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

APPLICATION OF OXY USA WTP LIMITED PARTNERSHIP FOR APPROVAL OF A WATERFLOOD UNIT AGREEMENT FOR PURPOSES OF IMPLEMENTING A PRESSURE MAINTENANCE PROJECT IN THE BENSON; BONE SPRING POOL THROUGH ITS SMOKEY BITS STATE COM NO. 2H WELL, EDDY COUNTY, NEW MEXICO.

APR 17 2018 PM02:55

CASE NO. 16159

APPLICATION

OXY USA WTP Limited Partnership ("OXY") through its undersigned attorneys, hereby files this application with the Oil Conservation Division for an order approving a proposed Waterflood Unit Agreement for purposes of implementing a pilot pressure maintenance project in the Benson; Bone Spring Pool (Pool Code 5200) within the Second Bone Spring Sand formation to inject produced water through its **Smokey Bits State Com No. 2H Well** (API No. 30-015-40196), and in support thereof states:

1. OXY seeks approval of its proposed Smokey Bits Waterflood Unit Agreement and authorization to implement a pilot pressure maintenance project in the Unit Area by the injection of produced water into the Benson; Bone Spring Pool (Pool Code 5200) within the Second Bone Spring Sand formation. A copy of OXY's Application for Authorization to Inject (Division Form C-108) through an initial injection well in the pressure maintenance project area is attached hereto as **Exhibit A.**

2. The proposed Smokey Bits Waterflood Unit and pilot pressure maintenance project area will be comprised of Section 36, Township 18 South, Range 30 East, NMPM, Eddy

County, New Mexico, and will totally approximately 640 acres, more or less, of State lands.

3. The Unit Agreement has been approved by a sufficient percentage of the interest owners within the proposed Unit Area to provide effective control of unit operations.

4. The Applicant, OXY, is designated as Unit Operator in the Unit Agreement. The unitized interval is the stratigraphic equivalent of the Second Bone Spring which covers the depths from 7,862 feet to 8,818 feet in the Oxy Smokey State #1 (30-015-31611), located 1,780 feet from the north line and 1,980 feet from the west line of Section 36, Township 18 South, Range 30 East, Eddy County, New Mexico.

5. OXY has met with the New Mexico State Land Office and is in the process of obtaining preliminary approval of the Waterflood Unit Agreement.

3. OXY requests that the Division establish a procedure for the administrative approval of additional injection wells within the Unit Area / project area without the necessity for further hearings pursuant to 19.15.26.8.F.3 NMAC.

4. OXY also requests authorization to set injection packers in the proposed injection well and all future injection wells within the Unit Area / project area more than 100 feet above the uppermost injection perforation.

5. Notice of this application has been provided to the owners of the surface of the lands on which the proposed injection wells are to be located and to each leasehold operator within one-half mile of the Unit Area / project area boundary.

6. The Unit Agreement and the unitized operation and management of the Unit Area for the purposes of conducting a pressure maintenance project will be in the interest of conservation and the prevention of waste, and that it will protect the correlative rights of all parties concerned.

WHEREFORE, OXY USA WTP Limited Partnership requests that this matter be set for hearing before an Examiner of the Oil Conservation Division on May 17, 2018, and after notice and hearing as required by law, the Division enter its order granting this application.

Respectfully submitted,

HOLLAND & HART LLP

By: _____

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OXY USA WTP LIMITED PARTNERSHIP

CASE 16159 :

Application of OXY USA WTP Limited Partnership for Approval of a Waterflood Unit Agreement for Purposes of Implementing a Pressure Maintenance Project in the Benson; Bone Spring Pool through its Smokey Bits State Com No. 2H well, Eddy County, New Mexico. Applicant in the above-styled cause seeks an order approving its Waterflood Unit Agreement and authorizing a pilot pressure maintenance project in the Benson; Bone Spring Pool (Pool Code 5200) within the Second Bone Spring Sand formation and to inject produced water through its **Smokey Bits State Com No. 2H well** (API No. 30-015-40196), with a surface location 1,575 feet from the North line and 75 feet from the West line (Unit E) of Section 36, Township 18 South, Range 30 East, NMPM, Eddy County, New Mexico. The unitized interval is the stratigraphic equivalent of the Second Bone Spring which covers the depths from 7,862 feet to 8,818 feet in the Oxy Smokey State #1 (30-015-31611), located 1,780 feet from the north line and 1,980 feet from the west line of Section 36, Township 18 South, Range 30 East, Eddy County, New Mexico. The maximum proposed daily injection rate will be 6,000 barrels per day with an average daily injection rate of 1,500 barrels per day. The proposed injection will occur within the Second Bone Spring formation at a depth of approximately 8,532 feet to 8,624 feet deep. The proposed Unit Area and project area is approximately 640 acres in size, consisting of said Section 36. The applicant requests administrative approval to convert future wells with the Unit Area to injection pursuant to 19.15.26.8.F.3 NMAC. Applicant also requests authorization to set injection packers in the proposed injection well and all future injection wells within the Unit Area more than 100 feet above the uppermost injection perforation. The maximum surface injection pressure will be 1,706 psi. Said well is located approximately 15 miles southwest of Maljamar, New Mexico.

Hackberry Pressure Maintenance Pilot Project
Table of Contents

EXHIBIT
A

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 ___X____Pressure Maintenance _____Disposal _____Storage
Application qualifies for administrative approval? _____Yes ___X_____No

II. OPERATOR: _OXY USA WTP Limited Partnerhip_____

ADDRESS: _P.O. Box 4294 Houston, Texas 77210_____

CONTACT PARTY: _Kelley Montgomery_____PHONE: 713-366-5716____

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 ____X____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: __Kelley Montgomery_____TITLE: _Manager Regulatory_____

SIGNATURE: Kelley Montgomery DATE: 2-15-18

E-MAIL ADDRESS: __kelley_montgomery@oxy.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: Please see attached.

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

Side 2

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.

OXY USA Inc.
Hackberry C-108 Application
Application Attachments

C-108 Application
OXY USA Inc.
Hackberry Area
Eddy County, NM

I. This is a pressure maintenance project.

II. OXY USA WTP Limited Partnership (192463)
P.O. Box 4294
Houston, TX 77210
Contact Party: Kelley Montgomery, Oxy (713) 366-5716

III. Injection well data sheets and wellbore schematic diagrams have been attached for the injection well covered by this application.

IV. This is not an application for an expansion of an existing project

V. The map with a two mile radius surrounding the project area and a one-half mile radius for area of review has been attached.

VI. The tabular format of the area of review is attached.

VII. Please see attached for Proposed Operations Description.

VIII. Please see attached signed statement on geologic data for the Second Bone Spring Formation.

IX. No well stimulation is planned.

X. Logs were filed for the existing wells at the time of drilling.

Well Name	Log	Date Submitted
Smokey Bits State Com 2H	CBL/VDL, GR/CCL	10/16/2012
	Three Detector Litho-Density Compensated Neutron/ HNGS	10/15/12
	Hi-Res Laterolog Array Micro-CFL/HNGS	10/15/12
	Dipole Sonic Imager	10/15/12
	PEX-HRLA-NGT-DSI	10/15/12
	Caliper Log	11/9/12

XI. Attached is a water analysis from a fresh water well located in NW/4 SE/4 of Section 26-T18S-R30E.

XII. Attached please find the Hydrologic Connection Statement.

XIII. Attached please find the Proof of Notice.

ITEM III
Well Data

Side 1

INJECTION WELL DATA SHEET

OPERATOR: _OXY USA WTP Limited Partnership_____

WELL NAME & NUMBER: __Smokey Bits State Com #2H (30-015-40196)_____

WELL LOCATION: _1575 FNL 75 FWL_____E _____36-T18S-R30E_____
FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGE

WELLBORE SCHEMATIC

Please see attached.

