress in the Permian Basin, Texas and New Mexico: Implications for induced seismicity", was published in the February 2018 edition of The Leading Edge. The study evaluates the strike-slip probability of known faults using FSP analysis. The study predicts that the N-S trending fault east of the location (green) should have a very low probability of being critically stressed resulting in an induced seismicity event. Any W-E trending faults (orange) would have a higher probability of being critically stressed, resulting in potential slip, due to the relationship of the strike of the fault and the regional Shmax orientation (approx. N 75 deg E) in the area. The exact position of this fault relative to the proposed location, and depth of the target formation, is unknown. Risk of contact with the fault should be evaluated and modeled prior to drilling the well. It is uncertain whether the seismic activity to the south was associated with this fault, or another fault not documented in the public domain. Any potential contact with the fault should be reduced due to the distance of the proposed SWD well from the fault (4.5 miles).

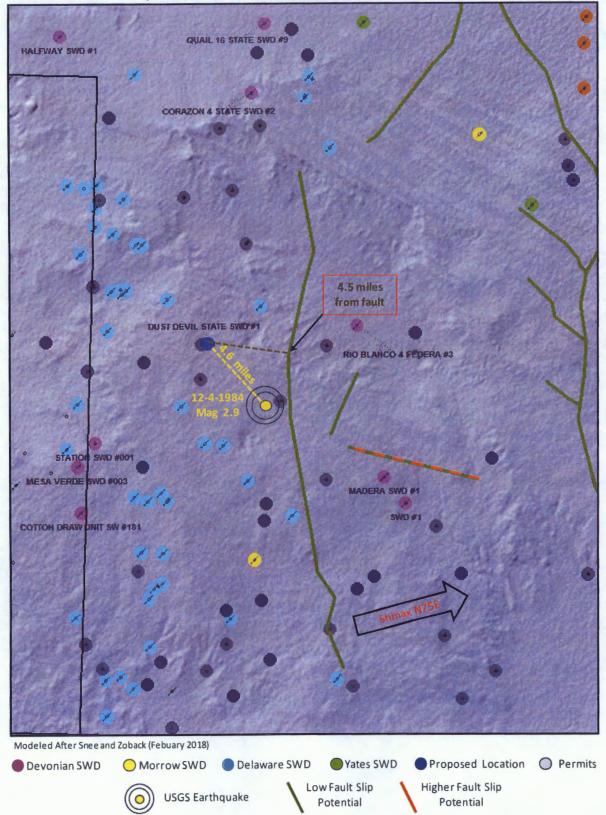
The proposed Dust Devil State SWD #1 is located well away from the nearest active Devonian SWD or other SWD wells (see map below). The well should meet current OCD and Industry recommended practices.

Kevin J. Schepel Petrophysical Advisor kevin.schepel@att.net 214-212-6540



Well Activity, Faulting, and Closest SWD

Modeled After Snee and Zoback (Febuary 2018)



Proximity to Historic Earthquake Activity and Faults

Data and Interpretation Disclosure - Although care has been taken to ensure that these data are up to date and accurate, this information and data is being providing as is. The data are what is believed to be the best public data available based on published documents, reports, and information available through the USGS. The user assumes all responsibility and risk for use of the data and interpretations. Users of the data agree not to misuse, add to without permission, or misrepresent the data provided in any way. In no event will the provider of this document be liable to any party for any direct, indirect, incidental, consequential, special or exemplary damages, or lost profit resulting from any use or misuse of this data. Additionally, provider is not liable for any inaccurate data. No person, entity, or user shall use the information in a manner that is in violation of any federal, state, or local law or regulation.

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 February 28, 2019 and ending with the issue dated February 28, 2019.

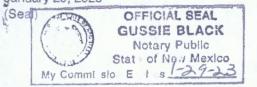
4 Okung

Publisher

Sworn and subscribed to before me this 28th day of February 2019.

Business Manager

My commission of Rires was a superior of the s



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

LEGALS

LEGAL NOTICE FEBRUARY 28, 2019

Delaware Energy, L.L.C., 405 N. Marienfeld St. Suite 200, Midland, TX 79701, has filed a form C-108 (Application for Authorization to inject) with the Oil Conservation Division seeking administrative approval to drill the Dust Devil State SWD #1 as a Commercial Salt Water Disposal well.

