

# SECRETARY'S POTASH

ATS-14-693

## OCD Artesia NM OIL CONSERVATION

Form 3160-3  
(August 2007)

ARTESIA DISTRICT

FORM APPROVED  
OMB No. 1004-0137  
Expires July 31, 2010

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

JUL 25 2016

### APPLICATION FOR PERMIT TO DRILL OR REENTER


RECEIVED

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM 110350
1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name NA
2. Name of Operator R360 Permian Basin LLC 4507 Carlsbad Hwy, Hobbs NM 88240		7. If Unit or CA Agreement, Name and No. NA
3a. Address 3 Waterway Square, Suite 110 The Woodlands, TX, 77380	3b. Phone No. (include area code)	8. Lease Name and Well No. Outer Banks SWD #1
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 32.5715833, -104.0230028 At proposed prod. zone 32.5715833, -104.230028		9. API Well No. 30-015-43868
14. Distance in miles and direction from nearest town or post office* 15.93 miles NE of Carlsbad		10. Field and Pool, or Exploratory SWD; DEVONIAN
15. Distance from proposed* <1000' location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease	11. Sec., T. R. M., or Blk. and Survey or Area Sec 13 T20S R19E 1990' FSL 955 FEL Unit 1 NE/4, SE/4
18. Distance from proposed location* <500' to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth 14,180'	12. County or Parish Eddy
21. Elevations (Show whether DF, KDB, RT, GL, etc.) SUR 3333' BSL, INJ 13180 GL	22. Approximate date work will start* 02/16/2016	13. State NM
20. BLM/BIA Bond No. on file NMB929591818 NMB0001255		
23. Estimated duration 90 Days		

#### 24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, must be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification
- Such other site specific information and/or plans as may be required by the BLM.

25. Signature 	Name (Printed/Typed) Luke A Gross	Date 2/16/16
Title Manager, Legislative & Regulatory Affairs		
Approved by (Signature) /s/George MacDonell	Name (Printed/Typed)	JUL 8 - 2016
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

\*(Instructions on page 2)

Capitan Controlled Water Basin

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

Approval Subject to General Requirements  
& Special Stipulations Attached

DISTRICT I  
1025 N. French Dr., Hobbs, NM 88240  
Phone (575) 383-8181 Fax: (575) 383-0720

DISTRICT II  
811 S. First St., Artesia, NM 88210  
Phone (575) 748-1283 Fax: (575) 748-9720

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone (505) 476-3460 Fax: (505) 476-3462

**NM OIL CONSERVATION** Form C-102  
State of New Mexico ARTESIA DISTRICT Revised August 1, 2011  
Energy, Minerals and Natural Resources Department

**OIL CONSERVATION DIVISION**  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

JUL 25 2016 Submit one copy to appropriate District Office

**RECEIVED**

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

☐ AMENDED REPORT

API Number <b>30-015-43868</b>		Pool Code <b>96101</b>	Pool Name <b>SWD; DEVONIAN</b>
Property Code <b>316565</b>	Property Name <b>OUTER BANKS SWD</b>		Well Number <b>1.</b>
OGRID No. <b>289936</b>	Operator Name <b>R360 Permian Basin, LLC</b>		Elevation <b>3325</b>

**Surface Location**

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West Line	County
1	13	20 S	29 E		1990	SOUTH	955	EAST	EDDY

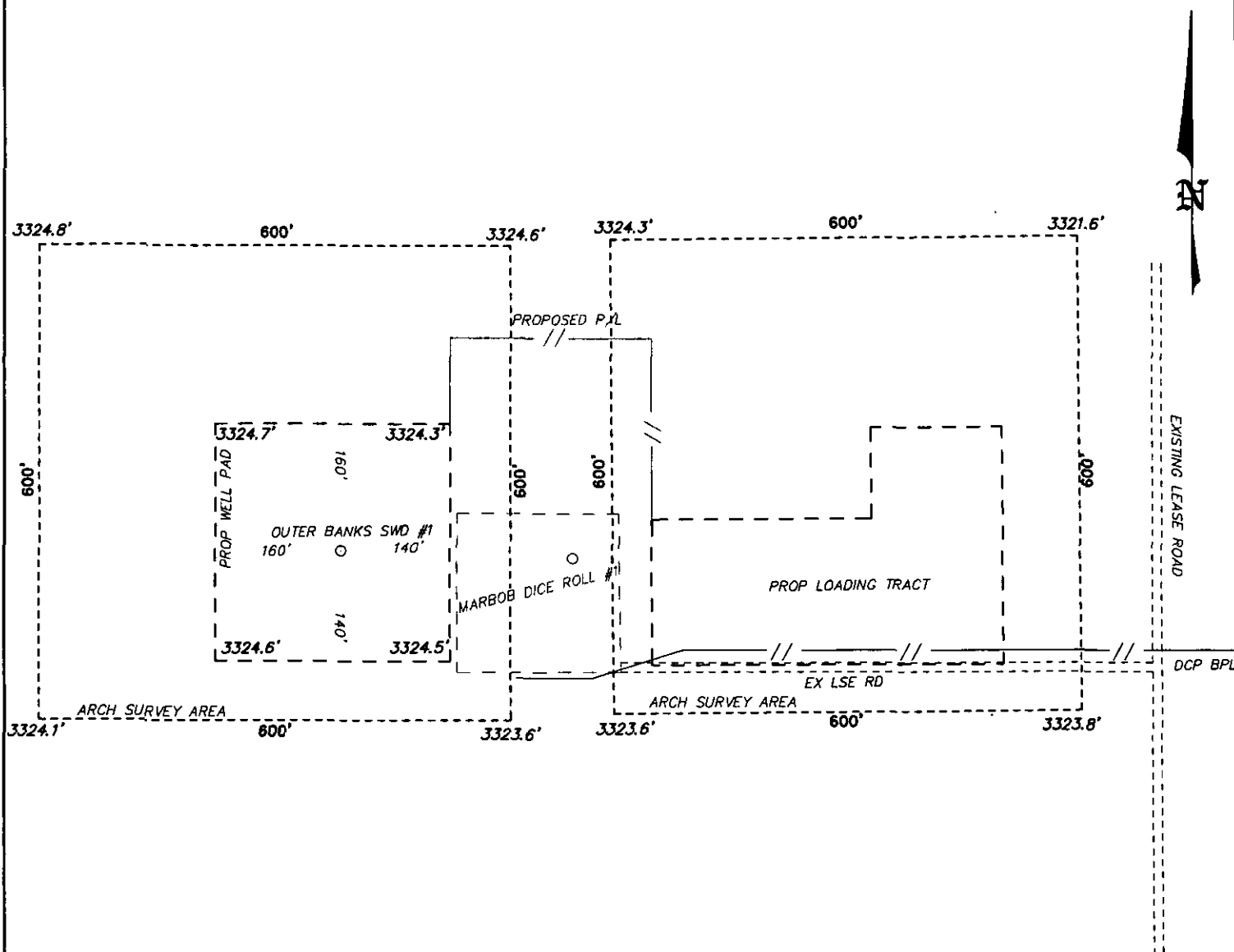
**Bottom Hole Location If Different From Surface**

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/EAST LINE	County
Dedicated Acres		Joint or Infill		Consolidation Code		Order No.			

**NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION**

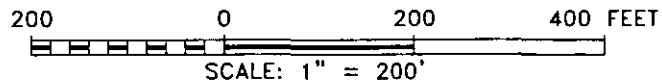
N: 575102.9 E: 632579.8 (NAD 83)	N: 575105.0 E: 635230.8 (NAD 83)	N: 575108.4 E: 637890.8 (NAD 83)	<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>[Signature]</i> 2/16/16 Signature Date</p> <p><b>LUKE BROSS</b> Printed Name</p> <p><b>lukeb@R360ES.com</b> Email Address</p>
<p><b>SURFACE LOCATION</b></p> <p>Lot - N 32°34'17.70" Long - W 104°01'22.81" NMSPC- N 571812.4 E 636934.9 (NAD-83)</p>			<p><b>SURVEYOR CERTIFICATION</b></p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p align="center"><b>FEBRUARY 16 2016</b></p> <p>Date Surveyed</p> <p><i>[Signature]</i> Signature of Professional Surveyor</p> <p align="center"><b>7977</b></p> <p>Certification of Professional Surveyor</p> <p align="center"><b>7977</b></p> <p>Scale: 1" = 1000'</p> <p>WO Num.: 32169</p>

SECTION 13, TOWNSHIP 20 SOUTH, RANGE 29 EAST. N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.



**R360 ENVIRONMENTAL SOLUTIONS**  
**OUTER BANKS SWD #1**  
ELEV. - 3325'  
Lat - N 32°34'17.70"  
Long - W 104°01'22.81"  
NMSPCE- N 571812.4  
E 636934.9  
(NAD-83)

CARLSBAD, NM IS ±15 MILES TO THE SOUTHWEST OF LOCATION.



Directions to Location:

FROM INTERSECTION OF 62-180 & CR 238, GO  
NORTH ON CR 238 1.2 MILES, EAST ON 239 1.2  
MILES, NORTH 1.2 MILES ON LEASE ROAD, WEST 0.2  
MILES TO SOUTHWEST CORNER OF MARBOB DICE  
ROLL #1 PAD.

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P.O. Box 1786 (575) 393-7316 - Office  
1120 N. West County Rd. (575) 392-2206 - Fax  
Hobbs, New Mexico 88241 basin-surveys.com

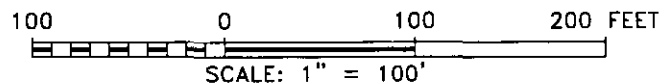
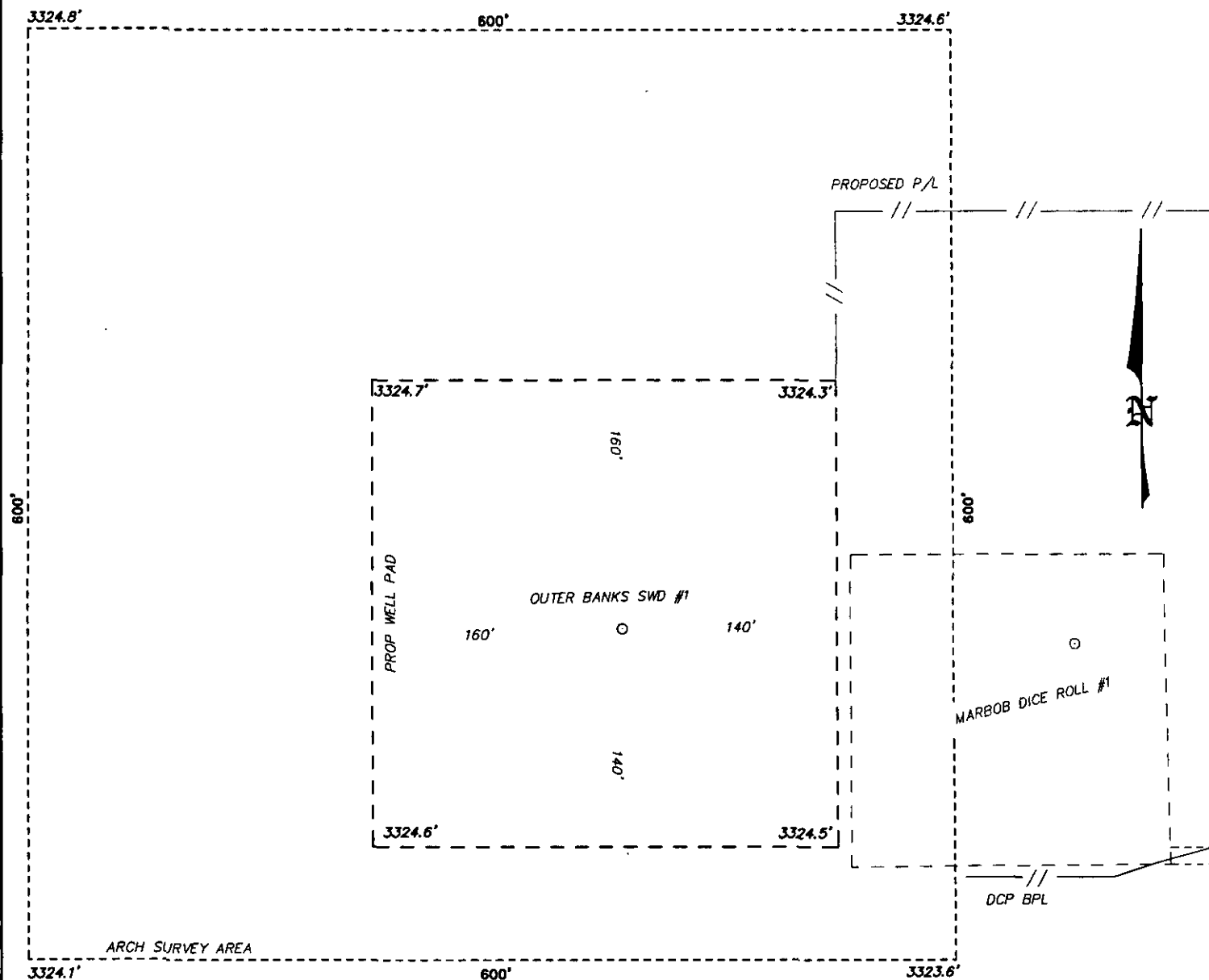
**R360 ENVIRONMENTAL SOLUTIONS**

REF: OUTER BANKS SWD #1 / WELL PAD TOPO

THE OUTER BANKS SWD #1 LOCATED 1990' FROM  
THE SOUTH LINE AND 955' FROM THE EAST LINE OF  
SECTION 13, TOWNSHIP 20 SOUTH, RANGE 29 EAST.