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: _17 ½"_____ Casing Size:___13 3/8"_____

Cemented with: ___680_____ sx. ***or*** _____ ft^3

Top of Cement: __Surface_____ Method Determined: _Circulated__

Intermediate Casing

Hole Size: __12 ¼"_____ Casing Size:____9 5/8"_____

Cemented with: ___2400_____ sx. ***or*** _____ ft^3

Top of Cement: ____1130'_____ Method Determined: Temp Survey

Production Casing

Hole Size: ___8 ¾"_____ Casing Size:___5 ½"_____

Cemented with: __2520_____ sx. ***or*** _____ ft^3

Top of Cement: ___100'_____ Method Determined: CBL

Total Depth: _13073'_____

Injection Interval

8532-8624' TVD (perforated) 9180-12977' MD (perforated)

(Perforated or Open Hole; indicate which)

Side 2

INJECTION WELL DATA SHEET

Tubing Size: _2-7/8" L-80, 6.5 lbs/ft_____Lining Material: _Tuboscope TK-15_____

Type of Packer: __2-7/8" Weatherford AS1X nickel coated packer_____

Packer Setting Depth: _8354' MD, 8291' TVD_____

Other Type of Tubing/Casing Seal (if applicable): _N/A_____

Additional Data

1. Is this a new well drilled for injection? _____Yes __X____No

   If no, for what purpose was the well originally drilled? __Producer-Oil_____

   _____

2. Name of the Injection Formation: _Second Bone Spring_____

3. Name of Field or Pool (if applicable): _Benson; Bone Spring (5200)_____

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: _Delaware (Brushy Canyon) (overlying)(4297')_____

   _Wolfcamp (underlying) (9667')_____

   _____

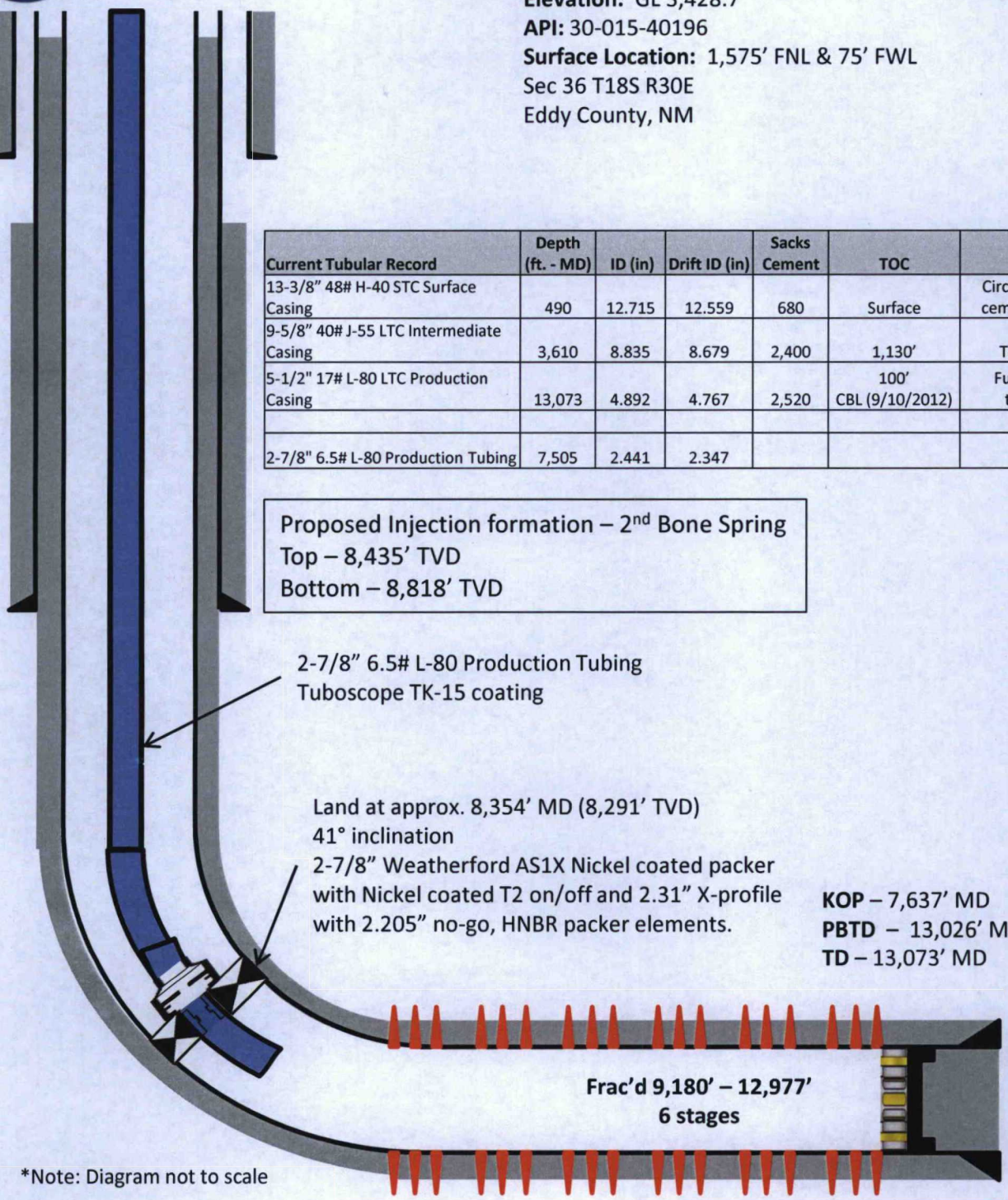
   _____

Smokey Bits State Com 2H Proposed Wellbore Diagram

Elevation: GL 3,428.7'
API: 30-015-40196
Surface Location: 1,575' FNL & 75' FWL
Sec 36 T18S R30E
Eddy County, NM

Current Tubular Record	Depth (ft. - MD)	ID (in)	Drift ID (in)	Sacks Cement	TOC	
13-3/8" 48# H-40 STC Surface Casing	490	12.715	12.559	680	Surface	Circulated 86 bbls cement to surface
9-5/8" 40# J-55 LTC Intermediate Casing	3,610	8.835	8.679	2,400	1,130'	Temp Survey
5-1/2" 17# L-80 LTC Production Casing	13,073	4.892	4.767	2,520	100' CBL (9/10/2012)	Full circulation throughout
2-7/8" 6.5# L-80 Production Tubing	7,505	2.441	2.347			