The Dust Devil State SWD #1 is located at 400' FSL and 2,350' FWL, Unit Letter N, Section 7, Township 23 South, Range 33 East, Lea County, New Mexico. The well will dispose of water produced from oil and gas wells into the Devonian Formation from 16,822' to 17,822' at a maximum rate of 25,000 barrels of water per day at a maximum pressure of 3,364 psi.

Interested parties must file objections or requests for hearing with the Oil Conservations Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

Additional information can be obtained by contacting Delaware Energy, L.L.C., at (432) 685-7005. #33794

67114908

ALC: NO.

00225010

MIKE MCCURDY DELAWARE ENERGY 405 N. MARIENFELD, STE 250 MIDLAND, TX 79701





Delaware Energy, LLC

Application for Injection/SWD

Dust Devil State SWD #1

UL N, Sec. 7, T-23-S, R-33-E, 400' FSL & 2,350' FWL, Lea Co., NM

April 10, 2019

Contents:

- 1. Administrative Application Checklist
- 2. Form C-108: Application for Authority to Inject
- 3. Form C-108 Additional Questions Answered
- 4. Form C-102
- 5. Chemical Analysis of Devonian Formation Water Sample
- 6. Chemical Analysis of Bone Spring Formation Water Sample
- 7. Chemical Analysis of Delaware Formation Water Sample
- 8. Planned wellbore diagram for the Dust Devil State SWD #1
- 9. Tabular Data on All Wells of Public Record within the Area of Review which Penetrate the Proposed Injection Zone (No applicable wells)
- 10. Map Identifying all Wells and Leases within Two Miles of Any Proposed Injection Well with a One Mile Radius Circle Drawn Around the Proposed Injection Well
- 11. Sample of Letter Sent with This Application Packet to Owner of Surface of the Land on Which the Well is to be Located and to each Leasehold Operator within One Mile of the Well Location
- 12. Formation Tops
- 13. Certified Mailers
- 14. Seismicity Assessment
- 15. Carlsbad Current-ARGUS Affidavit of publication

Delaware Energy, L.L.C. 405 N. Marienfeld, Suite 200 Midland, TX 79701 Office: (432) 685-7005

April 10, 2019

Surface Owner / Offset Operators

Re: Notification of Application for Authorization to Inject Dust Devil State SWD #1 Well

Ladies and Gentlemen:

Delaware Energy, LLC is seeking administrative approval to utilize the proposed Dust Devil State SWD #1 as a commercial Salt Water Disposal well. As required by the New Mexico Oil Conservation Division Rules, we are notifying you of the following proposed salt water disposal well. This letter is a notice only. No action is required unless you have questions or objections.

Well:	Dust Devil State SWD #1
Proposed Disposal Zone:	Devonian Formation (from 16,822'- 17,822')
Location:	400' FSL & 2,350' FWL, UL N, Sec. 7, T23S, R33E
	Lea Co., NM
Applicants Name:	Delaware Energy, L.L.C.
Applicants Address:	405 N. Marienfeld, Suite 200, Midland, TX 79701

This application for water disposal well will be filed with the New Mexico Oil Conservation Division. If they determine the application complies with the applicable regulations, then it will be approved. The New Mexico Conservation Division address is 1220 South St. Francis Dr., Santa Fe, NM 87505. And their phone number is 505-476-3460.

Please call Sarah Presley with Delaware Energy, LLC if you have any questions at 432-685-7005.

Sincerely, Sarah Presley

DISTRIBUTION LIST

Surface Owner:

State of New Mexico 310 Old Santa Fe Trail Santa Fe NM 87501

Offset Operators/Leasehold Owners:

Bureau of Land Management 620 E. Greene Street Carlsbad, NM 88220

Burlington Resources Oil & Gas 3300 North A Street, #6 Midland, TX 79705

Cimarex Energy Co. 600 N Marienfeld St # 600 Midland, TX 79701

COG Operating LLC 600 W. Illinois Midland, TX 79701

Conoco Phillips Co. PO Box 7500 Bartlesville, OK 74005-7500

EOG Resources, Inc 5509 Champions Dr. Midland, TX 79706

EOG Y, A, M Resources, Inc 104 S. 4TH Street Artesia, NM 88210

Matador Resources Company 5400 LBJ Fwy Ste 1500 Dallas, TX 75240

Strata Production Co. 1301 N Sycamore Ave Roswell, NM 88201 State of New Mexico Oil Conservation Division District I 1625 N French Drive Hobbs, NM 88240

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