Revised March 23, 2017

MM 3/13/2018

RECEIVED:	REVIEWER:	TYPE: SWD	APP NO: pMAM1805145422

ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

MA ~~2/26/2018~~

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: BOPCO, LP **OGRID Number:** 260737
Well Name: Big Eddy Unit 14 Federal SWD **API:** 30-015-43649
Pool: SWD; Devonian-Montoya **Pool Code:** 97803

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
☐ NSL ☐ NSP (PROJECT AREA) ☐ NSP (PRORATION UNIT) ☐ SD

B. Check one only for [I] or [II]
[I] Commingling – Storage – Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
[II] Injection – Disposal – Pressure Increase – Enhanced Oil Recovery
☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR

FOR OCD ONLY
☐ Notice Complete
☐ Application Content Complete

2) **NOTIFICATION REQUIRED TO:** Check those which apply.
A. ☒ Offset operators or lease holders
B. ☐ Royalty, overriding royalty owners, revenue owners
C. ☒ Application requires published notice
D. ☐ Notification and/or concurrent approval by SLO
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.

02/19/18
Date

Tracie J. Cherry
Print or Type Name

Tracie J Cherry
Signature

432-221-7379
Phone Number

tracie_cherry@xtoenergy.com
e-mail Address

Tracie J Cherry
Regulatory Analyst
XTO Energy Inc.
500 West Illinois, Suite 100
Midland, TX 79701
(432) 221-7379

FEB 26 2018 PM03:19

Certified Mail 7016 1970 0000 4404 3534
February 19, 2018

Oil Conservation Division
Attention: Michael McMillan
1220 S. St. Francis
Santa Fe, New Mexico 87505

Re: Notice of Application for Authorization to Dispose
Big Eddy Unit 14 Federal SWD #1
Sec. 29, T21S, 29E
Eddy County, New Mexico

Mr. McMillan:

Enclosed please find BOPCO, L.P.'s **Application for Authorization for Disposal** for disposal purposes only into the subject well.

The well is on Federal land and a complete copy of the application has been sent to the BLM's Carlsbad office via certified mail. Devon Energy holds offset operating rights on two parcels and have also been furnished a copy of the application via certified mail. A Legal Notice was published in the *Carlsbad Current Argus* on Thursday, February 15; the original Publisher's Affidavit will be forwarded to you when it is received in our office.

If you should have any questions or require additional information, please do not hesitate to contact me.

Sincerely,

Tracie J Cherry
Regulatory Analyst

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: ____ Secondary Recovery ____ Pressure Maintenance XX Disposal ____ Storage
Application qualifies for administrative approval? XX Yes ____ No

II. OPERATOR: BOPCO, LP

ADDRESS: 6401 Holiday Hill Rd. Bldg 5, Suite 200, Midland, TX 79707

CONTACT PARTY: Tracie J. Cherry PHONE: 432-221-7379

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 XX 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:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
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.).

*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: Tracie J. Cherry TITLE: Regulatory Analyst

SIGNATURE: Tracie J Cherry DATE: 02/19/18

E-MAIL ADDRESS: tracie_cherry@xtoenergy.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: ____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

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. 1) Lease name: **Big Eddy Unit 14 Federal SWD**
Well #: **1** **API # 30-015-43649**
Section: **14**
Township: **20S**
Range: **31E**
Footage: **1110 FSL & 250 FWL**

2) Casing Info:

Casing size	Set depth	Sacks cmt	Hole size	TOC	Method
18-5/8", 87.5# J-55 BTC	850	1,320	24	Surface	Circulate
13-3/8" 61# J-55 BTC	2,400	1,820	17-1/2	Surface	Circulate
9-5/8" 47# L-80 LTC	4750 DV @ 2820	1,970	12-1/4	Surface	Circulate
7" 32# P-110 BTC	14,250	720	8-3/4	4250	CBL

3) Tubing to be used (size, lining material, setting depth):
4-1/2", 13.65#, P110 IPC tubing @ 14,150'

4) Name, model, and depth of packer to be used:
Baker Series F nickle plated permanent packer @ 14,150'

B. 1) Name of the injection formation and, if applicable, the field or pool name:
SWD; Devonian-Montoya (97803)

2) The injection interval and whether it is perforated or open hole:
Open hole 14,250' - 15,540'

3) State if the well was drilled for injection or, if not, the original purpose of the well:
This well is being drilled for the purpose of injection

4) Give the depths of any other perforated intervals and detail on the sacks of cement or BPs used to seal off such perforations:
N/A

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:
Higher: Within a 2 mile radius of the proposed well, production has been reported from the Delaware (+/-4560') and Bone Spring (+/-7395') formations.
Lower: None

C-108 DATA

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.
Map attached.

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 wells type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
There are no wells penetrating the injection zone within the half mile area of review

VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected: **20,000 average, 40,000 maximum BWPD**
2. Whether the system is open or closed: **closed**
3. Proposed average and maximum injection pressure: **2,000 psi average, 2,850 psi maximum**
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water: **Produced water from Delaware, Bone Spring and Wolfcamp (analysis attached)**
5. If injection is for disposal purposes into a zone not productive of oil & gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water: N/A **One Devonian disposal well exists +/- 2 miles NNW**

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 TDS 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:

Lithologic Detail:	**Carbonate**
Geological Name:	**Devonian-Montoya**
Thickness:	**1,255**
Depth:	**14291-15546**

The Rustler Formation is a known source of fresh water throughout this geographic area. Average depth of Rustler is 610' - 940'.
No sources of fresh water are known to exist below the proposed disposal zone.

Devonian is not expected to be oil bearing in this area. Two deep tests, bracketing the proposed application (BEU 14 Fed 1 SWD), within a two mile radius, found the Devonian to be wet. The 1953 vintage G H Cobb Fed 1 (Sec 23, T20S-R31E) drilled 1255' of Devonian and older carbonates above the Simpson Group; five drill stem tests throughout the interval tested water without oil shows. The 1961 vintage BEU 1 (Sec 3, T20S-R31E) drilled 325' of Devonian; drill stem tested water without oil shows. The well has been renamed the BE SWD 1 and has been operated as a disposal well in the zone since August 2012. Structurally, the proposed BEU 14 Fed 1 SWD lies between these 2 locations in an area characterized by low dip to the east-southeast. There is no structural close at the location for the entrapment of hydrocarbons. The Devonian was chosen as a disposal interval due to the storage capacity on the intra-formational dolomite.

IX. Describe the proposed stimulation program, if any:
Acid stimulate with approximately 5000 gallons of 15% NEFE HCL acid.

X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted.)
Logs will be submitted with completion papers when well is drilled.

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.
No water wells within 1 mile of well.

XII. Applicants for disposal wells must make an affimative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydology connection between the disposal zone and any underground sources of drinking water.
(See attached affidavit)

BEU 14 Fed 1 SWD

Proposed SWD Schematic (Nov 15, 2017)

