

DATE IN 08/02/13	SUSPENSE	ENGINEER PG	LOGGED IN 08/05/2013	TYPE IPI 443	APP NO. PPRG 1321741676
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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 ☐ SWD ☒ IPI ☐ EOR ☐ PPR

[D] Other: Specify SWD-562

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

- [A] ☐ Working, Royalty or Overriding Royalty Interest Owners
- [B] ☐ Offset Operators, Leaseholders or Surface Owner
- [C] ☐ Application is One Which Requires Published Legal Notice
- [D] ☐ Notification and/or Concurrent Approval by BLM or SLO  
 U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E] ☐ 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.~~

David Stewart  
 Print or Type Name

[Signature]  
 Signature

SR Regulatory Advisor 7/30/13  
 Title Date

OK4 USA Inc. 16696  
 DiMaggio #1  
 30-015-26930

SWD-562

david\_stewart@ok4.com  
 e-mail Address 432-685-5717

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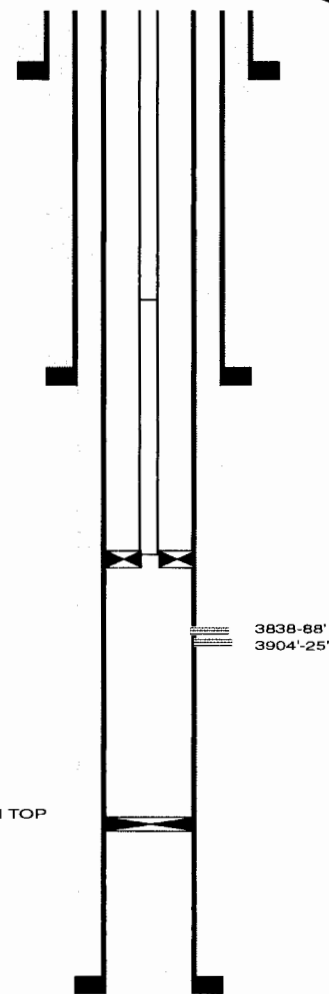
To: New Mexico Oil Conservation Division  
Attn: Phillip R. Goetze, P.G.

OXY USA Inc. (16696) formally requests an increase in maximum injection pressure to 750 psi for the following approved SWD permit. The justification will be presented herein.

Well Name: DiMaggio #1  
API#: 30-015-26930  
1650 FSL 1693 FEL J Sec 16 T26S R29E  
Administrative Order SWD-562 6/23/94

The SWD well is completed in the Delaware formation (3838–3925') with 2.875" composite lined tubing (2.25" ID) set at a depth of 3778'. Please see Figure 1 below:

Well Name	DiMaggio 1
API	3001526930
Location	Sec 16 T26S T29E
GL	2918.7'
Hole size	17-1/2"
Surface casing	13-3/8" 48#
Set @	480'
Cement	Surface
Hole size	11"
Intermediate Casing	8-5/8", 24# & 32#
Set @	2816'
Cement	Surface
Hole size	7-7/8"
Intermediate Casing	5-1/2" 15.5#, J55
Set @	5531'
Cement	1845'
Tubing String	
Tubing, 2-7/8" & Packer	set @ 3778'



$\frac{750 \text{ psi}}{3838 \text{ ft}} = 0.195$   
Delaware

CIBP 4946' W/ 35' OF CMT ON TOP

PBTD: 5343'

TD: 7000'

Figure 1: DiMaggio #1 SWD Well Schematic.

On 7/16/2013 a planned step rate test was performed on the DiMaggio #1 SWD well to identify the formation parting pressure, thus determining a maximum allowable injection pressure. The well was back flowed for 4hrs, then shut-in for an additional 12 hrs to ensure accurate testing results. The step-rate test was then conducted at the below rates utilizing treated water and a mobile pump truck. Pump rates were maintained for 15 minutes or until we achieved a stable injection pressure. Table 1 displays the injection rate for each step along with the corresponding surface treating pressure at the well head.

