

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED

MAY 26 2015

FORM APPROVED  
OMB No. 1004-0137  
Expires: October 31, 2014

**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.**

5. Lease Serial No.  
NMNM68820

6. If Indian, Allottee or Tribe Name

**SUBMIT IN TRIPLICATE - Other instructions on page 2.**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator  
Endurance Resources LLC

3a. Address  
203 West Wall Street Suite 1000 Midland TX 79701

3b. Phone No. (include area code)  
432-242-4680

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
330 FSL & 660 FEL UL P Sec. 19 T23S R34E

7. If Unit of CA/Agreement, Name and/or No.

8. Well Name and No.  
Nocaster 19 Federal 4H

9. API Well No.  
30-025-41449

10. Field and Pool or Exploratory Area  
Antelope Ridge Bone Spring West

11. County or Parish, State  
Lea County, New Mexico

**12. CHECK THE 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 must 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 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Water is being produced from the Bone Spring formation and is producing approximately 251.46 BWPD. This produced water is being transferred via flowline to the Federal 19 No. 1 SWD (SWD-1067) API No. 30-025-24676 located in NE/4 Sec. 19-T23S-R34E, Lea County, New Mexico.

See attached Administrative Order SWD-1067. Water analysis

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

M. A. Sirgo, III

Title Engineer

Signature

Date 03/12/2015

ACCEPTED FOR RECORD

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Office

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.

BUREAU OF LAND MANAGEMENT

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.

MAY 27 2015



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**  
Governor  
**Joanna Prukop**  
Cabinet Secretary

**Mark E. Fesmire, P.E.**  
Director  
**Oil Conservation Division**

ADMINISTRATIVE ORDER SWD-1067

## APPLICATION OF RAY WESTALL FOR PRODUCED WATER DISPOSAL, LEA COUNTY, NEW MEXICO

### ADMINISTRATIVE ORDER OF THE OIL CONSERVATION DIVISION

Under the provisions of Rule 701(B), RAY WESTALL made application to the New Mexico Oil Conservation Division for permission to utilize for produced water disposal its Federal 19 Well No. 1 (API No. 30-025-24676) located 660 feet from the North line and 660 feet from the East line of Section 19, Township 23 South, Range 34 East, NMPM, Lea 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 is hereby authorized to utilize its Federal 19 Well No. 1 (API No. 30-025-24676) located 660 feet from the North line and 660 feet from the East line of Section 19, Township 23 South, Range 34 East, NMPM, Lea County, New Mexico, in such manner as to permit the injection of produced water for disposal purposes into the Cherry Canyon member of the Delaware Mountain Group through perforations from 6670 feet to 6883 feet and through plastic-lined tubing set with a packer located within 100 feet of the top of the injection interval.

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.

**As preparation for injection, the operator shall plug back the well with cement and cast iron bridge plug to within 200 feet of the bottom permitted injection interval.**

The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge or an approved leak detection device in order to determine leakage in the casing, tubing, or packer.

After installing injection tubing, the casing shall be pressure tested from the surface to the packer setting depth to assure casing integrity.

The wellhead injection pressure on the well shall be limited to **no more than 1334 psi**. In addition, the injection well or system shall be equipped with a pressure limiting device in workable condition which shall, at all times, limit surface injection pressure to the maximum allowable pressure for this well.

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 injection 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 Hobbs district office of the Division of the date and time of the installation of disposal equipment and of any mechanical integrity test so that the same may be inspected and witnessed.

The operator shall immediately notify the supervisor of the Hobbs 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.

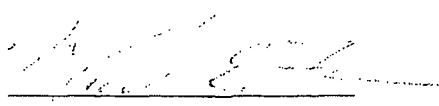
PROVIDED FURTHER THAT, jurisdiction is retained by the Division for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh water or (2) consistent with the requirements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

The operator shall provide written notice of the date of commencement of injection to the Hobbs district office of the Division.

The operator shall submit monthly reports of the disposal operations on Division Form C-115, in accordance with Rule Nos. 706 and 1120 of the Division Rules and Regulations.

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 February 6, 2007.

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MARK E. FESMIRE, P.E.  
Director

MEF/wvj

cc: Oil Conservation Division – Hobbs  
Bureau of Land Management – Carlsbad



# Complete Water Analysis Report SSP v.8

<b>Customer:</b>	ENDURANCE RESOURCES LLC	<b>Sample Point Name</b>	Federal 19 # 1 SWD
<b>District:</b>	New Mexico	<b>Sample ID:</b>	201501009579
<b>Sales Rep:</b>	Wayne C Peterson	<b>Sample Date:</b>	2/25/2015
<b>Lease:</b>	DELEWARE BASIN	<b>Log Out Date:</b>	3/20/2015
<b>Site Type:</b>	Facility	<b>Analyst:</b>	Samuel Newman
<b>Sample Point Description:</b>	TRANSFER PUMP		