County: Eddy
SHL: 690' FSL, 175' FWL
Sec 14, T 20S, R 31E

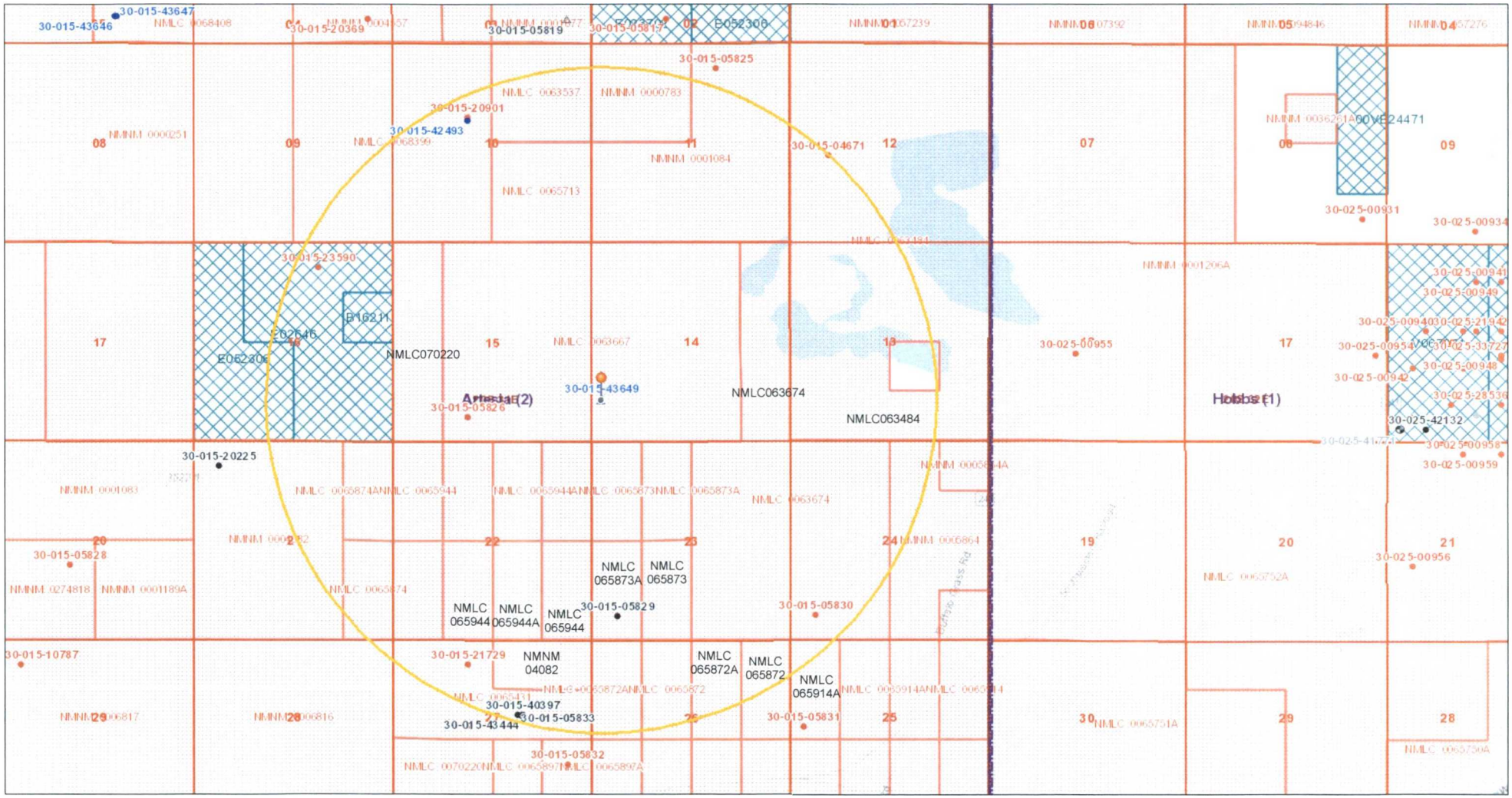
BHL: 690' FNL, 175' FWL
Sec 14, T 20S, R 31E

XTO ENERGY

AFE # 1704324
XTO ID # 735199
API # ~~TBD~~ 30-015-43649
Elevation 3451' GL
Rig: TBD (RKB ~25')

Geology (TVD)	Casing & Cement	Wellhead	Hole Size	General Notes
	Lead (100% OH excess) 770 sx 13.5ppg Poz/Class C Top of Lead @ 0' *Tail (100% OH excess)* 550 sx 14.8ppg Class C Top of Tail @ 550'		24"	
610' Rustler	**18-5/8" 87.5# J-55 BTC**		**850' MD**	
			17-1/2"	
940' Top Salt	*Lead (100% OH excess)* 1510 sx 12.8ppg Poz/Class C Top of Lead @ 0' *Tail (100% OH excess)* 310 sx 14.8ppg Class C Top of Tail @ 2100'			
2,050' Base Salt	**13-3/8" 61# J-55 BTC**		**2400' MD**	
			12-1/4"	
2,745' Capitan Reef	*2ndStage* Lead: 760 sx 12.9 ppg Poz/C Tail: 250 sx 14.4 ppg Class C *1st Stage* Lead: 0 sx 12.9 ppg Poz/C Tail: 960 sx 14.8 ppg Class C			ECP/DV Tool to be set at 2820'
4,560' Delaware	**9-5/8" 47# L-80 LTC**		**4750' MD**	
			8-3/4"	
7,395' Bone Spring 10,595' Wolfcamp 11,635' Strawn 12,030' Atoka 12,500' Morrow	*Lead (30% OH excess)* 660 sx 11ppg Poz/Class C Top of Lead @ 4250'			
	Tail (30% OH excess) 60 sx 13.2ppg Class C Top of Tail @ 13750'		**14150' MD** Baker F permanent packer 4-1/2" 13.65# P110 IPC tbg	
13,540' Mississippi Lime 14,120' Woodford 14,291' Devonian	**7" 32# P-110 BTC**		**14250' MD**	
			6"	
Open Hole to TD		~~15540' MD~~ ~15342 or	100' below upper contact Montoya	

Two Mile AOR



2 / 13 / 2018 9 : 44 : 04 AM

1:36,112

Well Locations - Large Scale

- Miscellaneous
- CO2 Active
- CO2 Cancelled
- CO2 New
- CO2, Plugged
- CO2, Temporaily Abandoned
- Gas Active
- Gas, Cancelled, Never Drilled
- Gas, New
- Gas, Plugged
- Gas, Temporarily Abandoned
- Injection, Active
- Injection, Cancelled
- Injection, New
- Injection, Plugged
- Injection, Temporarily Abandoned
- Oil, Active
- Oil, Cancelled
- Oil, New
- Oil, Plugged
- Oil, Temporarily Abondoned
- Salt Water Injection, Active
- Salt Water Injection, Cancelled
- Salt Water Injection, New
- Salt Water Injection, Plugged
- Salt Water Injection Temporarily Abandoned
- Water, Active
- Water, Cancelled
- Water, New
- Water, Plugged
- Water, Temporarily Abandoned
- OCD District Offices
- OCD Districts
- PLSS Townships
- PLSS First Division
- BLM Fluid Min Leases
- NMSLO Oil and Gas Leases

0 0.35 0.7 1.4 mi

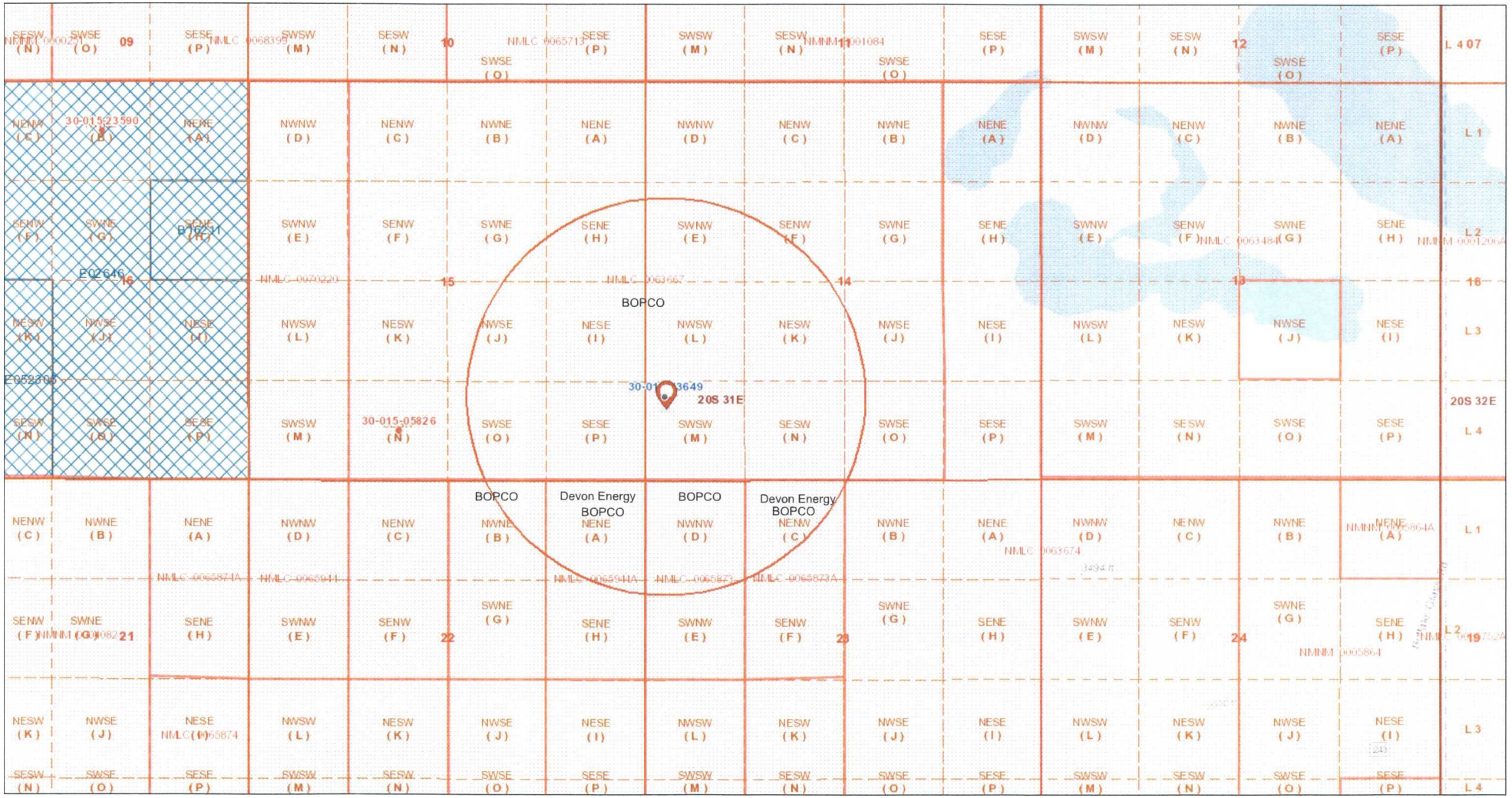
0 0.5 1 2 km

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS

New Mexico Oil Conservation Division

NM OCD Oil and Gas Map. http://nm-emnrd.maps.arcgis.com/apps/webappviewer/: New Mexico Oil Conservation Division