Rate [bbls/day]	Rate [bbls/min]	Cumulative Volume Pumped [bbls]	Tubing Head Pressure [psi]
432	0.30	5	364
576	0.40	10	548
720	0.50	18	595
864	0.60	27	635
1008	0.70	37	676
1152	0.80	50	718
1296	0.90	63	742
1440	1.00	72	764
1584	1.10	84	808
1728	1.20	95	821
1872	1.30	108	835
2016	1.40	118	840
2160	1.50	137	853
2520	1.75	154	860
2880	2.00	167	873
3240	2.25	185	894
3600	2.50	205	894
3960	2.75	227	896
4680	3.25	340	979
5400	3.75	283	985
6120	4.25	311	1051
6840	4.75	344	1174

Table 1: DiMaggio #1 SWD Step Rate test data.

The formation parting pressure was determined to be 2430 psi during the step-rate test (See Figure 2.) The corresponding surface treating pressure when the formation parted was 808 psi. The requested increase to 750 psi surface injection pressure represents an equivalent bottom-hole pressure well below the formation parting pressure. A conservative approach was taken in regards to injection rates in order to eliminate the possibility of fracture propagation into a non-disposal zone, thus the step rate test was terminated once it was apparent that the formation parted.

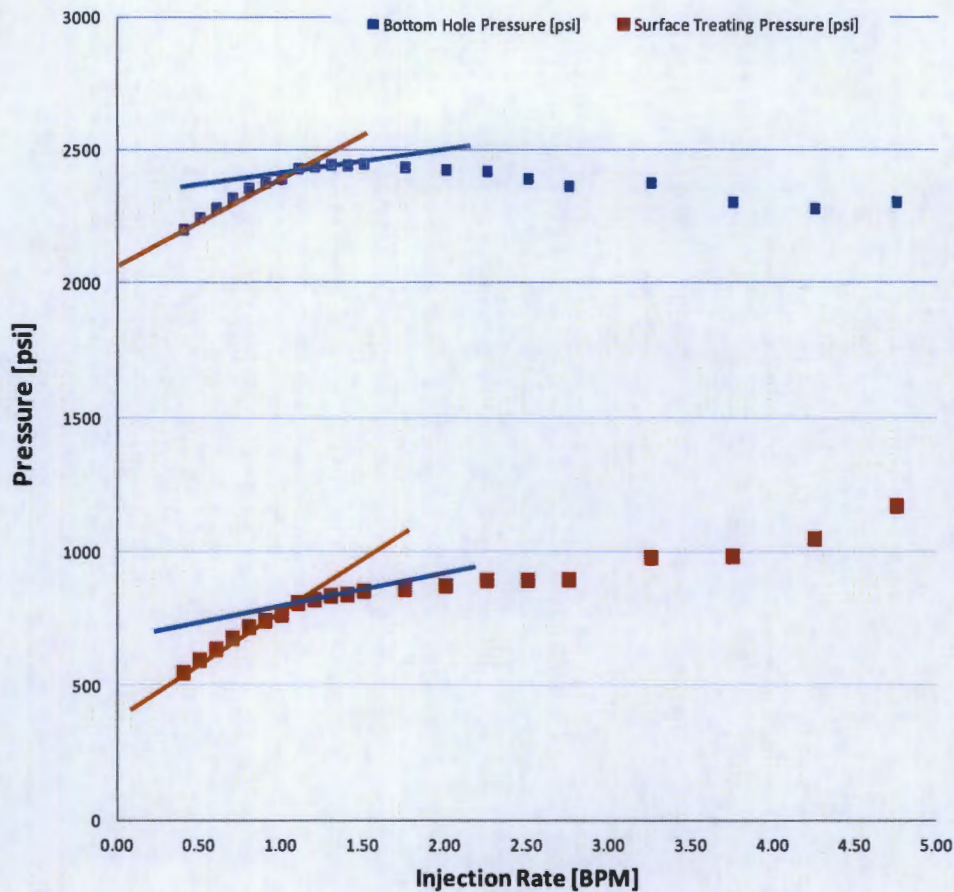


Figure 2: Surface Treating Pressure & Calculated Bottom Hole Pressure versus injection rate.

