

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		5. Lease Serial No. NMLC057459
2. Name of Operator QUANTUM RESOURCES MANAGEMENT		6. If Indian, Allottee or Tribe Name
3a. Address 1401 MCKINNEY STREET SUITE 2400 HOUSTON, TX 77010		7. If Unit or CA/Agreement, Name and/or No.
3b. Phone No. (include area code) Ph: 432-683-1500 Fx: 432-683-1512		8. Well Name and No. LEONARD B FED 5
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 33 T17S R29E NWNE 990FNL 2310FEL		9. API Well No. 30-015-27000-00-S1
		10. Field and Pool, or Exploratory GRAYBURG
		11. County or Parish, and State EDDY COUNTY, NM

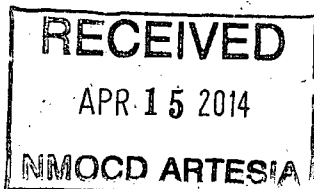
12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input checked="" type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Per Notice of Written Order Number 14DH05PR,
Water Production & Disposal Information, Water Analysis Report,
and NM Administrative Order No. WFX-733 (Injection Permit) attached.

LED 4/10/14
Accepted for record
NMOCB



SUBJECT TO LIKE
APPROVAL BY STATE

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

14. I hereby certify that the foregoing is true and correct.	
Electronic Submission #239707 verified by the BLM Well Information System For QUANTUM RESOURCES MANAGEMENT, sent to the Carlsbad Committed to AFMSS for processing by JENNIFER MASON on 03/24/2014 (14JAM0338SE)	
Name (Printed/Typed) CELESTE DALE	Title SR. REGULATORY ANALYST
Signature (Electronic Submission)	Date 03/24/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By <i>George D. Shalley</i>	Title	APPROVED APR 10 2014	Date
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office		
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.			

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

WATER PRODUCTION & DISPOSAL INFORMATION

In order to process your disposal request, the following information must be completed.

1. Name(s) of formation(s) producing water on the lease.

SEVEN RIVERS/ QUEEN/ GRAYBURG/ SAN ANDRES

2. Amount of water produced from all formations in barrels per day.

40

3. Attach a current water analysis of produced water from all zones showing at least the total dissolved solids, ph, and the concentrations of chlorides and sulfates. (One sample will suffice if water is commingled).

Catalyst water analysis attached.

4. How water is stored on lease.

Produced water dumps directly from the heater-treater to the Leonard Federal tank, battery.

5. How water is moved to the disposal facility.

Dumps to Leonard Federal via 2" poly flowline, water is truck hauled from Leonard Federal.

6. Identify the Disposal Facility by:

A. Facility Operators name. Quantum Resources Management, LLC

B. Name of facility or well name and number. Artesia Unit Well #001

C. Type of facility or well (WDW) (WIW) etc. WDW

D. Location by ¼ ¼ NW/SW Section 26 Township 17S Range 28E Eddy Co., NM

7. Attach a copy of the State issued permit for the Disposal Facility.

Administrative Order No. WFX-733 attached.

Submit to this office, **620 EAST GREENE ST, CARLSBAD NM, 88220**, the above required information on a Sundry Notice 3160-5. Submit 1 original and 3 copies, within abatement period. (This form may be used as an attachment to the Sundry Notice).



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

ADMINISTRATIVE ORDER NO. WFX-733

***APPLICATION OF SDX RESOURCES, INC. TO EXPAND ITS WATERFLOOD PROJECT
IN THE ARTESIA POOL IN EDDY COUNTY, NEW MEXICO***

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Division Order No. R-3311, SDX Resources, Inc. has made application to the Division on December 1, 1997 for permission to expand its Artesia Unit Waterflood Project in the Artesia Pool in Eddy County, New Mexico.

THE DIVISION DIRECTOR FINDS THAT:

- (1) The application has been filed in due form.
- (2) Satisfactory information has been provided that all offset operators have been duly notified of the application.
- (3) No objection has been received within the waiting period as prescribed by Rule 701(B).
- (4) The proposed injection well is eligible for conversion to injection under the terms of Rule 701.
- (5) The proposed expansion of the above referenced waterflood project will not cause waste nor impair correlative rights.
- (6) The application should be approved.

IT IS THEREFORE ORDERED THAT:

The applicant, SDX Resources, Inc., be and the same is hereby authorized to inject water into the Grayburg and San Andres formations at approximately 2072 feet to approximately 2600 feet through 2 3/8-inch plastic lined tubing set in a packer located within 100 feet of the uppermost injection perforations in the following described wells for purposes of secondary recovery to wit:

Artesia Unit Well No.1

1650' FSL & 460' FWL

Unit Letter 'L', Section 26, Township 17 South, Range 28 East

Injection Interval: 2072 feet to 2600 feet

Packer Setting: 1972 feet

Maximum Injection Pressure: 394 psig

Located in Eddy County, New Mexico.