Half Mile AOR



2 / 13 / 2018 9 : 23 : 30 AM

1:18,056

Well Locations - Large Scale

- Miscellaneous
- CO2 Active
- CO2 Cancelled
- CO2 New
- CO2, Plugged
- CO2, Temporarily Abandoned
- Gas Active
- Gas, Cancelled, Never Drilled
- Gas, New
- Gas, Plugged
- Gas, Temporarily Abandoned
- Injection, Active
- Injection, Cancelled
- Injection, New
- Injection, Plugged
- Injection, Temporarily Abandoned
- Oil, Active
- Oil, Cancelled
- Oil, New
- Oil, Plugged
- Oil, Temporarily Abondoned
- Salt Water Injection, Active
- Salt Water Injection, Cancelled
- Salt Water Injection, New
- Salt Water Injection, Plugged
- Salt Water Injection Temporarily Abandoned
- Water, Active
- Water, Cancelled
- Water, New
- Water, Plugged
- Water, Temporarily Abandoned
- OCD District Offices
- PLSS Townships
- PLSS Second Division
- PLSS First Division
- BLM Fluid Min Leases
- NMSLO Oil and Gas Leases

0 0.175 0.35 0.7 mi

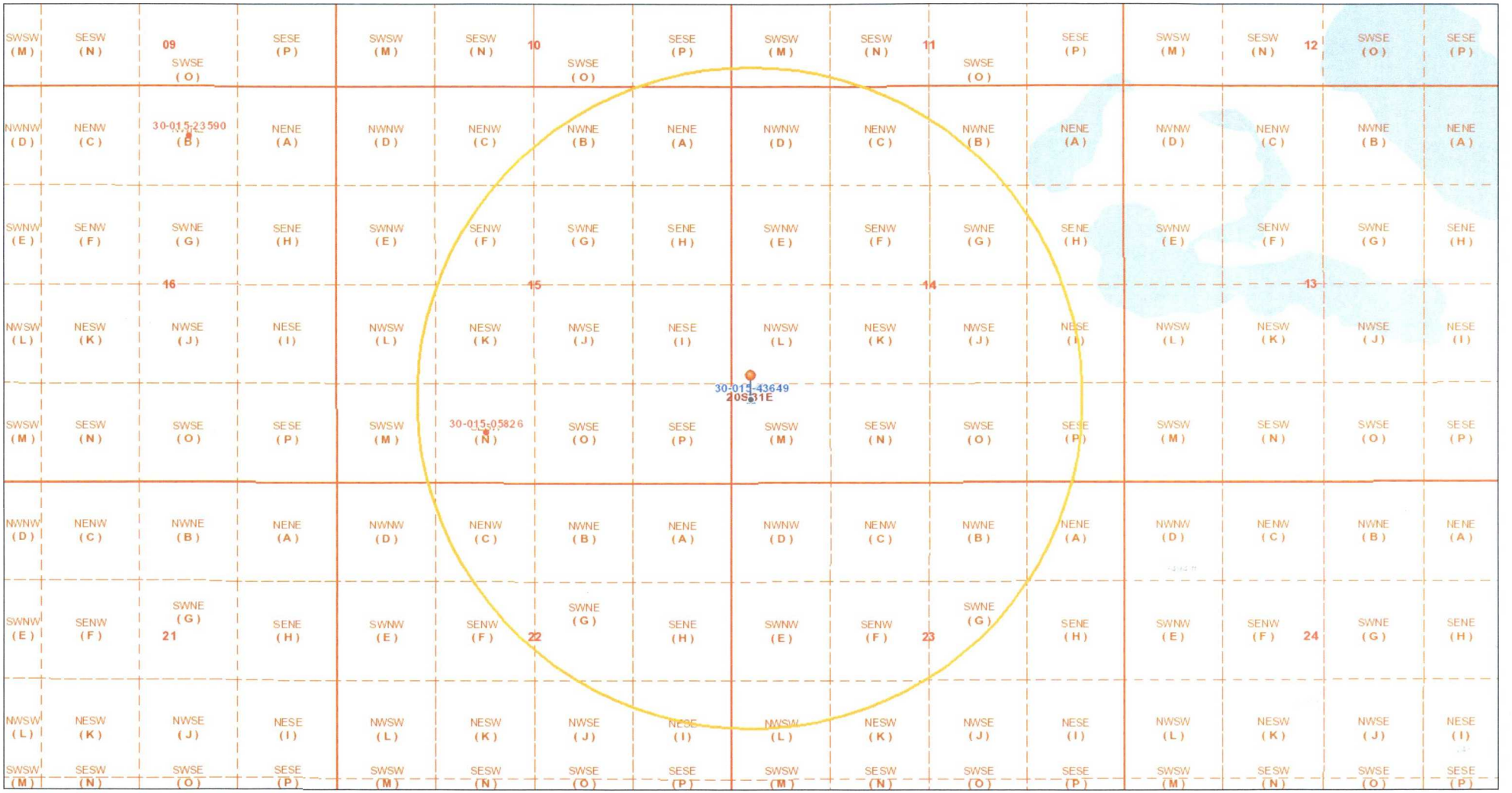
0 0.35 0.7 1.4 km

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS

New Mexico Oil Conservation Division

NM OCD Oil and Gas Map. http://nm-emnrd.maps.arcgis.com/apps/webappviewer/: New Mexico Oil Conservation Division

Water Well Review Area



1 / 25 / 2018 9 : 45 : 15 AM

1:18,056

0 0.175 0.35 0.7 mi

0 0.35 0.7 1.4 km

Well Locations - Large Scale

- Miscellaneous
- CO2 Active
- CO2 Cancelled
- CO2 New
- CO2, Plugged
- CO2, Temporarily Abandoned
- Gas Active
- Gas, Cancelled, Never Drilled
- Gas, New
- Gas, Plugged
- Gas, Temporarily Abandoned
- Injection, Active
- Injection, Cancelled
- Injection, New
- Injection, Plugged
- Injection, Temporarily Abandoned
- Oil, Active
- Oil, Cancelled
- Oil, New
- Oil, Plugged
- Oil, Temporarily Abondoned
- Salt Water Injection, Active
- Salt Water Injection, Cancelled
- Salt Water Injection, New
- Salt Water Injection, Plugged
- Salt Water Injection Temporarily Abandoned
- Water, Active
- Water, Cancelled
- Water, New
- Water, Plugged
- Water, Temporarily Abandoned
- OCD District Offices
- PLSS Townships
- PLSS Second Division
- PLSS First Division

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS

New Mexico Oil Conservation Division

NM OCD Oil and Gas Map. http://nm-emnrd.maps.arcgis.com/apps/webappviewer/: New Mexico Oil Conservation Division

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

No PODs found.

PLSS Search:

Section(s): 14, 15, 22, 23 **Township:** 20S **Range:** 31E

New Mexico Office of the State Engineer
Water Column/Average Depth to W ter

No records found.