N.M.P.M., EDDY COUNTY, NEW MEXICO.

SECTION 13, TOWNSHIP 20 SOUTH, RANGE 29 EAST. N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.



**R360 ENVIRONMENTAL SOLUTIONS**

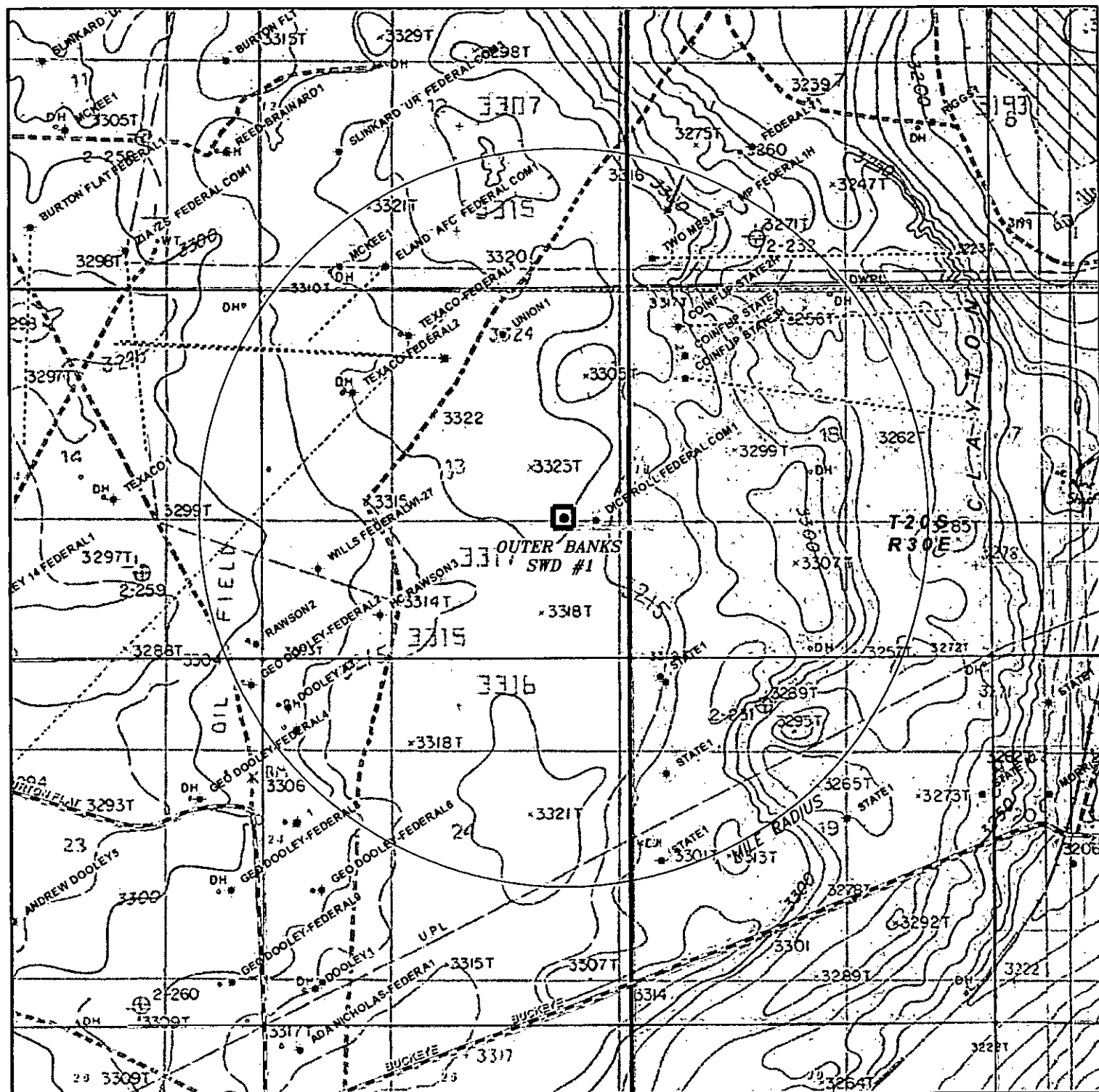
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## OUTER BANKS SWD #1

Located 1990' FSL and 955' FEL  
 Section 13, Township 20 South, Range 29 East,  
 N.M.P.M., Eddy County, New Mexico.

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0' 1000' 2000' 3000' 4000'

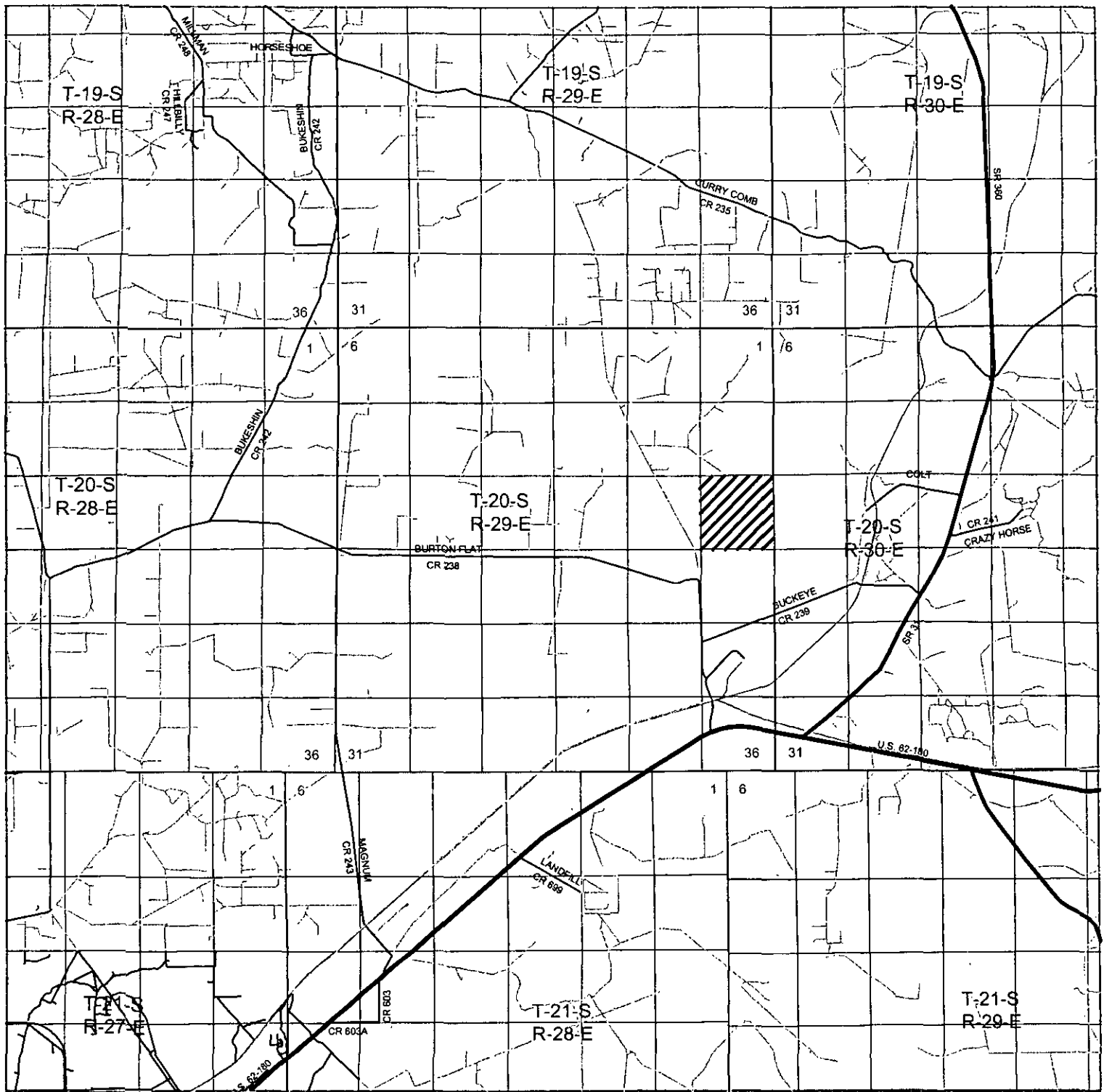
SCALE: 1" = 2000'