Please advise if any additional data is required in order to make a ruling of the proposed increase in permitted injection pressure.

Best regards

Joseph M. Evans  
Production Engineer  
SE New Mexico Reservoir Management Team  
OXY Permian Primary Development.  
Office - 713-350-4640  
Cell - 713-855-0624  
[joseph\\_evans@oxy.com](mailto:joseph_evans@oxy.com)

cc: NMOCD-Artesia



BRUCE KING  
GOVERNOR  
  
ANITA LOCKWOOD  
CABINET SECRETARY

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION



POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

*ADMINISTRATIVE ORDER SWD-562*

***APPLICATION OF POGO PRODUCING COMPANY FOR SALT WATER DISPOSAL, EDDY COUNTY, NEW MEXICO.***

**ADMINISTRATIVE ORDER  
OF THE OIL CONSERVATION DIVISION**

Under the provisions of Rule 701(B), Pogo Producing Company made application to the New Mexico Oil Conservation Division on May 19, 1994, for permission to complete for salt water disposal its DiMaggio Well No. 1 located 1650 feet from the South line and 1693 feet from the East line (Unit J) of Section 16, Township 26 South, Range 29 East, NMPM, Eddy County, New Mexico.

**THE DIVISION DIRECTOR FINDS THAT:**

- (1) The application has been duly filed under the provisions of Rule 701(B) of the Division Rules and Regulations;
- (2) Satisfactory information has been provided that all offset operators and surface owners have been duly notified;
- (3) The applicant has presented satisfactory evidence that all requirements prescribed in Rule 701 will be met; and
- (4) No objections have been received within the waiting period prescribed by said rule.

**IT IS THEREFORE ORDERED THAT:**

The applicant herein, Pogo Producing Company is hereby authorized to complete its DiMaggio Well No. 1 located 1650 feet from the South line and 1693 feet from the East line (Unit J) of Section 16, Township 26 South, Range 29 East, NMPM, Eddy County, New Mexico, in such manner as to permit the injection of salt water for disposal purposes into the Delaware formation at approximately 2900 feet to 4100 through 2 7/8-inch plastic-lined tubing set in a packer located at approximately 2800 feet.

**IT IS FURTHER ORDERED THAT:**

The operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

Prior to commencing injection operations into the well, the casing shall be pressure tested from the surface to the packer setting depth to assure the integrity of said casing.

The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing, or packer.

The injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection well to no more than 580 psi.

The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Delaware formation. Such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

The operator shall notify the supervisor of the Artesia district office of the Division of the date and time of the installation of disposal equipment and of the mechanical integrity test so that the same may be inspected and witnessed.

The operator shall immediately notify the supervisor of the Artesia district office of the Division of the failure of the tubing, casing, or packer in said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

**PROVIDED FURTHER THAT,** jurisdiction of this cause is hereby retained by the Division for the entry of such further order or orders as may be deemed necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of the operator to conduct operations in a manner which will ensure the protection of fresh water or in a manner inconsistent with the requirements set forth in this order, the Division may, after notice and hearing, terminate the injection authority granted herein.

The operator shall submit monthly reports of the disposal operations in accordance with Rule Nos. 706 and 1120 of the Division Rules and Regulations.

*Administrative Order SWD-562*

*Pogo Producing Company*

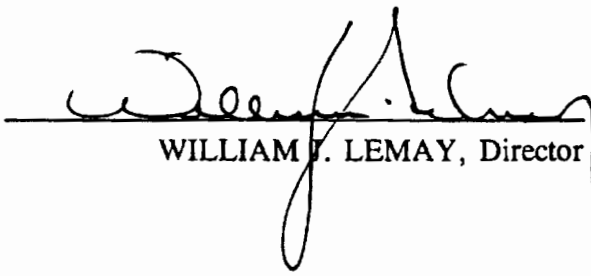
*June 23, 1994*

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The injection authority granted herein shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject well, provided however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

Approved at Santa Fe, New Mexico, on this 23rd day of June, 1994.

  
WILLIAM J. LEMAY, Director

WJL/DRC/amg

xc: Oil Conservation Division - Artesia