PLSS Search:

Section(s): 14, 15, 22, 23 **Township:** 20S **Range:** 31E

Wolfcamp

CATALYST
Oilfield Services

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

Water Analysis Report

Customer:	JACAM - BOPCO	Sample #:	42618
Area:	Permian Basin	Analysis ID #:	40695
Lease:	Big Eddy Unit	BOPD:	
Location:	265H (30-015-35644)	BWPD:	
Sample Point:	Wellhead		

		Anions	mg/l	meq/l	Cations	mg/l	meq/l
Sampling date:	2/8/2017	Chloride:	98373.6	2774.13	Sodium:	46990.0	2043.95
Analysis date:	2/15/2017	Bicarbonate:	97.6	1.60	Magnesium:	1229.0	101.10
Analysis:	Catalyst	Carbonate:		0.00	Calcium:	10850.0	541.42
TDS (mg/l or g/m3):	162035	Sulfate:	0.0	0.00	Potassium:	412.8	10.56
Density (g/cm3):	1.112	Borate:	406.1	2.57	Strontium:	3583.0	81.78
Hydrogen Sulfide:		Phosphorus:		0.00	Barium:	20.3	0.30
Carbon Dioxide:	540				Iron:	70.0	2.53
Comments:		pH at time of sampling:		6.05	Manganese:	2.9	0.11
		pH at time of analysis:					
		pH used in Calculation:		6.05	Conductivity (micro-ohms/cm):		188700
		Tempeture @ lab conditions (F):		75	Resistivity (ohm meter):		0.0530

	Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Calcite CaCO3		Gypsum CaSo4*2H2O		Anhydrite CaSO4		Celestite SrSO4		Barite BaSO4		
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	
120	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Delaware

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

CATALYST
Oilfield Services

Water Analysis Report

Customer:	JACAM - BOPCO	Sample #:	42620
Area:	Permian Basin	Analysis ID #:	40698
Lease:	Big Eddy Unit	BOPD:	
Location:	D1-5 4H (30-015-40397)	BWPD:	
Sample Point:	Wellhead		

		Anions	mg/l	meq/l	Cations	mg/l	meq/l
Sampling date:	2/8/2017	Chloride:	176361.9	4973.41	Sodium:	69290.0	3013.95
Analysis date:	2/15/2017	Bicarbonate:	122.0	2.00	Magnesium:	4491.0	369.45
Analysis:	Catalyst	Carbonate:		0.00	Calcium:	30500.0	1521.96
TDS (mg/l or g/m3):	284236	Sulfate:	120.0	2.50	Potassium:	1799.0	46.01
Density (g/cm3):	1.198	Borate:	230.0	1.45	Strontium:	1261.0	28.78
Hydrogen Sulfide:	170	Phosphorus:		0.00	Barium:	0.0	0.00
Carbon Dioxide:	950				Iron:	51.7	1.87
Comments:		pH at time of sampling:		5.86	Manganese:	9.8	0.36
		pH at time of analysis:					
		pH used in Calculation:		5.86	Conductivity (micro-ohms/cm):		245000
		Tempeture @ lab conditions (F):		75	Resistivity (ohm meter):		0.0408

	Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Calcite CaCO3		Gypsum CaSo4*2H2O		Anhydrite CaSO4		Celestite SrSO4		Barite BaSO4		
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	
120	0.29	5.61	-0.78	0.00	-0.58	0.00	-0.52	0.00	0.00	0.00	

Bone Spring

NALCO Champion

An Ecolab Company

Water Analysis Report

Attention:**Anthony.Baeza@CHAMP-TECH.com**

Location Code: **363048**

Sample ID: **AJ83455**

Login Batch: **2017-12-05-001 GC**

Collection Date: **11/17/2017**

Receive Date: **12/05/2017**

Report Date: **12/07/2017**

Customer: **XTO Energy (500086467)**

Region: **Delaware Basin**

Location: **Big Eddy Unit DI5**

System: **Production System**

Equipment: **Well 024H** (30-015-43444)

Lab ID: **ABU-1031**

Sample Point: **Well Head**

Analyses	Result	Unit
Calculated pH	**7.00**	
Dissolved CO2	**70**	mg/L
Dissolved H2S	**1.71**	mg/L
Gas per Day	**837**	Mcf/D
Oil per Day	**790**	B/D
Pressure	**401**	psi
Temperature	**87**	° F
Water per Day	**2470**	B/D

Analyses	Result	Unit
Bicarbonate	**134.2**	mg/L
Conductivity (Calculated)	**191277**	µS - cm3
Ionic Strength	**2.39**	
Resistivity	**0.052**	ohms - m
Specific Gravity	**1.097**	
Total Dissolved Solids	**122440**	mg/L

Cations	Result	Unit
Iron	**21.73**	mg/L
Manganese	**1.18**	mg/L
Barium	**1.15**	mg/L
Strontium	**214.59**	mg/L
Calcium	**8227.71**	mg/L
Magnesium	**1363.72**	mg/L
Sodium	**35085.76**	mg/L
Potassium	**947.35**	mg/L
Boron	**24.53**	mg/L
Lithium	**37.77**	mg/L
Copper	**0.02**	mg/L
Zinc	**0.49**	mg/L
Lead	**0.14**	mg/L
Cobalt	**0.12**	mg/L
Chromium	**0.01**	mg/L
Silicon	**10.83**	mg/L
Aluminum	**0.62**	mg/L
Molybdenum	**0.02**	mg/L
Phosphorus	**0.22**	mg/L

Anions	Result	Unit
Bromide	678.97	mg/L
Chloride	76731	mg/L
Sulfate	659	mg/L

Scaling predictions calculated using Scale Soft Pitzer 2017

NALCO Champion

An Ecolab Company

Customer: **XTO Energy (500086467)**

Equipment: **Well 024H**

Sample ID: **AJ83455**

Collection Date: **11/17/2017**

PTB Value

	Barite PTB	Calcite PTB	Celestite PTB	Gypsum PTB	Halite PTB	Iron Carbonate PTB	Iron Sulfide PTB
50°	0.57	0.00	0.00	0.00	0.00	0.00	0.00
75°	0.48	0.00	0.00	0.00	0.00	0.00	0.00
100°	0.34	1.09	0.00	0.00	0.00	0.00	0.00
125°	0.16	7.52	0.00	0.00	0.00	0.00	0.00
150°	0.00	12.69	0.00	0.00	0.00	0.00	0.89
175°	0.00	16.90	0.00	0.00	0.00	0.00	2.19
200°	0.00	20.35	0.00	0.00	0.00	0.00	3.38
225°	0.00	23.22	0.00	0.00	0.00	0.00	4.44
250°	0.00	25.60	10.54	0.00	0.00	0.76	5.39
275°	0.00	27.58	21.61	0.00	0.00	2.80	6.21
300°	0.00	29.24	31.61	0.00	0.00	4.32	6.93
325°	0.00	30.61	40.64	0.00	0.00	5.40	7.55
350°	0.00	31.74	48.77	0.00	0.00	6.11	8.06
375°	0.00	32.65	56.03	0.00	0.00	6.45	8.49
400°	0.00	33.38	62.29	0.00	0.00	6.42	8.83

Scaling predictions calculated using Scale Soft Pitzer 2017

NALCO Champion

An Ecolab Company

Customer: **XTO Energy (500086467)**

Sample ID: **AJ83455**

Equipment: **Well 024H**

Collection Date: **11/17/2017**

Saturation Index

	Barite SI	Calcite SI	Celestite SI	Gypsum SI	Halite SI	Iron Carbonate SI	Iron Sulfide SI
50°	0.79	-0.84	-0.19	-0.25	-1.33	-2.09	-1.05
75°	0.52	-0.15	-0.21	-0.29	-1.35	-1.29	-0.28
100°	0.30	0.03	-0.20	-0.30	-1.37	-1.03	-0.17
125°	0.12	0.19	-0.18	-0.31	-1.38	-0.80	-0.05
150°	-0.04	0.36	-0.14	-0.31	-1.39	-0.59	0.09
175°	-0.16	0.52	-0.10	-0.33	-1.39	-0.40	0.23
200°	-0.27	0.67	-0.10	-0.36	-1.39	-0.23	0.37
225°	-0.36	0.82	-0.01	-0.40	-1.40	-0.09	0.51
250°	-0.44	0.97	0.04	-0.45	-1.39	0.04	0.65
275°	-0.52	1.12	0.09	-0.50	-1.39	0.14	0.78
300°	-0.59	1.26	0.13	-0.54	-1.39	0.23	0.92
325°	-0.67	1.40	0.17	-0.55	-1.38	0.30	1.05
350°	-0.74	1.53	0.21	-0.52	-1.37	0.34	1.17
375°	-0.83	1.65	0.25	-0.42	-1.36	0.37	1.28
400°	-0.92	1.76	0.28	-0.23	-1.34	0.36	1.38