W.O. Number: KAN 32169

Survey Date: 02-04-2016

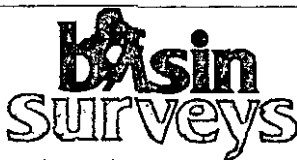
YELLOW TINT - USA LAND  
 BLUE TINT - STATE LAND  
 NATURAL COLOR - FEE LAND

**R360**  
**ENVIRONMENTAL**  
**SOLUTIONS**



### OUTER BANKS SWD #1

Located 1990' FSL and 955' FEL  
 Section 13, Township 20 South, Range 29 East,  
 N.M.P.M., Eddy County, New Mexico.



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 1120 N. West County Rd.  
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0 1 MI 2 MI 3 MI 4 MI

SCALE: 1" = 2 MILES

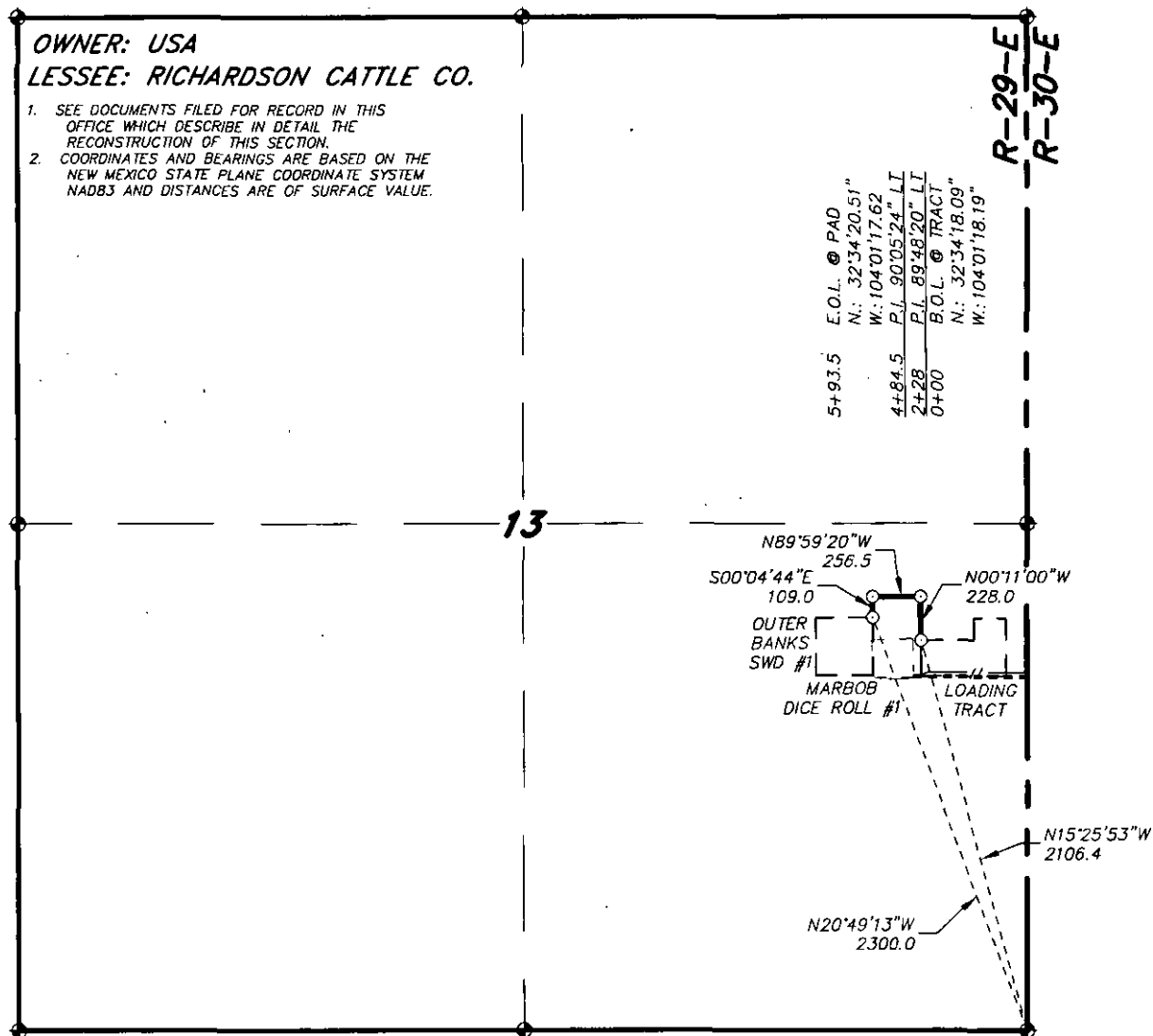
W.O. Number: KAN 32169

Survey Date: 02-04-2016

YELLOW TINT - USA LAND  
 BLUE TINT - STATE LAND  
 NATURAL COLOR - FEE LAND

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 ENVIRONMENTAL  
 SOLUTIONS

SECTION 13, TOWNSHIP 20 SOUTH, RANGE 29 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.