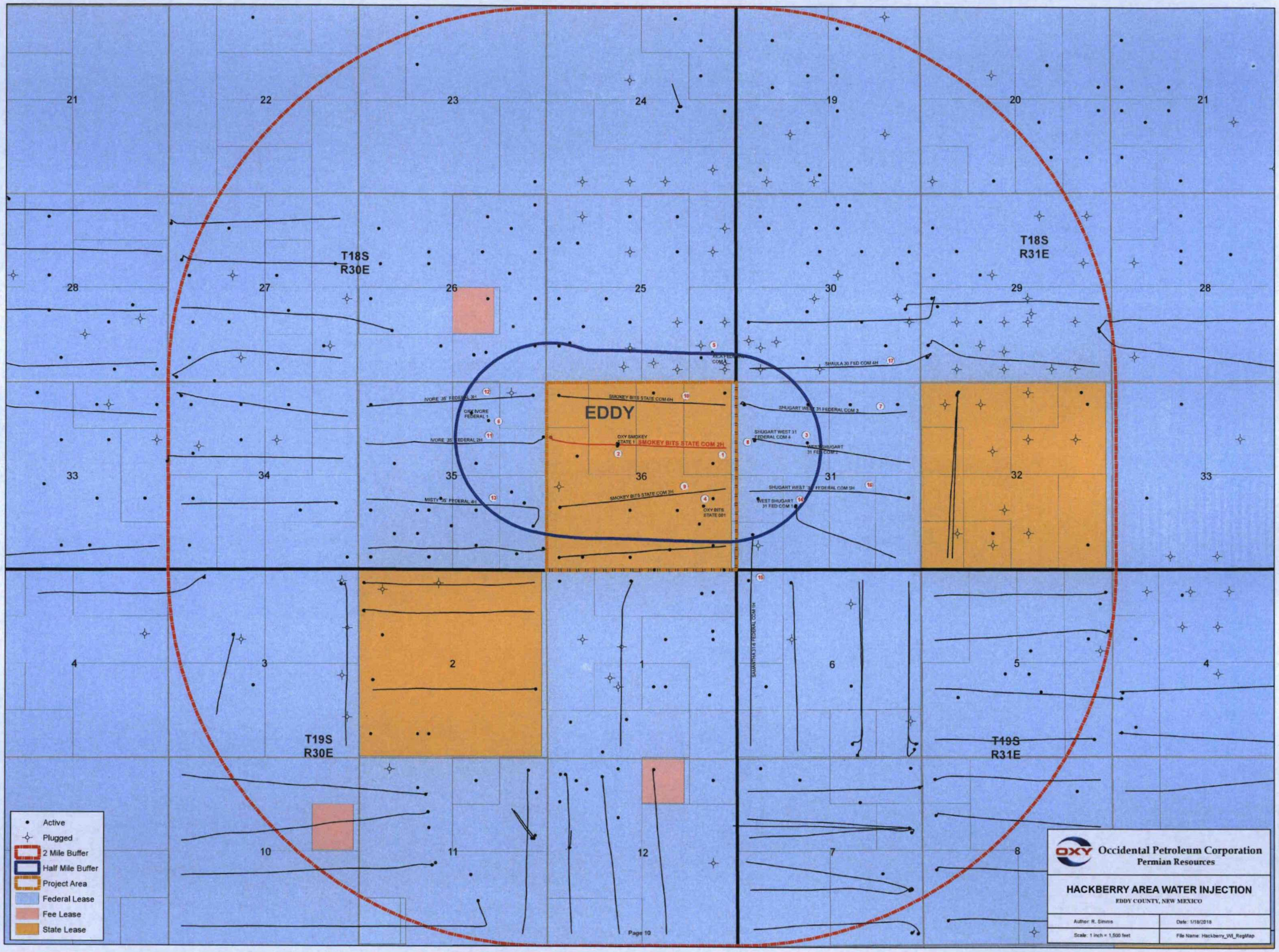
Proposed Injection formation – 2nd Bone Spring
Top – 8,435' TVD
Bottom – 8,818' TVD



*Note: Diagram not to scale

Perfs	9,180	9,677
	9,840	10,337
	10,500	10,997
	11,160	11,657
	11,820	12,317
	12,480	12,977

ITEM V
Area of Review Map



21
22
23
24
19
20
21
T18S
R30E
T18S
R31E
28
27
26
25
30
29
28
SHAULA 30 FED COM 4H
IVORE '35' FEDERAL 3H
OXY IVORE
FEDERAL 1
IVORE '35' FEDERAL 2H
MISTY '35' FEDERAL 4H
EDDY
SMOKEY BITS STATE COM 6H
OXY SMOKEY
STATE 1
SMOKEY BITS STATE COM 2H
SMOKEY BITS STATE COM 3H
OXY BITS
STATE 001
SHUGART WEST 31 FEDERAL COM 3
SHUGART WEST 31
FEDERAL COM 4
WEST SHUGART
31 FED COM 2
SHUGART WEST '31' FEDERAL COM 5H
WEST SHUGART
31 FED COM 1
33
34
35
36
31
32
33
SAMANTHA 31 6 FEDERAL COM 1H
4
3
2
1
6
5
4
T19S
R30E
T19S
R31E
10
11
12
7
8
Active
Plugged
2 Mile Buffer
Half Mile Buffer
Project Area
Federal Lease
Fee Lease
State Lease
Occidental Petroleum Corporation
Permian Resources
HACKBERRY AREA WATER INJECTION
EDDY COUNTY, NEW MEXICO
Author: R. Simms
Date: 1/18/2018
Scale: 1 inch = 1,500 feet
File Name: Hackberry_WI_RegMap