Scaling predictions calculated using Scale Soft Pitzer 2017

NALCO Champion

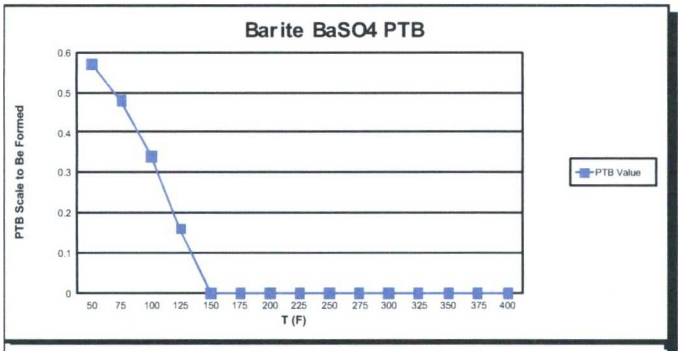
An Ecolab Company

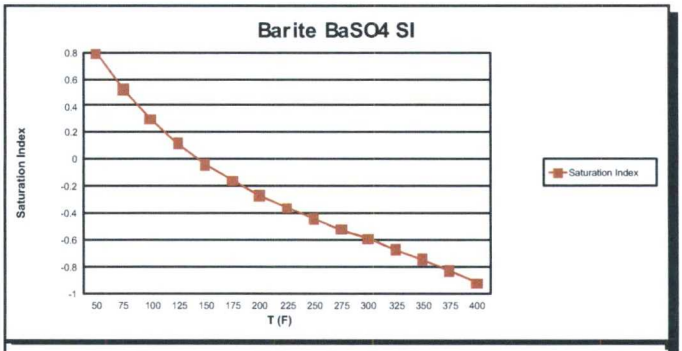
Customer: **XTO Energy (500086467)**

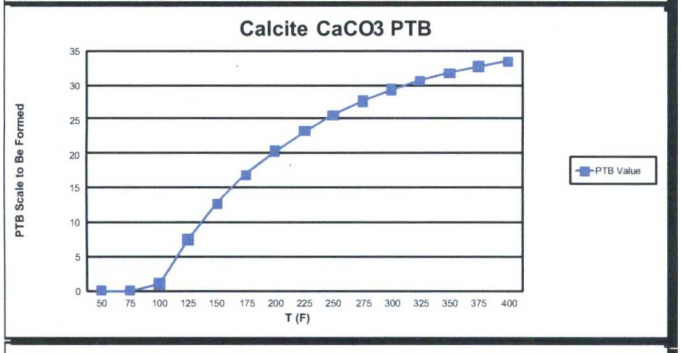
Equipment: **Well 024H**

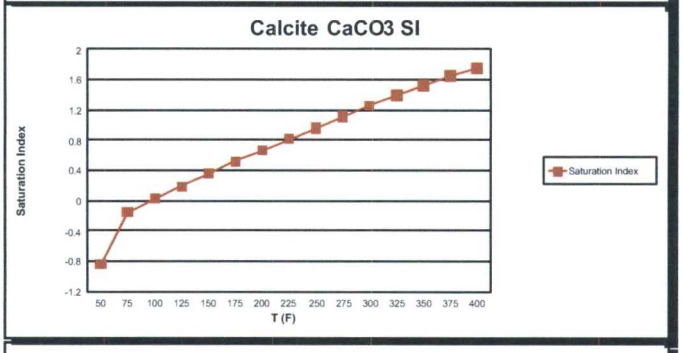
Sample ID: **AJ83455**

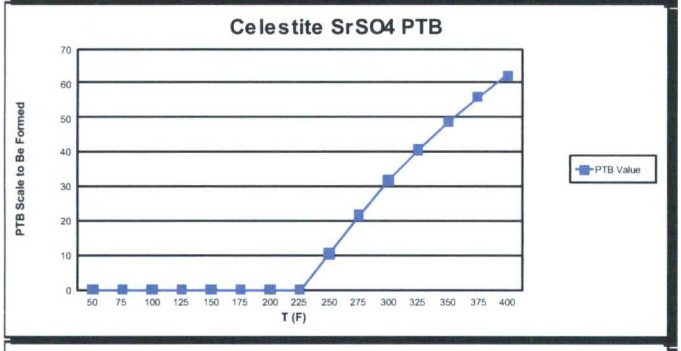
Collection Date: **11/17/2017**

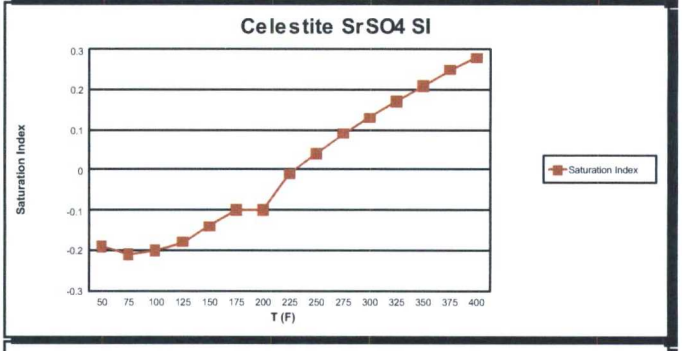


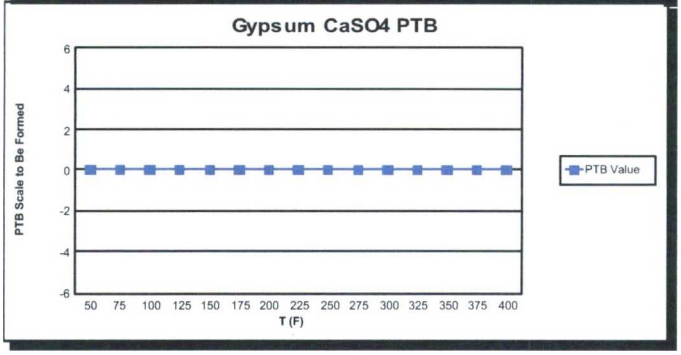


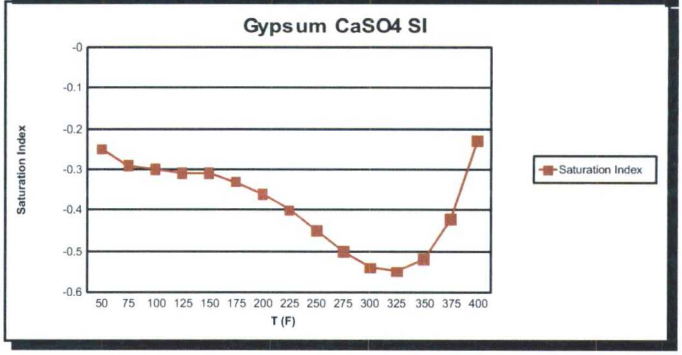












Scaling predictions calculated using Scale Soft Pitzer 2017

NALCO Champion

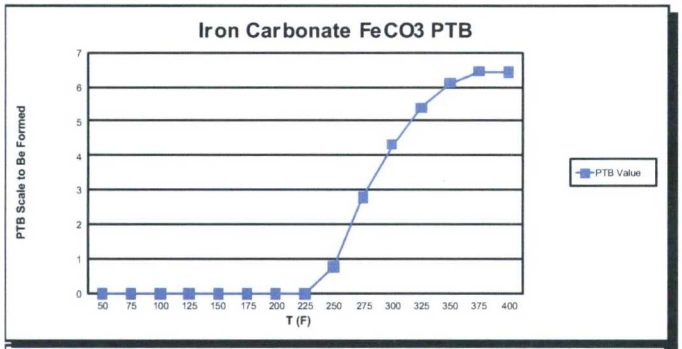
An Ecolab Company

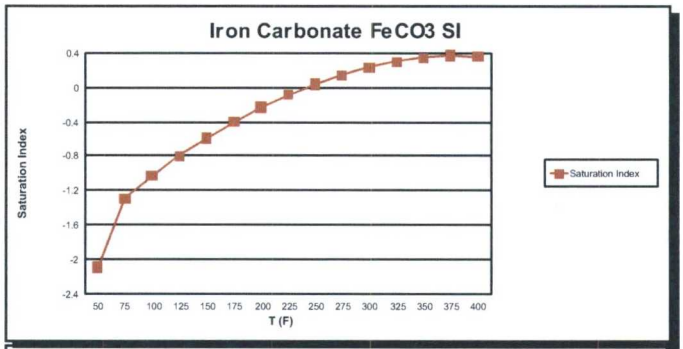
Customer: **XTO Energy (500086467)**

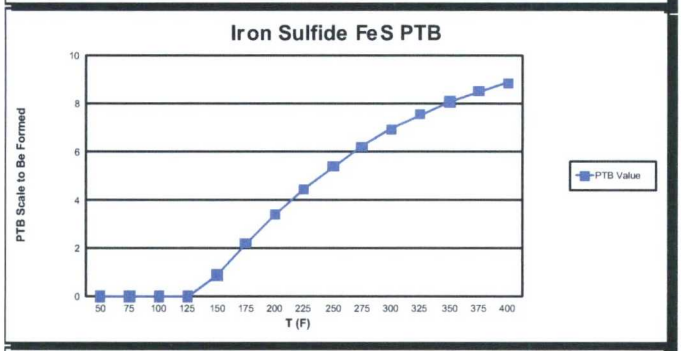
Equipment: **Well 024H**

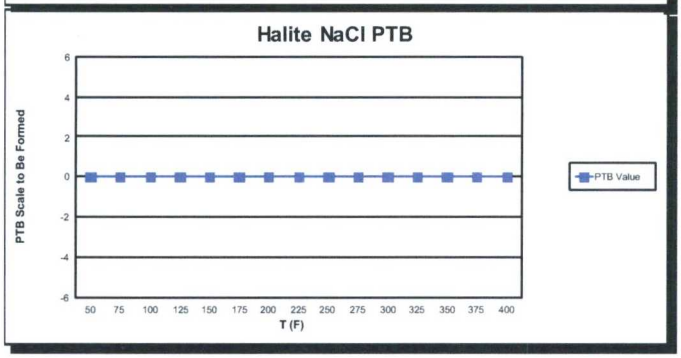
Sample ID: **AJ83455**

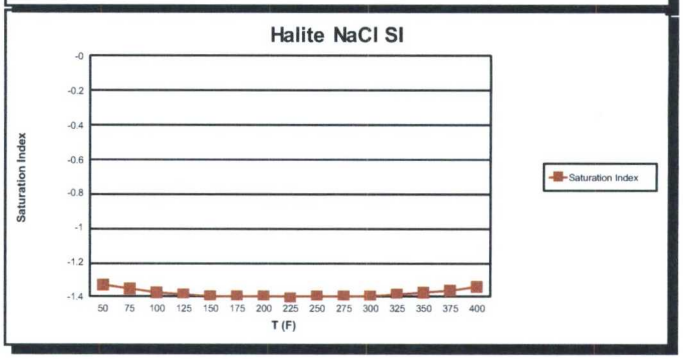
Collection Date: **11/17/2017**











Comments:

Scaling predictions calculated using Scale Soft Pitzer 2017

C-108 Application for Authorization to Inject

XTO Energy
Big Eddy Unit 14 1 SWD
Big Eddy Unit, 14-T20S-R31E
Eddy County, New Mexico

Available engineering and geological data have been examined and no evidence of open faults of hydrologic connection between the disposal zone and any underground sources of drinking water has been found.

Thomas M Anderson

1/28/2018

Thomas M. Anderson
Geologist
XTO Energy

Date

CERTIFIED MAILING LIST
BOPCO, LP
Big Eddy Unit 14 Federal SWD #1

Certified #7016 1970 0000 4404 3510
Bureau of Land Management
620 E. Greene Street
Carlsbad NM 88220-6292

Certified #7016 1970 0000 4404 3527
Devon Energy Production Co
333 W Sheridan Avenue
Oklahoma City, OK 73102-5010

McMillan, Michael, EMNRD

From: Cherry, Tracie <Tracie_Cherry@xtoenergy.com>
Sent: Wednesday, March 21, 2018 3:42 PM
To: McMillan, Michael, EMNRD
Subject: Big Eddy Unit 14 Federal SWD #1 (30-015-43649)
Attachments: 1446_001.pdf

Hello Mike.

Attached are the return receipts from the certified mail notifications for the referenced SWD application.

If you have any questions, don't hesitate to contact me.

Tracie

From: noreply2@xtoenergy.com [mailto:noreply2@xtoenergy.com]
Sent: Wednesday, March 21, 2018 4:37 PM
To: Cherry, Tracie <Tracie_Cherry@xtoenergy.com>
Subject: Attached Image

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Carl Allen
Devon Energy Production
333 Sheridan Ave
Oklahoma City OK 73102

9590 9402 2337 6225 6842 88

2. Article Number (Transfer from service label)
7016 1970 0000 4404 3527

PS Form 3811, July 2015 PSN 7530-02-000-9053 BZU 14 SWD

COMPLETE THIS SECTION ON DELIVERY

A. Signature
David Carrillo ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Adult Signature
☐ Adult Signature Restricted Delivery
☐ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Return Receipt for Merchandise
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Bureau of Land Management
620 E. Greene Street
Carlsbad, NM 88220-6292

9590 9402 2337 6225 6842 71

2. Article Number (Transfer from service label)
7016 1970 0000 4404 3510

PS Form 3811, July 2015 PSN 7530-02-000-9053 BZU 14 SWD

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☐ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Return Receipt for Merchandise
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Intrepid Potash
1996 Potash Mines Rd
Carlsbad, NM 88220

9590 9402 2337 6225 6843 18

2. Article Number (Transfer from service label)
7016 1970 0000 4404 3558

PS Form 3811, July 2015 PSN 7530-02-000-9053 BZU 14 SWD

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Cindy Wilson ☐ Agent ☐ Addressee

B. Received by (Printed Name) Cindy Wilson C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☐ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)
☐ Priority Mail Express®
☐ Registered Mail™
☑ Registered Mail Restricted Delivery
☐ Return Receipt for Merchandise
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

XTO ENERGY