**ENDURANCE RESOURCES LLC, DELEWARE BASIN, Federal 19 # 1 SWD**

Field Data			Analysis of Sample			
			Anions:		Cations:	
			mg/L	meq/L	mg/L	meq/L
Initial Temperature (°F):	250	Chloride (Cl⁻):	72820.3	2054.2	Sodium (Na⁺):	40648.5
Final Temperature (°F):	80	Sulfate (SO₄²⁻):	1783.0	37.1	Potassium (K⁺):	722.4
Initial Pressure (psi):	100	Borate (H₃BO₃):	234.0	3.8	Magnesium (Mg²⁺):	897.9
Final Pressure (psi):	15	Fluoride (F⁻):	ND		Calcium (Ca²⁺):	5839.0
		Bromide (Br⁻):	ND		Strontium (Sr²⁺):	304.2
pH:		Nitrite (NO₂⁻):	ND		Barium (Ba²⁺):	0.0
pH at time of sampling:	7.0	Nitrate (NO₃⁻):	ND		Iron (Fe²⁺):	64.7
		Phosphate (PO₄³⁻):	ND		Manganese (Mn²⁺):	1.1
		Silica (SiO₂):	ND		Lead (Pb²⁺):	ND
					Zinc (Zn²⁺):	0.0
Alkalinity by Titration:	mg/L	meq/L				
Bicarbonate (HCO₃⁻):	488.0	8.0			Aluminum (Al³⁺):	ND
Carbonate (CO₃²⁻):	ND				Chromium (Cr³⁺):	ND
Hydroxide (OH⁻):	ND				Cobalt (Co²⁺):	ND
					Copper (Cu²⁺):	ND
aqueous CO₂ (ppm):	400.0	Formic Acid:	ND		Molybdenum (Mo²⁺):	ND
aqueous H₂S (ppm):	68.0	Acetic Acid:	ND		Nickel (Ni²⁺):	ND
aqueous O₂ (ppb):	ND	Propionic Acid:	ND		Tin (Sn²⁺):	ND
		Butyric Acid:	ND		Titanium (Ti²⁺):	ND
Calculated TDS (mg/L):	123803	Valeric Acid:	ND		Vanadium (V²⁺):	ND
Density/Specific Gravity (g/cm³):	1.0805				Zirconium (Zr²⁺):	ND
Measured Density/Specific Gravity	1.0877					
Conductivity (mmhos):	ND				Total Hardness:	18643
Resistivity:	ND					N/A
MCF/D:	No Data					
BOPD:	No Data					
BWPD:	No Data	Anion/Cation Ratio:	0.97		ND = Not Determined	

Conditions		Barite (BaSO <sub>4</sub> )		Calcite (CaCO <sub>3</sub> )		Gypsum (CaSO <sub>4</sub> ·2H <sub>2</sub> O)		Anhydrite (CaSO <sub>4</sub> )	
Temp	Press.	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)
80°F	15 psi		0.000	1.49	106.196	-0.03	0.000	-0.21	0.000
99°F	24 psi		0.000	1.51	106.669	-0.01	0.000	-0.12	0.000
118°F	34 psi		0.000	1.56	107.754	0.00	0.000	-0.02	0.000
137°F	43 psi		0.000	1.61	108.961	0.01	25.047	0.08	135.473
156°F	53 psi		0.000	1.67	110.192	0.02	49.911	0.19	282.401
174°F	62 psi		0.000	1.74	111.443	0.03	74.606	0.29	405.899
193°F	72 psi		0.000	1.81	112.729	0.04	98.558	0.40	507.573
212°F	81 psi		0.000	1.88	114.165	0.06	120.664	0.52	589.633
231°F	91 psi		0.000	1.96	115.692	0.06	139.477	0.63	654.685
250°F	100 psi		0.000	2.04	117.245	0.07	153.306	0.74	705.459

Conditions		Celestite (SrSO <sub>4</sub> )		Halite (NaCl)		Iron Sulfide (FeS)		Iron Carbonate (FeCO <sub>3</sub> )	
Temp	Press.	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)
80°F	15 psi	0.41	125.399	-1.31	0.000	4.01	35.659	1.18	40.238
99°F	24 psi	0.42	127.780	-1.33	0.000	3.86	35.654	1.26	41.175
118°F	34 psi	0.43	129.921	-1.34	0.000	3.77	35.651	1.35	42.105
137°F	43 psi	0.44	132.244	-1.35	0.000	3.72	35.650	1.43	42.869
156°F	53 psi	0.46	135.010	-1.35	0.000	3.68	35.649	1.51	43.468
174°F	62 psi	0.47	138.335	-1.36	0.000	3.66	35.649	1.58	43.930
193°F	72 psi	0.50	142.220	-1.36	0.000	3.66	35.649	1.64	44.283
212°F	81 psi	0.52	146.576	-1.36	0.000	3.67	35.651	1.69	44.581
231°F	91 psi	0.55	151.252	-1.36	0.000	3.69	35.653	1.74	44.817
250°F	100 psi	0.58	156.061	-1.36	0.000	3.72	35.655	1.77	44.992

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered

**Note 2:** Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the eight (8) scales.

Note 3: Saturation Index predictions on this sheet use pH and alkalinity; %CO<sub>2</sub> is not included in the calculations



**ScaleSoftPitzer™**  
**SSP2010**

**Comments:**