ITEM VI
Area of Review

MAP LEGEND NUMBER	API NUMBER	OPERATOR	LEASE NAME	WELL NO.	WELL TYPE	STATUS	FTG N/S	FTG E/W	UNIT	SEC	TSHIP.	RNG.	DATE DRILLED	TOTAL DEPTH	HOLE SIZE	CSG SIZE	SET AT	SX CMT	CMT TOP	MTD	DVT	CURRENT COMPLETION	REMARKS
1	30-015-40196	OXY USA WTP LP	SMOKEY BITS STATE COM	2H	P	A	1575 FNL	75 FWL	E	36	18 S	30 E	07/24/2012	13073	17 1/2"	13 3/8"	494'	680	Surface	Circ.		9180-12977'	
															12 1/4"	9 5/8"	3610'	2400	1130'	TS			
															8 3/4"	5 1/2"	13703'	2520	100'	CBL	N/A		(5200) Benson; Bone Spring
2	30-015-31611	OXY USA WTP LP	OXY SMOKEY STATE	1	P	A	1780 FNL	1980 FWL	N	36	18 S	30 E	05/15/2001	12290	17 1/2"	13 3/8"	575'	740	Surface	Circ.		11756-11776'	
															12 1/4"	9 5/8"	3630'	1290	Surface	Circ.			
															8 3/4"	5 1/2"	12290'	1200	5794'	CBL	N/A		(96785) Hackberrt; Morrow, North
3	30-015-31821	CIMAREX ENERGY CO OF COLORADO	SHUGART 31 WEST FEDERAL	2	P	P&A	1700 FNL	1980 FWL	F	31	18 S	31 E	10/10/2001	12308	12 1/4"	8 5/8"	3199'	1150	Surface	Circ.		7637-7779'	Date P&A'd: 5/12/17
															7 7/8"	5 1/2"	12308'	750	4696'	CBL	N/A	Recomplete	
																							(97056) Hackberry; Bone Spring, North
4	30-015-31937	OXY USA WTP LP	OXY BITS STATE	001	P	P&A	1797 FSL	912 FEL	I	36	18 S	30 E	01/08/2002	12280	17 1/2"	13 3/8"	655'	550	Surface	Circ.		12106-12129'	Date P&A'd: 6/1/2017
															12 1/4"	9 5/8"	3220'	1300	Surface	Circ.			
															8 3/4"	5 1/2"	12280'	775	8478'	CBL	N/A		(96785) Hackberry; Morrow, North (G)
5	30-015-32201	CHEVRON U S A INCORPORATED	XICA FEDERAL COM	1	P	A	835 FSL	660 FEL	P	25	18 S	30 E	05/29/2002	12240	17 1/2"	13 3/8"	625'	524	Surface	Circ.		11826-11900'	OXY TOC Calc=6264 using 1.18 yield
															12 1/4"	9 5/8"	3734'	1200	Surface	Circ.			No CBL
															8 3/4"	5 1/2"	12240'	1220	7500'	File Calc.	N/A		(96785) Hackberry; Morrow, North (G)
6	30-015-32507	OXY USA WTP LP	OXY IVORE FEDERAL	1	P	A	1079 FNL	1610 FEL	B	35	18 S	30 E	12/20/2002	12090	17 1/2"	13 3/8"	605'	510	Surface	Circ.		11638-11648'	
															12 1/4"	9 5/8"	4500'	1820	Surface	Circ.			
															8 3/4"	5 1/2"	12090'	850	7674'	CBL	N/A		(96785) Hackberry; Morrow, North (G)
7	30-015-37350	CIMAREX ENERGY CO OF COLORADO	SHUGART WEST 31 FEDERAL COM	3	P	A	660 FNL	280 FWL	D	31	18 S	31 E	11/03/2009	13344	17 1/2"	13 3/8"	575'	500	Surface	Circ.		9109-13344'	OXY TOC Calc=3601 using 1.18 yield
															12 1/4"	9 5/8"	3199'	1215	Surface	Circ.			No CBL
															8 3/4"	7"	8470'	965	10'	File Calc.	N/A		(56405) Shugart; Bone Spring, North
8	30-015-37785	CIMAREX ENERGY CO OF COLORADO	SHUGART WEST 31 FEDERAL COM	4	P	A	1650 FNL	475 FWL	E	31	18 S	31 E	10/31/2010	12988	17 1/2"	13 3/8"	560'	520	Surface	Circ.		8652-12911'	
															12 1/4"	9 5/8"	3675'	1315	Surface	Circ.			
															8 3/4"	5 1/1"	12971'	2430	Surface	Circ.	N/A		(97056) Hackberry; Bone Spring, North
9	30-015-39118	OXY USA WTP LP	SMOKEY BITS STATE COM	3H	P	A	1750 FSL	330 FWL	L	36	18 S	30 E	12/12/2011	12906	17 1/2"	13 3/8"	465'	850	Surface	Circ.		9232-12501'	
															12 1/4"	9 5/8"	3694'	1640	Surface	Circ.			
															8 1/2"	5 1/2"	12636'	1990	Surface	Circ.	N/A		(5200) Benson; Bone Spring
10	30-015-40148	OXY USA WTP LP	SMOKEY BITS STATE COM	6H	P	A	405 FNL	330 FWL	D	36	18 S	30 E	06/26/2012	12804	17 1/2"	13 3/8"	467'	610	Surface	Circ.		9128-12702'	
															12 1/4"	9 5/8"	3654'	1850	980'	TS			
															8 3/4"	5 1/2"	12804'	1940	1150'	CBL	N/A		(5200) Benson; Bone Spring
11	30-015-41409	OXY USA WTP LP	IVORE `35` FEDERAL COM	2H	P	A	1575 FNL	75 FEL	H	35	18 S	30 E	10/09/2015	13218	14 3/4"	10 3/4"	535'	560	Surface	Circ.		8858-13001'	Split production casing string
															9 7/8"	7 5/8"	3590'	990	Surface	Circ.			
															6 3/4"	5 1/2"	8592'	680	1710	CBL			
															6 3/4"	4 1/2"	13208	680	1710	CBL	N/A		(5200) Benson; Bone Spring
12	30-015-41410	OXY USA WTP LP	IVORE `35` FEDERAL COM	3H	P	A	387 FNL	387 FEL	A	35	18 S	30 E	01/08/2015	12940	14 3/4"	11 3/4"	508'	610	Surface	Circ.		8717-12765'	
															10 5/8"	8 5/8"	3580'	1230	Surface	Circ.			
															7 7/8"	5 1/2"	12921'	1730	Surface	Circ.	N/A		(5200) Benson; Bone Spring
13	30-015-41413	OXY USA WTP LP	MISTY `35` FEDERAL COM	4H	P	A	1223 FSL	386 FEL	I	35	18 S	30 E	12/23/2014	13232	14 3/4"	11 3/4"	529'	633	Surface	Circ.		8879-13014'	

																		10 5/8"	8 5/8"	3720'	1110	Surface	Circ.				
																		7 7/8"	5 1/2"	13204'	1390	Surface	Circ.	N/A		(37920) Leo; Bone Spring, South
14	30-015-31647	CIMAREX ENERGY CO OF COLORADO	WEST SHUGART `31` FED COM	1	P	A	1780	FSL	1650	FWL	K	31	18 S	31 E	04/23/2001	12530	17 1/2"	13 3/8"	755'	650	Surface	Circ.		8519-11751' MD	OXY TOC Calc= Surface using 1.18 yield
																	12 1/4"	9 5/8"	3205'	1300	Surface	Circ.		8772' TVD	No CBL
																	7 7/8"	5 1/2"	12526'	1460	1050'	File calc.	Yes, but no ir	Recomplete into	(97056) Hackberry; Bone Spring, North
15	30-015-40050	OXY USA WTP LP	SAMANTHA 31-6 FEDERAL COM	1H	P	A	990	FSL	450	FWL	M	31	18 S	31 E	04/24/2012	14381	17 1/2"	13 3/8"	597'	720	Surface	Circ.		9750-14250'	
																	12 1/4"	9 5/8"	2170'	1070	Surface	Circ.			
																	8 3/4"	5 1/2"	14372'	3600	Surface	Circ.	2263', 6046'		(97056) Hackberry; Bone Spring, North
16	30-015-38221	CIMAREX ENERGY CO OF COLORADO	WEST SHUGART `31` FED COM	5H	P	A	1980	FSL	375	FEL	I	31	18 S	31 E	04/04/2011	12978	17 1/2"	13 3/8"	615'	540	Surface	Circ.		9923-12910'	
																	12 1/4"	9 5/8"	3646'	1315	Surface	Circ.			
																	8 3/4"	5 1/2"	12961'	2050	460'	TS	N/A		(97056) Hackberry; Bone Spring, North
17	30-015-41525	DEVON ENERGY PRODUCTION COMPANY L P	SHAULA 30 FEDERAL COM	4H	P	A	650	FSL	150	FWL	M	29	18 S	31 E	10/26/2013	13726	17 1/2"	13 3/8"	628'	875	Surface	Circ.		9280-13643'	NMOCD file says CBL run, but no copies of it and no TOC
																	12 1/4"	9 5/8"	4115'	1435	Surface	Circ.			
																	8 3/4"	5 1/2"	13726'	2164	5485	Calc.	N/A		(56405) Shugart; Bone Spring, North