Tracie J Cherry
Regulatory Analyst
XTO Energy Inc.
500 West Illinois, Suite 100
Midland, TX 79701
(432) 221-7379

Certified Mail 7016 1970 0000 4404 3541
February 27, 2018

Oil Conservation Division
Attention: Michael McMillan
1220 S. St. Francis
Santa Fe, New Mexico 87505

Re: Notice of Application for Authorization to Dispose
Big Eddy Unit 14 Federal SWD #1
Sec. 29, T21S, 29E
Eddy County, New Mexico

Mr. McMillan:

Enclosed please find the Publisher's Affidavit for the Legal Notice in the *Carlsbad Current-Argus* as required for BOPCO's Application for Authorization for Disposal.

Also enclosed is a copy of the cover letter with Certified Mail number to Intrepid Potash. Upon reviewing my files, I realized this well is located inside the Secretaries Potash and is required to receive a copy of the application.

If you should have any questions or require additional information, please do not hesitate to contact me.

Sincerely,

Tracie J Cherry
Regulatory Analyst

Affidavit of Publication

State of New Mexico,
County of Eddy, ss.

Danny Fletcher, being first duly sworn, on oath says:

That he is the Publisher of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

February 15 2018

That the cost of publication is **$73.54** and that payment thereof has been made and will be assessed as court costs.

Subscribed and sworn to before me this 16 day of February, 2018

Cynthia Arredondo

My commission Expires 2/13/21

Notary Public

OFFICIAL SEAL
CYNTHIA ARREDONDO
Notary Public
State of New Mexico
My Comm. Expires 2/13/21

February 15, 2018

NOTICE OF APPLICATION FOR WATER DISPOSAL WELL PERMIT

BOPCO, L.P. has applied to the New Mexico Oil Conservation Division for a permit to dispose of produced water into a porous formation not productive of oil or gas.

The applicant proposes to dispose of produced water into the **Big Eddy Unit 14 Federal SWD #1** (Devonian-Montoya Formation). The maximum injection pressure will be 2,760 psi and the maximum rate will be 40,000 bbls. produced water per day. The proposed disposal well is located approximately 24.5 miles NE of Carlsbad, New Mexico in Section 14, T20S, R31E, 1110' FSL & 250' FWL, Eddy County, New Mexico. The produced water will be disposed at a subsurface depth of 14,250' - 15,540'.

Any questions concerning this application should be directed to Tracie J Cherry, Regulatory Analyst, BOPCO, L.P, 6401 Holiday Hill Rd, Bldg 5, Midland, Texas 79707, (432) 221-7379.

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

Tracie J Cherry
Regulatory Analyst
XTO Energy Inc.
500 West Illinois, Suite 100
Midland, TX 79701
(432) 221-7379

Certified Mail 7016 1970 0000 4404 3558
February 19, 2018

Intrepid Potash
1996 Potash Mines Rd
Carlsbad, NM 88220

Re: Notice of Application for Authorization to Dispose
Big Eddy Unit 14 Federal SWD #1
Sec. 29, T21S, 29E
Eddy County, New Mexico

Gentlemen:

This letter and attached copy of our injection well application is to notify you, that XTO Energy (as agent for BOPCO, L.P.) is petitioning the Oil Conservation Division to grant permission to dispose of fluid into a zone not productive of oil and gas in the subject wellbore.

If you should have any questions or require additional information, please contact Tracie J Cherry at the above letterhead address, phone number or via email at tracie_cherry@xtoenergy.com. Any objections or requests for hearing must be filed with the Oil Conservation Division, 1220 South St. Frances Dr., Santa Fe, New Mexico 87505, within 15 days of this letter's date.

Sincerely,

Tracie J Cherry
Regulatory Analyst

7016 1970 0000 4404 3558

CERTIFIED MAIL

7016 1970 0000 4404 3558

McMillan, Michael, EMNRD

From: Cherry, Tracie <Tracie_Cherry@xtoenergy.com>
Sent: Thursday, March 22, 2018 12:50 PM
To: McMillan, Michael, EMNRD
Subject: RE: Big Eddy Unit 14 Federal SWD #1 (30-015-43649)
Attachments: Publishers Affidavit and Intrepid ltr.pdf

I sent it in a separate mailing. My mistake, it was mailed 03/10/2018 (date on letter is wrong). I have attached a copy.