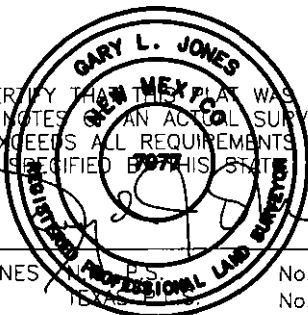


LEGAL DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE, LOCATED IN SECTION 13, TOWNSHIP 20 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

SECTION 13 = 593.5 FEET = 35.97 RODS = 0.11 MILES = 0.41 ACRES

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.



GARY L. JONES, P.S. No. 7977  
IDA No. 5074

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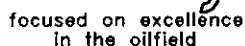
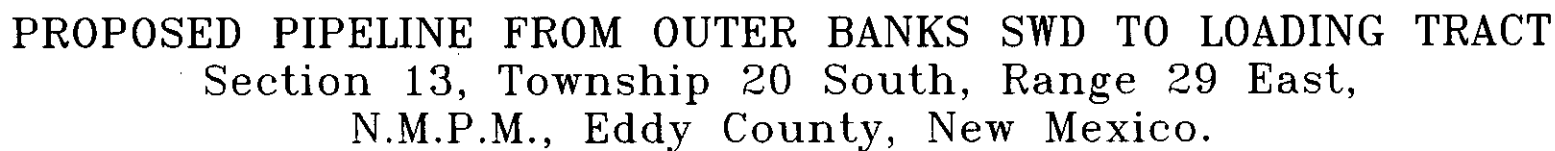
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1000 0 1000 2000 FEET

**R360 ENVIRONMENTAL SOLUTIONS**

REF: PROPOSED PIPELINE FROM OUTER BANKS SWD TO LOADING TRACT

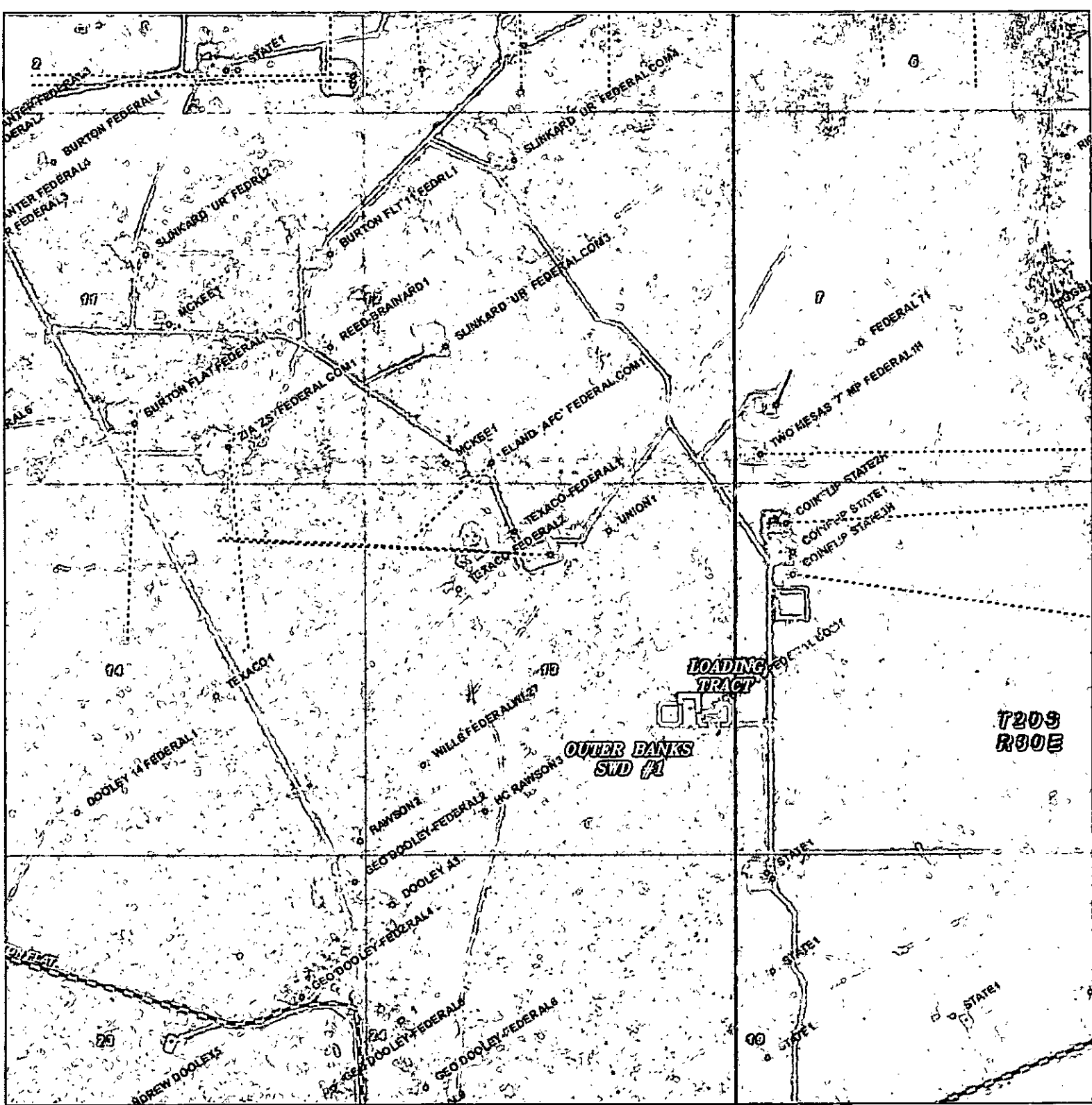
A PIPELINE CROSSING USA LAND IN  
SECTION 13, TOWNSHIP 20 SOUTH, RANGE 29 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.