ITEM VI
Plugged Well Schematics

CIMAREX

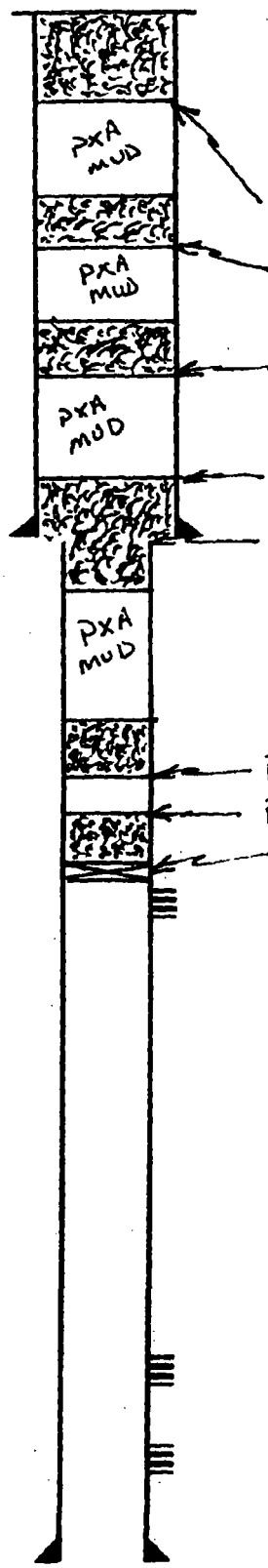
Cimarex Energy Co. of Colorado
SHUGART WEST 31 FEDERAL #2
API 30-015-31821
1700' FNL & 1980' FWL,
BHL 1635' FNL & 1570' FWL
Sec 31, T18S R31E
Eddy County, NM
GL 3545' KB 3563'

J Piwetz 11/30/2016

T/ANHY – 533'
T/YATES ~ 2,192'
T/S.A. ~ 4,000'
T/B.S. ~ 6,000'
T/W.C. ~ 8,460'
T/ATOKA ~ 10,220
T/MRRW. ~ 11,400'

8 5/8" 32# J-55 csg @ 3199'
Cmt w/1150 sx, cir to surface

TOC 4696' (CBL on 11/18/12)



CIRC. 25 sxs. @ 63'-3'

Pump 40 sxs. @ 583'-483' - TAG

Pump 50 sxs. @ ± 252'-2132' - TAG

Pump 55 sxs. @ 3265'-3135' - TAG

CUT x PULL 5 1/2" CSG. @ 3,200'.

Pump 25 sxs. @ 6,080'-5,920' - TAG

Pump 25 sxs. @ 7,600'-7,430' - TAG

SET 5 1/2" CIBP @ 7,600'.

1st BSS Perfs
7637 - 7779 (44 holes) 11/29/12

116 sx' cement Plug 11450-8275' Tagged (11/17/12)

Fish in hole @ 11,475' Production packer

Morrow Perfs:
11780-90, 11920-32

12077-84; 12102-12

5 1/2" 17# HCP-110 LTC & L-80 LTC'
set @ 12,308'
Cmt w/750 sx

7 7/8" Hole to TD 11,919'

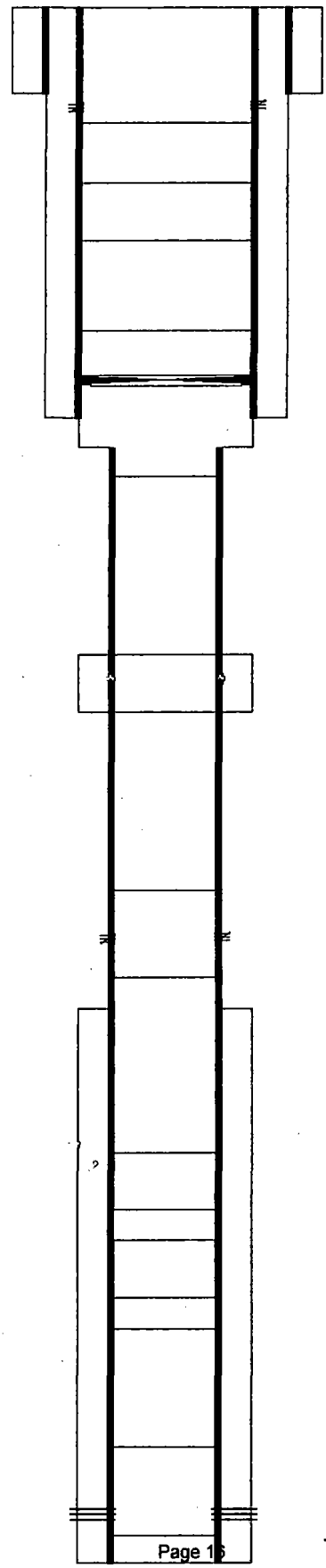
PBTD: 8275'
TD: 12,308'

DAS 12/12/16

J Piwetz 11/30/2016

OXY USA WTP LP - Final P&A
OXY Bits State #1
API No. 30-015-31937

275sx @ 775'-Surface - Circ



17-1/2" hole @ 655'
13-3/8" csg @ 655'
w/ 550sx-TOC-Surf-Circ

Perf @ 705'

50sx @ 1990-1840' Tagged

CIBP @ 3025' w/ 40sx to 2904'

12-1/4" hole @ 3220'

CIBP @ 3020'

9-5/8" csg @ 3220'
w/ 1300sx-TOC-Surf-Circ

150sx @ 3335-3025' Tagged
250sx @ 3911-3335' Tagged

Cut 5-1/2" csg @ +/-3850'

30sx @ 5742-5450' Tagged

Csg lk @ +/-5609-5640'

40sx @ 7770-7355' Tagged

Perf @ 7720'

25sx @ 9901-9437' Tagged

25sx @ 10274-10088' Tagged

75sx @ 11410-10572' Tagged

8-3/4" hole @ 12280'
5-1/2" csg @ 12280'
w/ 775sx-TOC-8478'-CB:

Perfs @ 12106-12129'

PB-12234'

TD-12280'

ITEM VII
Proposed Operations

Hackberry Pressure Maintenance Pilot: Project Description

Oxy respectfully requests approval for a pressure maintenance pilot in the Second Bone Spring Sand formation in Section 36 of T18S-R30E in Eddy County, New Mexico. The injected fluid will be produced water. Oxy will convert Smokey Bits State Com 2H (perforations MD 9180-12977' TVD 8532-8624') from an oil producer to water injector. Water injection will start once the surface facilities are completed and the C-108 injection order is approved. The well will inject produced water at maximum surface pressure of 1706 psi, which is based on the permitted injection pressure limit of 0.2 psi/ft to the uppermost perforation (NMOCD UIC Manual Section III.A.2). During the injection period Oxy will monitor and evaluate the performance of the injector and offset producers.

The purpose of injecting produced water is to provide pressure maintenance and voidage replacement to help increase oil recovery.