From: McMillan, Michael, EMNRD [mailto:Michael.McMillan@state.nm.us]
Sent: Thursday, March 22, 2018 1:44 PM
To: Cherry, Tracie <Tracie_Cherry@xtoenergy.com>
Subject: RE: Big Eddy Unit 14 Federal SWD #1 (30-015-43649)

I did not see affidavit of publication in the application
Mike

From: Cherry, Tracie [mailto:Tracie_Cherry@xtoenergy.com]
Sent: Thursday, March 22, 2018 12:43 PM
To: McMillan, Michael, EMNRD <Michael.McMillan@state.nm.us>
Subject: RE: Big Eddy Unit 14 Federal SWD #1 (30-015-43649)

Mike:

I sent it 02/27/18 via certified mail. The USPS website says it was delivered but I have not received the green card. There was also a copy of the letter sent to Intrepid.

Tracking Number: 70161970000044043541

Your item was delivered to the front desk or reception area at 10:22 am on March 13, 2018 in SANTA FE, NM 87505.

Status

Delivered

March 13, 2018 at 10:22 am
Delivered, Front Desk/Reception
SANTA FE, NM 87505

Get Updates

From: McMillan, Michael, EMNRD [mailto:Michael.McMillan@state.nm.us]
Sent: Thursday, March 22, 2018 1:34 PM
To: Cherry, Tracie <Tracie_Cherry@xtoenergy.com>
Subject: RE: Big Eddy Unit 14 Federal SWD #1 (30-015-43649)

Need Affidavit of publication
Mike

From: Cherry, Tracie [mailto:Tracie_Cherry@xtoenergy.com]
Sent: Wednesday, March 21, 2018 3:42 PM
To: McMillan, Michael, EMNRD <Michael.McMillan@state.nm.us>
Subject: Big Eddy Unit 14 Federal SWD #1 (30-015-43649)

Hello Mike.

Attached are the return receipts from the certified mail notifications for the referenced SWD application.

If you have any questions, don't hesitate to contact me.

Tracie

From: noreply2@xtoenergy.com [mailto:noreply2@xtoenergy.com]
Sent: Wednesday, March 21, 2018 4:37 PM
To: Cherry, Tracie <Tracie_Cherry@xtoenergy.com>
Subject: Attached Image

Affidavit of Publication

State of New Mexico,
County of Eddy, ss.

Danny Fletcher, being first duly sworn, on oath says:

That he is the Publisher of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

February 15 2018

That the cost of publication is **$73.54** and that payment thereof has been made and will be assessed as court costs.

Subscribed and sworn to before me this 16 day of February, 2018

Cynthia Arredondo

My commission Expires 2/13/21

Notary Public

OFFICIAL SEAL
CYNTHIA ARREDONDO
Notary Public
State of New Mexico
My Comm. Expires 2/13/21

February 15, 2018

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Any questions concerning this application should be directed to Tracie J Cherry, Regulatory Analyst, BOPCO, L.P, 6401 Holiday Hill Rd, Bldg 5, Midland, Texas 79707, (432) 221-7379.

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

MAR 13 2018 PM03:07

FORM C-108 Technical Review Summary [Prepared by reviewer and included with application; V16.2]

DATE RECORD: First Rec: 03/13/18 **Admin Complete:** 03/13/18 **or Suspended:** — Add. Request/Reply: —

ORDER TYPE: WFX / PMX / (SWD) Number: 1746 Order Date: 8/28/18 Legacy Permits/Orders: (R-111-P & BEU)

Well No. 1 Well Name(s): Big Eddy Unit 14 Federal SWD

API : 30-0 15-43649 Spud Date: TBD New or Old (EPA): (New) (*UIC Class II Primacy 03/07/1982*)

Footages 1110' FSL / 250' FWL Lot — or Unit M Sec 14 Tsp 20S Rge 31E County Eddy

General Location: ~25 miles NE of Carlsbad; 3mi N of US180 Pool: SWD; Devonian-Montoya Pool No.: 97803

BLM 100K Map: Hobbs Operator: BOPCO, LP OGRID: 260737 Contact: Tracie Cherry (XTO)

COMPLIANCE RULE 5.9: Total Wells: 80/1614 Inactive: 1 **Fincl Assur:** OK Compl. Order? NO **IS 5.9 OK?** Yes **Date:** 8/28/18 (JAA)

WELL FILE REVIEWED ✓ Current Status: APD approved by BLM; (AC01 - XTO) 4 string Casing

WELL DIAGRAMS: NEW: Proposed ✓ or **RE-ENTER:** Before Conv. ○ After Conv. ○ Logs in Imaging: NA

Planned Rehab Work to Well: Federal well / Onshore #2

Well Construction Details	Sizes (in) Borehole / Pipe	Setting Depths (ft)		Cement Sx or Cf	Cement Top and Determination Method
Planned ✓ or Existing — Surface	24 / 18 5/8	0 to 850	Stage Tool	1320	Circ. to Surface
Planned ✓ or Existing — Interm/Prod	17 1/2 / 13 3/8	0 to 2400	—	1020	Circ. to Surface
Planned ✓ or Existing — Interm/Prod	12 1/4 / 9 5/8	0 to 4750	2820	2stage 1010 / 960	Cir to surface (Bail)
Planned ✓ or Existing — Prod/Liner	8 3/4 / 7	0 to 14250	—	720	CBL / (13750' 4250' Lead
Planned — or Existing — Liner	—	—	—	—	—
Planned ✓ or Existing — OH / PERF	6	14250 to 15540	Inj Length 1092		

Injection Lithostratigraphic Units:	Depths (ft)	Injection or Confining Units 15342 Tops
Adjacent Unit: Litho. Struc. Por.		Mississippian 13540
Confining Unit: Litho. Struc. Por.	0 At contact	Woodford 14120
Proposed Inj Interval TOP:	14250	Devonian 14291
Proposed Inj Interval BOTTOM:	15540	Silurian 100' Montoya 14666
Confining Unit: Litho. Struc. Por.	±100 342	Montoya 15242
Adjacent Unit: Litho. Struc. Por.		Simpson

Completion/Operation Details:

Drilled TD NA PBTD NA

NEW TD 15540 NEW PBTD NA

NEW Open Hole ✓ or NEW Perfs ○

Tubing Size 4 1/2 in. Inter Coated? Yes

Proposed Packer Depth _____ ft

Min. Packer Depth _____ (100-ft limit)

Proposed Max. Surface Press. 2850 psi

Admin. Inj. Press. 2850 (0.2 psi per ft)

AOR: Hydrologic and Geologic Information

POTASH: R-111-P Yes *Noticed?* Yes **BLM Sec Ord** ✓ **WIPP** (NO) *Noticed?* NO Reqested **Salado** T: 940 B: 2050 **NW: Cliff House fm** —

FRESH WATER: Aquifer Shallow Alluvial / Capitan Max Depth [Capitan] **HYDRO AFFIRM STATEMENT** By Qualified Person ✓

NMOSE Basin: Capitan **CAPITAN REEF:** thru ✓ adj — NA — **No. GW Wells in 1-Mile Radius?** 0 FW Analysis? NA

Disposal Fluid: Formation Source(s) BS / Wolfcamp / DMG Analysis? Yes On Lease ○ Operator Only ○ or Commercial ○

Disposal Interval: Inject Rate (Avg/Max BWPD): 20000/40000 Protectable Waters? No Source: Historical System: Closed or Open

HC Potential: Producing Interval? No Formerly Producing? No Method: Logs/DST/P&A/Other Mudlog (ver. 1) 2-Mi Radius Pool Map ✓

AOR Wells: 1/2-M Radius Map and Well List? Yes **No. Penetrating Wells:** 0 [AOR Horizontals: — AOR SWDs: —]

Penetrating Wells: No. Active Wells 0 Num Repairs? — on which well(s)? — Diagrams? —

Penetrating Wells: No. P&A Wells 0 Num Repairs? — on which well(s)? — Diagrams? —