YELLOW TINT - USA LAND  
BLUE TINT - STATE LAND  
NATURAL COLOR - FEE LAND

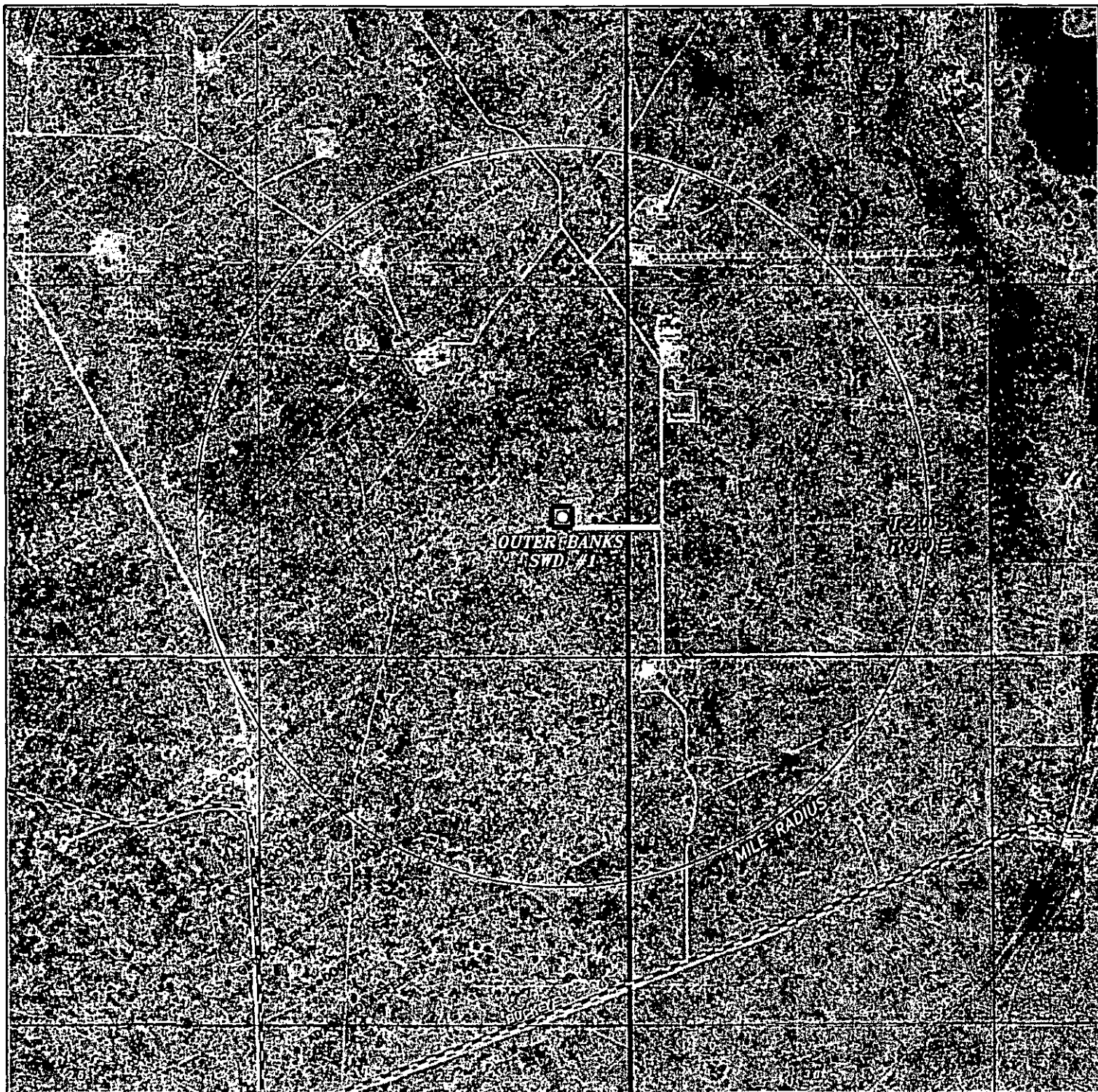






PROPOSED PIPELINE FROM OUTER BANKS SWD TO LOADING TRACT  
 Section 13, Township 20 South, Range 29 East,  
 N.M.P.M., Eddy County, New Mexico.

 <p>focused on excellence in the oilfield</p>	P.O. Box 1786 1120 N. West County Rd. Hobbs, New Mexico 88241 (575) 393-7316 - Office (575) 392-2206 - Fax basinsurveys.com	0' 1000' 2000' 3000' 4000' SCALE: 1" = 2000'		R360 ENVIRONMENTAL SOLUTIONS
		W.O. Number: KAN 32169		
		Survey Date: 06-08-2015		
		YELLOW TINT - USA LAND BLUE TINT - STATE LAND NATURAL COLOR - FEE LAND		



## OUTER BANKS SWD #1

Located 1990' FSL and 955' FEL  
 Section 13, Township 20 South, Range 29 East,  
 N.M.P.M., Eddy County, New Mexico.

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 basinsurveys.com

0' 1000' 2000' 3000' 4000'  
 SCALE: 1" = 2000'

W.O. Number: KAN 32169

Survey Date: 02-04-2016

YELLOW TINT - USA LAND  
 BLUE TINT - STATE LAND  
 NATURAL COLOR - FEE LAND



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**ENVIRONMENTAL**  
**SOLUTIONS**

### Outer Banks Drilling Plan

1. **Location:**

Legal: 1990' FSL 955' FEL Unit I (NE/4, SE/4) Section 13 Township 20 S Range 29 E,  
Eddy County, New Mexico

GPS Coordinates: 32.5715833°, -104.0230028°

O&G Lease #: NMNM-110350

2. **Elevation Above Sea Level: 3333'**

3. **Geologic Name of Surface Formation: Alluvium**

4. **Proposed Drilling Depth: 14,180'**

5. **Estimated Tops of All Geologic Formations:**

Formation	Estimated Top (feet)	Bearing
Triassic		<10' of perched water @ 40' BGS
Dewey Lake		
Salado		N/A
Tansil	1030	N/A
Yates	1140	N/A
Capitan	1450	N/A
Delaware Mountain	3820	Hydrocarbons
Bone Spring	6350	Hydrocarbons
Wolfcamp	9590	Hydrocarbons
Strawn	10760	Hydrocarbons
Atoka	11040	Hydrocarbons
Morrow	11650	Hydrocarbons
Barnett	12230	Hydrocarbons
Mississippian Lime	12640	Hydrocarbons
Woodford Shale	13110	Hydrocarbons
Devonian (Target)	13180	N/A
Montoya		N/A
Simpson		N/A
Ellenberger		N/A

6. Proposed Casing Program: *See COA*

Name	Hole (inches)	Size (inches)	Setting Depth (Feet)	Grade	Weight (lbs/ft)	Thread	Condition	Burst SF	Coll. SF	Ten. SF
Surface	26	20	<del>500</del> 360	J55	106.4 <sup>5</sup>	LTC	New	1.2	1.125	1.6
1 <sup>st</sup> Intermediate	17 1/2	13 3/8	<del>1500</del> 1900	J55	68	<del>LTC</del> BTC	New	1.2	1.125	1.6
2 <sup>nd</sup> Intermediate	12 1/4	9 5/8	<del>3800</del> 3600	L80	53.5	LTC	New	1.2	1.125	1.6
Production	8 1/2	7	0-120	HCL80	35	LTC	New	1.2	1.125	1.6
Production	8 1/2	7	120-11,230	P-110	29	LTC	New	1.2	1.125	1.6
Production	8 1/2	7	11,230-13,180	HCL80	35	LTC	New	1.2	1.125	1.6
Tubing	5 7/8	4 1/2	0-5,000	P-110	11.6	LTC	New	1.2	1.125	1.6
Tubing	5 7/8	4 1/2	5,000-14,180	L-80	11.6	LTC	New	1.2	1.125	1.6
Open Hole	5 7/8		13,180-14,180	NA	NA	NA	NA			