Proposed Operations

1. Water Injection Rate

Well Name	Average Daily Rate to be injected (BWIPD)	Maximum Daily Rate to be Injected (BWID)
Smokey Bits Sate Com 2H	1500	6000

2. This will be a closed system

3. Surface Injection Pressure

Well Name	Average Injection Pressure (Psi)	Maximum Injection Pressure
Smokey Bits State Com 2H	1000	1706

4. Oxy respectfully requests the authority to inject produced water from Oxy operated wells in and around the proposed project area and produced water from either Ray Westall Operating Inc which is produced from Wolfcamp, Bone Spring, and Queen formations or from Devon Energy Production Company, L.P which is produced from the Bone Spring formation. Please see the attached water analyses.

5. N/A

Water Compatibility Study

Scale precipitation due to incompatibility of mixing different waters is simulated using ScaleSoftPitzer™ (SSP) developed by Rice University Brine Chemistry Consortium. Compatibility between 2nd Bone Spring produced water (PW) from Oxy's operations, Bone Spring PW from Devon Energy Production L.P.'s operations and Bone Spring, Wolfcamp, and Queen formation PW from a Ray Westall Operating Inc.'s operations was performed. Table 1 shows the water analysis of all waters.

Table 1.

Cations / Anions (mg/L)	Oxy Hackberry PW (2BS)	Westall PW	Oxy Turkey Track PW (2BS)	Devon PW
Na^+	64,694	54,123	46,727	57,555
Mg^{2+}	1,665.5	1,693.4	1,130.6	900
Ca^{2+}	11,828	8,951	6,654	5,357
Sr^{2+}	458.65	327.35	219.90	464
Ba^{2+}	0	0	0	0
Fe^{2+}	53.6	17.2	27.0	33.6
Mn^{2+}	1.45	1.15	0.70	0.80
Cl^-	133,030	110,970	99,745	116,643
SO_4^{2-}	701.8	1,241	1,727	656.6
$HCO3^-$	231.8	244.1	122.0	341.0
TDS	214,377	178,752	157,589	183,209
pH	6.55	6.45	7.10	6.75

Compatibility study #1: Oxy's 2BS vs Westall's PW

The two water analysis are input into SSP at different ratios to calculate scaling index (SI) and potential precipitation (ppt) in pound per thousand barrels (ptb). Bottom hole temperature of 140 F and bottom hole pressures of 5,500 psia were used in the modeling. Results are summarized in Table 2.

The scaling index of calcite ($CaCO_3$) decreases from 1.19 to 0.94 at the bottomhole conditions (Table 2). Therefore, the introduction of the Westall PW into Oxy's 2BS formation is unlikely to introduce additional scaling. Calcite can be prevented relatively easily by the use of scale inhibitor (e.g. many of the phosphonic acid based scale inhibitor). Oxy will use the appropriate scale inhibitor if this source of water is used.

Celestite scaling tendency remains fairly constant over the range of mixing ratios. In addition, the Celestite scaling index is quite insignificant for concern.

Table 2. Prediction of Scaling Index (SI) and potential precipitation of 2 common oilfield scales by mixing the Oxy's 2BS PW with Westall's PW at different ratios at bottomhole conditions.

Oxy 2BS	Westall	Calcite		Celestite	
% PW	% PW	SI	ppt (ptb)	SI	ppt (ptb)
100	0	1.19	35	0.09	37
80	20	1.01	33	0.15	61
50	50	0.96	32	0.15	60
20	80	0.95	32	0.15	59
0	100	0.94	32	0.15	59

Compatibility study #2: Oxy's 2BS vs Oxy's Turkey Track (TT) PW

The two water analysis are input into SSP at different ratios to calculate scaling index (SI) and potential precipitation (ppt) in pound per thousand barrels (ptb). Bottom hole conditions were used in the modeling. Results are summarized in Table 3.

By introducing TT PW into Oxy's 2BS PW, it is found that calcite scaling tendency remains about the same and the potential precipitation decreases.

Celestite scaling tendency remains fairly constant over the range of mixing ratios. In addition, the Celestite scaling index is quite insignificant for concern.

Table 3. Prediction of Scaling Index (SI) and potential precipitation of 2 common oilfield scales by mixing the Oxy's 2BS PW with Turkey Track PW at different ratios at bottomhole conditions.

Oxy 2BS	TT	Calcite		Celestite	
% PW	% PW	SI	ppt (ptb)	SI	ppt (ptb)
100	0	1.19	35	0.09	37
80	20	1.17	30	0.14	59
50	50	1.15	24	0.17	67
20	80	1.16	18	0.17	55
0	100	1.20	14	0.14	40

Compatibility study #3: Oxy's 2BS vs Devon's PW

The two water analysis are input into SSP at different ratios to calculate SI and potential precipitation (ppt) in pound per thousand barrels (ptb). Bottom hole conditions were used in the modeling. Results are summarized in Table 4.

By introducing Devon's PW into Oxy's 2BS PW, the scaling tendency and potential precipitation for Calcite ranges from 1.19 to 1.31. Calcite can be prevented relatively easily by the use of scale inhibitor (e.g. many of the phosphonic acid based scale inhibitors). Oxy will use the appropriate scale inhibitor if this source of water is used.

Celestite scaling tendency remains fairly constant over the range of mixing ratios. In addition, the Celestite scaling index is quite insignificant for concern.

Table 4. Prediction of Scaling Index (SI) and potential precipitation of 2 common oilfield scales by mixing the Oxy's 2BS PW with Devon's PW at different ratios at bottomhole conditions

Oxy 2BS	Devon	Calcite		Celestite	
% PW	% PW	SI	ppt (ptb)	SI	ppt (ptb)
100	0	1.19	35	0.09	37
80	20	1.24	39	0.09	38
50	50	1.29	44	0.09	39
20	80	1.31	49	0.10	43
0	100	1.29	51	0.11	47

ITEM VIII
Geologic Statement

Geologic Statement

Injection will occur into the Second Bone Spring Sandstone on the northern margin of its extent in the Delaware Basin. The interval is Leonardian in age and between 375 and 400 ft. thick. Depth to the top of the Second Bone Spring Sandstone in the project area is approximately 8,400 ft. TVD (-4,900 ft. TVDSS). The location is within 5 miles of the toe of slope and the corresponding updip pinchout of the Second Bone Spring Sandstone. Lithology consists of thin beds of interbedded sandy siltstones, silty claystones, and carbonate mudstones. The project area is bound above and below by impermeable carbonate mudstones of the Second Bone Spring Limestone and the Third Bone Spring Limestone respectively. These limestone layers act as impermeable barriers to fluid flow out of the injection interval.

There is one active fresh water well within one mile (CP-00818-POD1) drilled to a depth of 240 ft. There will be >8000 ft. of vertical separation between the proposed injection zone and sources of fresh water, including hundreds of feet of impermeable salt and anhydrite. In the project area, the top of the Salado Formation (salt and anhydrite zone) is 695 ft. TVD, and the base is 2,060 ft. TVD for a total thickness of 1,365 ft. All underground sources of fresh water will be above the salt bearing zone, and injection from this project will occur below. The impermeable salt and anhydrite will act as a barrier to prevent injected fluid from migrating vertically from the injection zone into underground sources of fresh water. There are no known open faults in the project area, so there will be no pathway for injected fluids to migrate through the impermeable layers. There are no known underground sources of drinking water immediately underlying the injection zone.