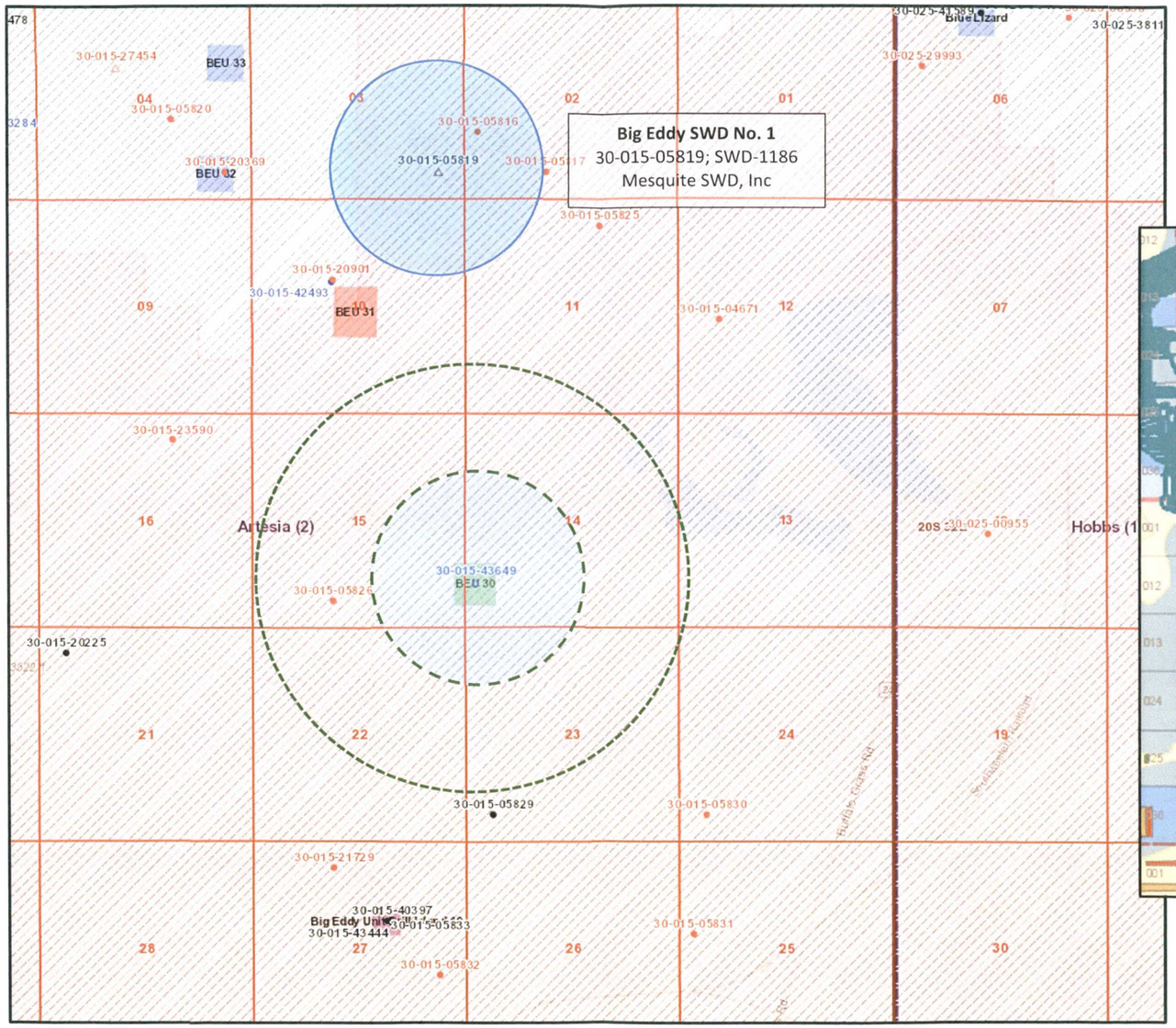
NOTICE: Newspaper Date 02/15/18 Mineral Owner BLM Surface Owner BLM N. Date 02/19/18

RULE 26.7(A): Identified Tracts? Yes Affected Persons: Devon / Intrepid Potash N. Date 02/19/18

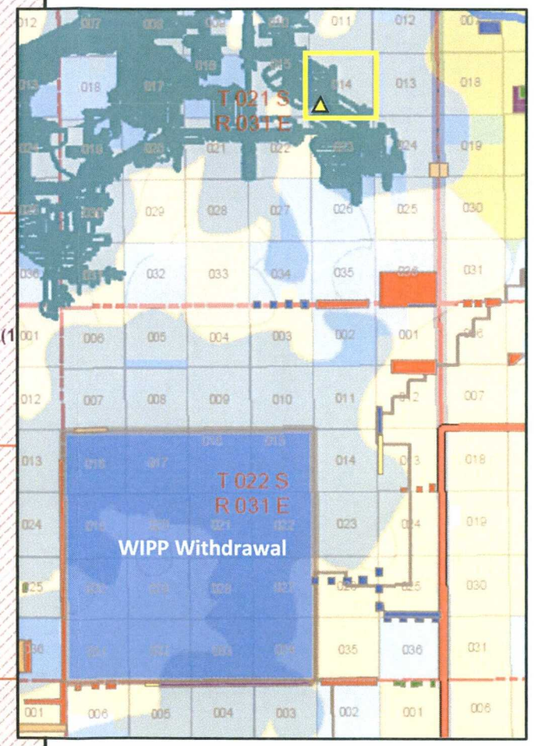
Order Conditions: **Issues:** Too much Montoya (estimated) & upper contact

Additonal COAs: - reduce to 100' of Montoya & note Woodford in order / mudlog / formation picks

Pending Applications for High-Volume Devonian Disposal Wells
C-108 Application for Big Eddy Unit 14 Federal SWD No. 1 – BOPCO LP



From BLM Drilling Island Map 06/25/2018



Big Eddy Unit 14 Federal SWD No. 1; BOPCO LP
API 30-015-43649; Application No. pMAM1808145422; Rcvd 03.13.2018
Proposed interval: Devonian-Montoya interval; 14,250' to 15,540' [order will reduce Montoya portion to less than 100 feet]
Proposed construction: single size tubing; 4.5-inch in 7-inch casing
Surface locations limited by known potash resource area; proposed well within drilling island identified by BLM [designated BEU 30].

Closet Devonian Well with Large-Volume Potential: No large-volume Devonian disposal within two miles all directions;
Big Eddy SWD No. 1 (30-015-05819): injection into Mississippian through Silurian interval; limited by casing size with 3.5-inch tubing maximum; last injection rate: ~4700 BWPD; well has required remedial action in 2014.

DRILLING PLAN: BLM COMPLIANCE
(Supplement to BLM 3160-3)

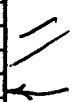
XTO Energy Inc.
BEU 14 Federal 1 SWD
Projected TD: 15540' MD / 14250' TVD
SHL: 690' FSL & 175' FWL , Section 14, T20S, R31E
BHL: 690' FSL & 175' FWL , Section 14, T20S, R31E
Eddy County, NM

1. Geologic Name of Surface Formation

A. Quaternary

2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:

Formation	Well Depth (TVD)	Water/Oil/Gas
Rustler	610'	Water
Top of Salt	940'	Water
Base of Salt	2050'	Water
Capitan Reef	2745'	Water
Delaware	4560'	Water
Brushy Canyon	5780'	Water/Oil/Gas
Bone Spring	7395'	Water/Oil/Gas
First Bone Spring Sand	8620'	Water/Oil/Gas
Second Bone Spring Sand	9210'	Water/Oil/Gas
Third Bone Spring Sand	10220'	Water/Oil/Gas
Wolfcamp	10595'	Water/Oil/Gas
Cisco	11150'	Water/Oil/Gas
Canyon	11520'	Water/Oil/Gas
Strawn	11635'	Water/Oil/Gas
Atoka	12030'	Water/Oil/Gas
Atoka Bank	12190'	Water/Oil/Gas
Morrow	12500'	Water/Oil/Gas
Morrow Clastics	12680'	Water/Oil/Gas
Barnett	13110'	Water/Oil/Gas
Mississippian Lime	13540'	Water/Oil/Gas
Woodford	14120'	Water/Oil/Gas
Siluro-Devonian	14291'	Disposal
Fusselman	14666'	Disposal
Montoya	15242'	Disposal
TD	15540'	
Simpson	15546'	



*** Hydrocarbons @ Brushy Canyon
*** Groundwater depth 40' (per NM State Engineers Office).

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 18-5/8 inch casing @ 850' (90' above the salt) and circulating cement back to surface. The salt will be isolated by setting 13-3/8 inch casing at 2400' and circulating cement to surface. The Capitan Reef zone will be isolated by setting 9-5/8 inch casing at 4750'. An 8-3/4 inch hole will be drilled to 14250' and 7 inch casing will be set and cemented back up to the 9-5/8 inch casing shoe. A 6 inch hole will be drilled to TD at 15540' for an openhole completion.

3. Casing Design

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
24"	0' – 850'	18-5/8"	87.5	BTC	J-55	New	2.97	1.43	17.87
17-1/2"	0' – 2400'	13-3/8"	61	BTC	J-55	New	2.86	1.20	6.57
12-1/4"	0' – 4750'	9-5/8"	47	LTC	L-80	New	1.39	2.24	4.00
8-3/4"	0' – 14250'	7"	32	BTC	P-110	New	2.33	1.33	4.23
6"	14250' – 15540'	Open hole							