7. **Drilling Procedure:** Spud well and drill down each interval to total depth of that interval, staying in compliance with OCD/BLM rules and regulations and following this APD drilling plan. Each casing string will be cemented and cement will be circulated to surface. There are DV Tools in the casing strings to insure getting cement all the way to surface. Mud weights are spelled out below in paragraph 10 – Types and Characteristics of mud system. After reaching total casing depth of 13,180', OH Logs (Paragraph 12) will be run 15,550'-10,960' GR-CNL to surf, we will cement the 7" as spelled out in this APD. We will pick up a 5 7/8" bit to drill the injection interval for the open-hole completion; OH logs (see Paragraph 12) will be run TD-13,180'. The depths from 13,180' to 14,180' will not have a casing string, thus an "open-hole" completion. The Devonian target zone for injecting is a depleted zone considered to be under pressured and will be drilled with cut brine 8.4-8.9 PPG. The injection tubing will be set to depth of 13,180' inside the 7". All intervals will be logged prior to running casing per BLM/OCD requirements.

8. **Pressure Controls:**

*See COA & submitted diagram*

A 10M 13-5/8" BOP system (~~Double Ram~~ and Annular preventer) and 2 power chokes installed on manifold and 1 manual choke per BLM Onshore Order 2, will be installed and tested prior to drilling out the surface casing shoe. The BOP system used to drill the intermediate hole will be test per BLM Onshore Oil and Gas Order 2.

*See COA*

A 10M 13-5/8" BOP system (~~Double Ram~~ and Annular preventer) will be installed and tested prior to drilling out the intermediate casing shoe. The BOP system used to drill the production hole will be test per BLM Onshore Oil and Gas Order 2.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories, include a Kelly cock, floor safety valve, choke lines, and choke manifold rated at 5,000 psi WP.

*10000*

9. Cement Program:

Surface: TD @ <sup>360</sup>500' - Float/Landing Collar set @ 458'. We will circulate cement to surface

Interval	Amount (sacks)	Ft of Fill	Excess (%)	PPG	Ft <sup>3</sup> /sx	Volume (ft <sup>3</sup> )	Cement Type
Tail	874	500	100	14.8	1.33	1159	Class C + 0.125 lb/sk Polyflake

1<sup>st</sup> Intermediate: TD @ <sup>1900</sup>1500' – Stage 1 float collar @ <sup>1858'</sup>1458' We will circulate cement to surface.

13 3/8 Contingency Cement design as follows: *See COA*

If hole conditions warrant and we will adjust DVT depth per circulation requirements. The current estimated setting is N/A and cement volumes will be adjusted proportionally to maintain equivalent excess in all slurries.

Interval	Amount (sacks)	Ft of Fill	Excess (%)	PPG	Ft <sup>3</sup> /sx	Volume (ft <sup>3</sup> )	Cement Type
<del>Stage 1</del> Lead	438	900'	100	11.9	2.45	243	Class C + 2% Sodium Metasilicate + 0.1% Dispersant + 0.2% Antifoam + 0.2% Retarder
<del>Stage 1</del> Tail	679	600'	100	14.8	1.33	901	Class C + 0.125 lbs/sk Polyflake

2<sup>nd</sup> Intermediate: TD @ <sup>3600</sup>3800'. Stage 1 Float Collar <sup>3558'</sup>3758'

9 5/8 Contingency Cement design as follows:

*See COA*

If hole conditions warrant and we will adjust ECP/DVT depth per circulation requirements. The current estimated setting is N/A and cement volumes will be adjusted proportionally to maintain equivalent excess in all slurries.

Interval	Amount (sacks)	Ft of Fill	Excess (%)	PPG	Ft <sup>3</sup> /sx	Volume (ft <sup>3</sup> )	Cement Type
<del>Stage 1</del> Lead	528	3200	50	11	2.47	1302	TXI + 2% Sodium Metasilicate + 0.2 % Dispersant + 0.2% Antifoam + 0.4% Retarder
<del>Stage 1</del> Tail	225	600	50	14.8	1.33	299	Class C + 0.3% Retarder + 0.2% Antifoam

**Production: Stage 1 Float/Landing Collar set @ 13,138', Stage 2 Collar set @ 9500'. We will circulate cement to surface.**

7" Contingency Cement design as follows:

If hole conditions warrant and we will adjust ECP/DVT depth per circulation requirements. The current estimated setting is 9500' cement volumes will be adjusted proportionally to maintain equivalent excess in all slurries.

Interval	Amount (sacks)	Ft of Fill	Excess (%)	PPG	Ft <sup>3</sup> /sk	Volume (ft <sup>3</sup> )	Cement Type
Stage 1	337	3070	25	13.5	1.29	487	TXI + 1.5 gal/sk GASBLOK + 0.08 gal/sk D80 Dispersant + 0.04 gal/sk D801 Retarder + 0.05 gal/sk D175A Antifoam + 2% D176 Expanding Agent
Lead							
Stage 1 Tail	104	610	25	16.4	1.09	112	Class H + 0.4% D167 Fluid loss + 0.3% D800 Retarder + 2% D176 Expanding agent
Stage 2 Lead	535	8700	25	11.5	2.39	1271	TXI + 10% D154 Extender + 0.6% D112 Fluid loss + 0.1% D208 Viscosifier + 3% D174 Expanding Agent + 4 lbs/sk Mica + 0.2% D65 Dispersant
Stage 2 Tail	116	800	25	16.4	1.09	127	Class H + 0.4% D167 Fluid loss + 0.3% D800 Retarder + 2% D176 Expanding agent

The contingency ECP/DVT tool setting depth may change and cement will be adjusted accordingly.

#### 10. Type and Characteristics of Mud System:

Depth MD/TVD (ft)	Mud Type	Mud Density (ppg)	Viscosity (sec/1000cc)	Plastic Viscosity (cP)	Yield Point (lb/100ft <sup>2</sup> )	API Fluid Loss (cc)	pH	LGS %
<del>120 - 450</del>	New Gel/Soda Spud Mud	8.8 - 9.2	60 - 70	12 - 28	12 - 34	20	+/-9.0	<6
<del>450 - 2,900</del>	Brine Water	10.0 - 10.1	29 - 30	0 - 1	0 - 1	NC	9.5 - 10.0	<6
<del>2,900 - 7660</del>	Existing Brine to New Zan D/White Starch/ Barite	10.0 - 10.1	29 - 30	0 - 1	0 - 1	NC	9.5 - 10.0	<6
<del>7660 - 15,550</del>		10.1 - 11.5	36 - 44	6 - 14	12 - 18	10 - 12	9.5 - 10.0	<6
<del>15,550 - 16,550</del>	Cut brine	8.4 - 8.9	28 - 30	0 - 1	0 - 1	NC	9. - 9.5	<6

0-360  
360-1900  
1900-3600  
3600-13180

13180 - 14180

Our goal for all DVT and ECP is to run with full intentions of running the 2 stage job. This will help insure good tail cement and help insure cement to surface.