Michael Harty, Geologist

1/29/2018
Date

ITEM XI
Fresh Water Analysis

BAKER HUGHES

Permian Basin Area Laboratory
2101 Market Street,
Midland, Texas 79703

Upstream Chemicals

REPORT DATE: 11/30/2017

COMPLETE WATER ANALYSIS REPORT SSP v.2010

CUSTOMER:	OCCIDENTAL PERMIAN LTD	**ACCOUNT REP:**	TIM W. GRAY
DISTRICT:	NEW MEXICO	**SAMPLE ID:**	201701062722
AREA/LEASE:	NNM-UPSTREAM	**SAMPLE DATE:**	11/20/2017
SAMPLE POINT NAME	GARTH RANCH	**ANALYSIS DATE:**	11/30/2017
SITE TYPE:	FACILITY	**ANALYST:**	SN
SAMPLE POINT DESCRIPTION:	WELL HEAD		

OCCIDENTAL PERMIAN LTD, NNM-UPSTREAM, GARTH RANCH

FIELD DATA	
Initial Temperature (°F):	250
Final Temperature (°F):	80
Initial Pressure (psi):	100
Final Pressure (psi):	15
pH:	
pH at time of sampling:	6.6

ALKALINITY BY TITRATION:	mg/L	meq/L
Bicarbonate (HCO_3^-):	231.8	3.8
Carbonate (CO_3^{2-}):	ND	
Hydroxide (OH^-):	ND	

aqueous CO_2 (ppm):	80.0
aqueous H_2S (ppm):	17.0
aqueous O2 (ppb):	ND
Calculated TDS (mg/L):	709
Density/Specific Gravity (g/cm³):	0.9977
Measured Specific Gravity	1.0002
Conductivity (mmhos):	ND
Resistivity:	ND
MCF/D:	No Data
BOPD:	No Data
BWPD:	No Data

ANALYSIS OF SAMPLE					
ANIONS:	**mg/L**	**meq/L**	**CATIONS:**	**mg/L**	**meq/L**
Chloride (Cl^-):	88.4	2.5	**Sodium (Na^+):**	52.2	2.3
Sulfate (SO_4^{2-}):	169.2	3.5	**Potassium (K^+):**	3.1	0.1
Borate (H_3BO_3):	2.2	0.0	**Magnesium (Mg^{2+}):**	47.4	3.9
Fluoride (F^-):	ND		**Calcium (Ca^{2+}):**	114.3	5.7
Bromide (Br^-):	ND		**Strontium (Sr^{2+}):**	1.6	0.0
Nitrite (NO_2^-):	ND		**Barium (Ba^{2+}):**	0.0	0.0
Nitrate (NO_3^-):	ND		**Iron (Fe^{2+}):**	1.1	0.0
Phosphate (PO_4^{3-}):	ND		**Manganese (Mn^{2+}):**	0.0	0.0
Silica (SiO_2):	ND		**Lead (Pb^{2+}):**	0.0	0.0
			Zinc (Zn^{2+}):	0.0	0.0
			Aluminum (Al^{3+}):	0.0	0.0
			Chromium (Cr^{3+}):	ND	
			Cobalt (Co^{2+}):	ND	
ORGANIC ACIDS:	**mg/L**	**meq/L**	**Copper (Cu^{2+}):**	0.0	0.0
Formic Acid:	ND		**Molybdenum (Mo^{2+}):**	0.0	0.0
Acetic Acid:	ND		**Nickel (Ni^{2+}):**	ND	
Propionic Acid:	ND		**Tin (Sn^{2+}):**	ND	
Butyric Acid:	ND		**Titanium (Ti^{2+}):**	ND	
Valeric Acid:	ND		**Vanadium (V^{2+}):**	ND	
			Zirconium (Zr^{2+}):	ND	
			Lithium (Li):	ND	
			Total Hardness:	483	N/A
Anion/Cation Ratio:		0.82	**ND = Not Determined**		

SCALE PREDICTIONS BASED ON FIELD PROVIDED DATA; FUTHER MODELING MAY BE REQUIRED FOR VALIDATION OF SCALE PREDICTION RESULTS.

Conditions		Barite ($BaSO_4$)		Calcite ($CaCO_3$)		Gypsum ($CaSO_4 \cdot 2H_2O$)		Anhydrite ($CaSO_4$)	
Temp	**Press.**	**Index**	**Amt (ptb)**	**Index**	**Amt (ptb)**	**Index**	**Amt (ptb)**	**Index**	**Amt (ptb)**
80°F	15 psi		0.000	-0.49	0.000	-1.16	0.000	-1.41	0.000
99°F	24 psi		0.000	-0.43	0.000	-1.16	0.000	-1.33	0.000
118°F	34 psi		0.000	-0.33	0.000	-1.14	0.000	-1.23	0.000
137°F	43 psi		0.000	-0.21	0.000	-1.11	0.000	-1.11	0.000
156°F	53 psi		0.000	-0.08	0.000	-1.07	0.000	-0.98	0.000
174°F	62 psi		0.000	0.05	2.530	-1.03	0.000	-0.83	0.000
193°F	72 psi		0.000	0.19	9.294	-0.97	0.000	-0.68	0.000
212°F	81 psi		0.000	0.35	16.059	-0.91	0.000	-0.52	0.000
231°F	91 psi		0.000	0.51	22.289	-0.85	0.000	-0.35	0.000
250°F	100 psi		0.000	0.67	27.997	-0.78	0.000	-0.18	0.000

Conditions		Celestite ($SrSO_4$)		Halite (NaCl)		Iron Sulfide (FeS)		Iron Carbonate ($FeCO_3$)	
Temp	**Press.**	**Index**	**Amt (ptb)**	**Index**	**Amt (ptb)**	**Index**	**Amt (ptb)**	**Index**	**Amt (ptb)**
80°F	15 psi	-1.33	0.000	-6.95	0.000	1.39	0.782	-0.75	0.000
99°F	24 psi	-1.32	0.000	-6.97	0.000	1.35	0.777	-0.61	0.000
118°F	34 psi	-1.29	0.000	-6.98	0.000	1.39	0.782	-0.45	0.000
137°F	43 psi	-1.25	0.000	-6.99	0.000	1.45	0.791	-0.29	0.000
156°F	53 psi	-1.19	0.000	-6.99	0.000	1.54	0.800	-0.13	0.000
174°F	62 psi	-1.12	0.000	-6.98	0.000	1.64	0.567	0.03	0.056
193°F	72 psi	-1.03	0.000	-6.97	0.000	1.76	0.570	0.19	0.269
212°F	81 psi	-0.94	0.000	-6.95	0.000	1.90	0.573	0.35	0.423
231°F	91 psi	-0.83	0.000	-6.94	0.000	2.04	0.576	0.51	0.527
250°F	100 psi	-0.71	0.000	-6.91	0.000	2.20	0.577	0.67	0.598

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

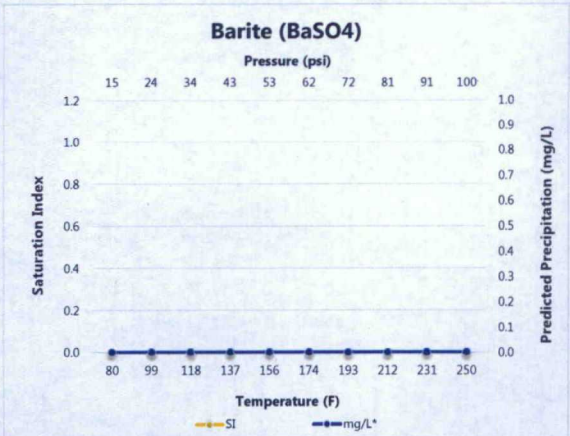
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the eight (8) scales.