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 .2 psi per foot of depth to the uppermost injection perforation.

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 Grayburg or San Andres formations. 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 injection equipment and of the mechanical integrity tests 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.

Administrative Order WFX-733

SDX Resources, Inc.

March 4, 1998

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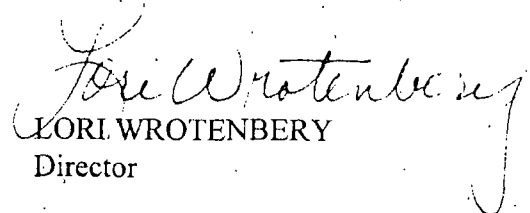
The subject well shall be governed by all provisions of Division Order No. R-3311, as amended and Rules 702-706 of the Division Rules and Regulations not inconsistent herewith.

PROVIDED FURTHER THAT, jurisdiction is retained by the Division for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh water or (2) consistent with the requirements in this order, whereupon the Division may, after notice and hearing, terminate the injection authority granted herein.

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.

DONE at Santa Fe, New Mexico, on this 4th day of March, 1998.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


LORI WROTENBERY
Director

SEAL

LW/BES/kv

cc: Oil Conservation Division - Artesia



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

Water Analysis Report

Customer: Quantum Resources Management, LLC Sample #: 17099
 Area: Permian Basin Analysis ID #: 17543
 Lease: Leonard B
 Location: 4 0
 Sample Point: Wellhead

		Anions		Cations	
		mg/l	meq/l	mg/l	meq/l
Sampling Date:	1/24/2014	Chloride:	127789.6	Sodium:	70230.0
Analysis Date:	1/29/2014	Bicarbonate:	122.0	Magnesium:	3483.0
Analyst:	Catalyst	Carbonate:		Calcium:	5280.0
TDS (mg/l or g/m3):	209533.5	Sulfate:	1400.0	Potassium:	1110.0
Density (g/cm3):	1.144		29.15	Strontium:	118.9
				Barium:	0.0
Hydrogen Sulfide:	34			Iron:	0.0
Carbon Dioxide:	255			Manganese:	0.000
Comments		pH at time of sampling:	7.11		
		pH at time of analysis:			
		pH used in Calculation:	7.11		
		Temperature @ lab conditions (F):	75	Conductivity (micro-ohms/cm):	216000
				Resistivity (ohm meter):	.0463

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl

Temp	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		
	°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
80		0.68	6.01	-0.20	0.00	-0.16	0.00	-0.20	0.00	0.00	0.00
100		0.69	6.87	-0.27	0.00	-0.18	0.00	-0.23	0.00	0.00	0.00
120		0.69	8.02	-0.34	0.00	-0.16	0.00	-0.25	0.00	0.00	0.00
140		0.69	9.16	-0.40	0.00	-0.13	0.00	-0.25	0.00	0.00	0.00
160		0.70	10.31	-0.44	0.00	-0.07	0.00	-0.25	0.00	0.00	0.00
180		0.71	11.74	-0.49	0.00	0.00	0.00	-0.24	0.00	0.00	0.00
200		0.74	13.17	-0.52	0.00	0.08	95.91	-0.23	0.00	0.00	0.00
220		0.77	14.89	-0.55	0.00	0.18	189.82	-0.22	0.00	0.00	0.00

**BUREAU OF LAND MANAGEMENT
Carlsbad Field Office
620 East Greene Street
Carlsbad, New Mexico 88220
575-234-5972**

4/9/2014 Approved subject to conditions of approval JDB:

**Disposal of Produced Water From Federal Wells
Conditions of Approval**

Approval of the produced water disposal methodology is subject to the following conditions of approval:

1. This agency shall be notified of any change in your method or location of disposal.
2. Compliance with all provisions of Onshore Order No. 7.
3. This agency shall be notified of any spill or discharge as required by NTL-3A.
4. This agency reserves the right to modify or rescind approval whenever it determines continued use of the approved method may adversely affect the surface or subsurface environments.
5. All above ground structures on the lease shall be painted Shale Green (5Y 4/2), or as per approved APD stipulations. This is to be done within 90 days, if you have not already done so.
6. Any on-lease open top storage tanks shall be covered with a protective cover to prevent entry by birds and other wildlife.
7. This approval should not constitute the granting of any right-of-way or construction rights not granted by the lease instrument.
8. If water is transported via a pipeline that extends beyond the lease boundary, then you need to submit within 30 days an application for right-of-way approval to the Realty Section in this office if you have not already done so.
9. This approval is for produced water disposal only and any hydrocarbons removed from lease by this method will be subject to royalty payment as well as other enforcement actions as necessary.
10. Disposal at any other site will require prior approval.
11. Subject to like approval by NMOCD.

JDB2014