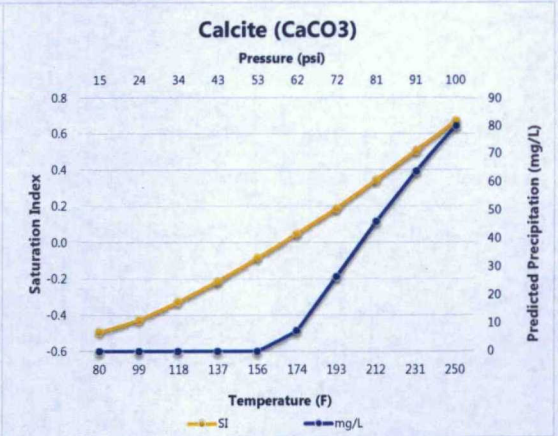
Note 3: Saturation Index predictions on this sheet use pH and alkalinity; $\%CO_2$ is not included in the calculations.

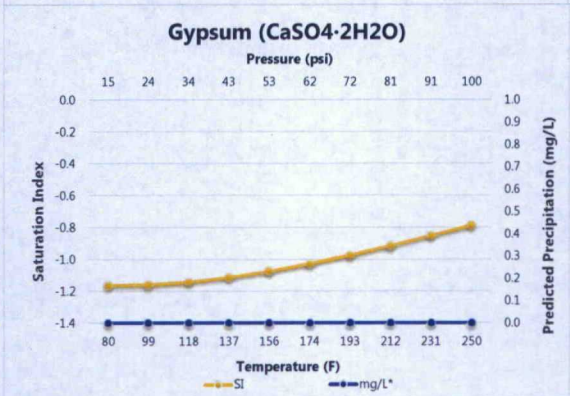
ScaleSoftPitzer™
SSP2010

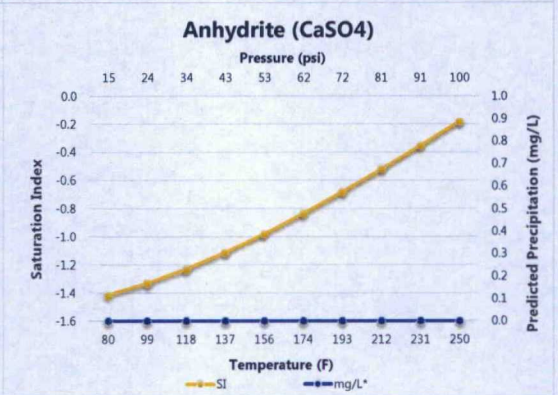
Comments:

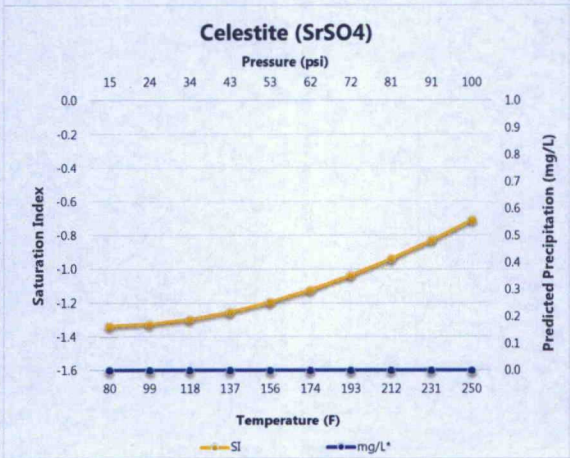
SAMPLE ID: 201701062722 OCCIDENTAL PERMIAN LTD, NNM-UPSTREAM, GARTH RANCH

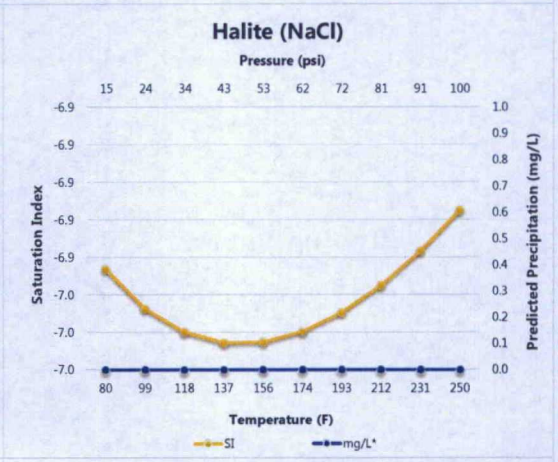


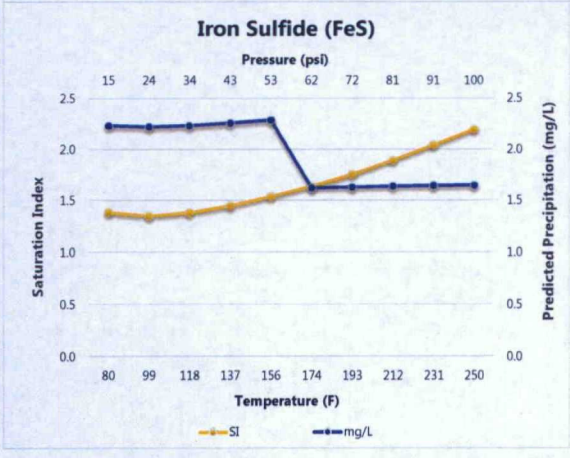


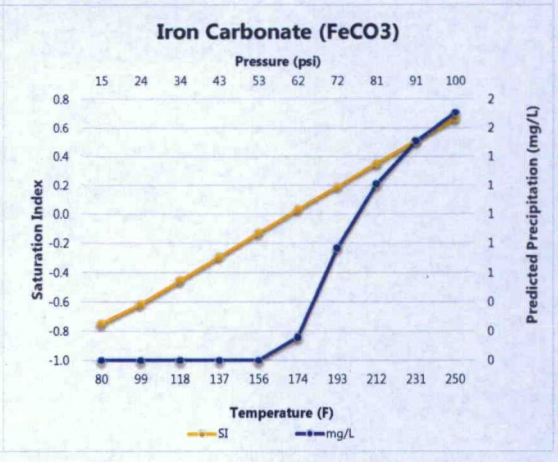












SCALE PREDICTIONS BASED ON FIELD PROVIDED DATA; FUTHER MODELING MAY BE REQUIRED FOR VALIDATION OF SCALE PREDICTION RESULTS.

ITEM XII
Hydrologic Connection Statement

Hydrologic Connection Statement

I have examined the available geologic and engineering data for the Smokey Bits State Com #2H and find no evidence of open faults or any other hydrologic connection between the injection zone and any underground sources of drinking water.

Michael Harty
Geologist

1/29/2018
Date

ITEM XIII
Proof of Notice