11. **Air Drilling Description:** Not applicable.

12. **Testing, Coring, and Logging Procedures:**

- \* See COA
- A. Mud logging program: 2 man unit from ~~2,900'~~ <sup>1900'</sup> (setting depth of salt string) to TD.
- B. Electric logging program: open hole logs CNL / LDT / CAL / GR, DLL / SGR (CNL/GR from base of Intermediate casing to surface) from ~~15,550~~ <sup>13,180</sup> to Intermediate casing and TD-~~15,550~~ <sup>12,180</sup>
- Cased Hole Logs*
- CBL w/ CCL from base of Intermediate casing to surface (if cement is not circulated to surface)
- CBL w/ CCL from production casing DV tool at ~~8,000' to 3,000'~~ <sup>9,900'</sup> (estimated top of cement at 4,000')
- C. No DST's or cores are planned
- D. Sonic log: not required but available if needed

13. **Expected Bottom Hole Pressure and Temperature:** 6,440 psi , 170° F.

14. **Abnormal Conditions:**

15. **H<sub>2</sub>S Plan:** Breathing equipment will be available on location. If H<sub>2</sub>S is encountered the operator will comply with the Onshore Oil and Gas Order No. 6. The H<sub>2</sub>S measured amounts and formation will be reported to the BLM. Please see the attached H<sub>2</sub>S Plan and the H<sub>2</sub>S awareness map.

16. **Directional or Horizontal Survey:** The well is neither directional nor horizontal.

17. **Unit Well Current Unit POD:** The well is not in a unit or current unit POD.

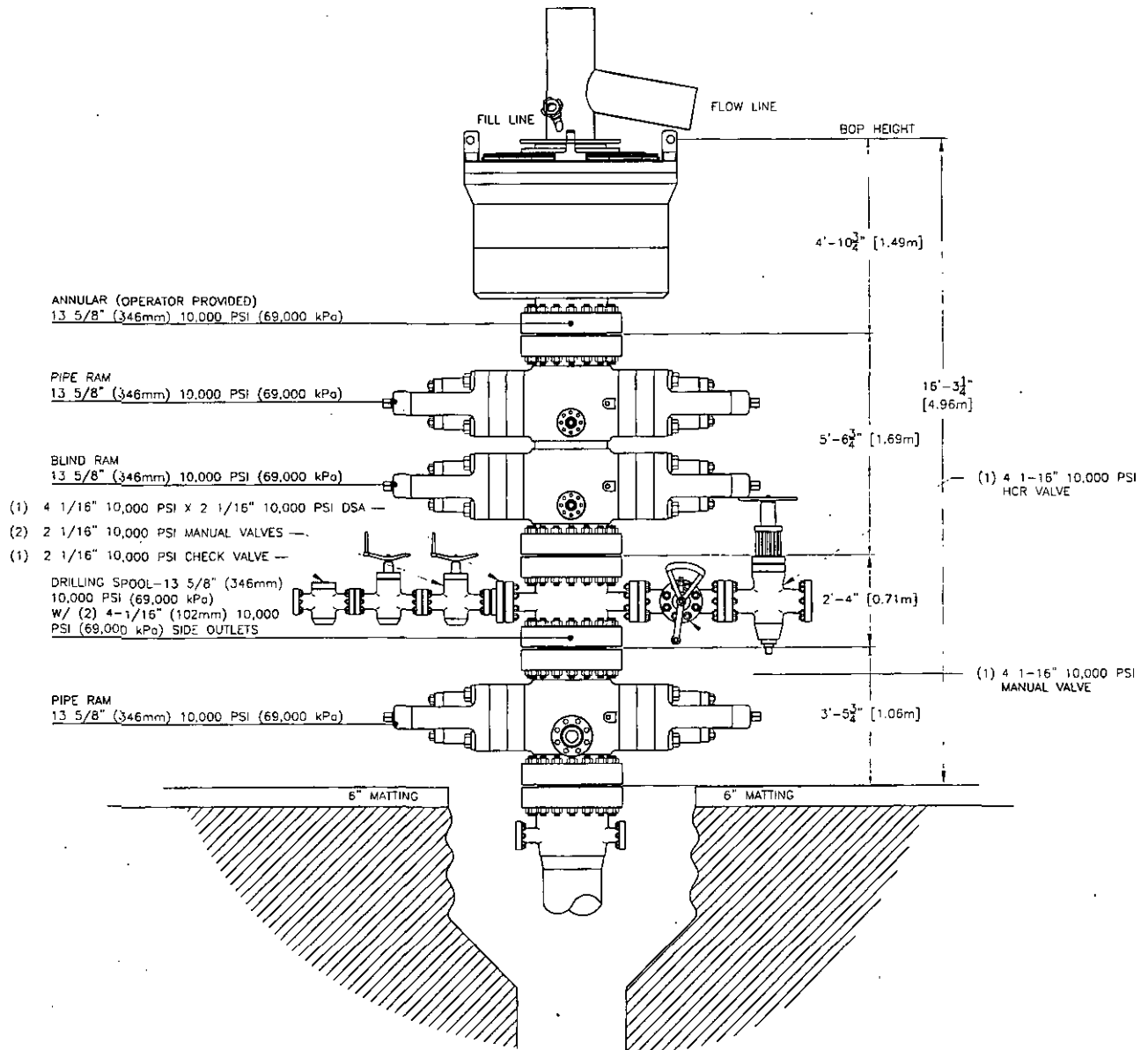
18. **Work Schedule:** To be determined.

\* See COA

19. **Completion plans:** MIRU well service unit. PU 2 7/8" PH-6 work string. TIH, release retrievable bridge plug and pull out of hole. Pick up treating packer. TIH to ~~15,500'~~ <sup>13,180'</sup> and set. Test back side to 1000 psi. Acidize down tubing with five stages – 8000 gallons 15% HCL each stage followed by 1500 lbs of rock salt each stage. Release packer and pull out of hole. Trip in hole with tubing with notched collar. Circulate clean to TD. Pull out of the hole and pick up 7" Arrow Set 1X packer. Trip in the hole to ~~15,500'~~ <sup>13,180'</sup>. Set blanking plug and on/off tool. Release packer and pull out of hole, laying down 2 7/8" work string. Pick up 4 1/2" lined injection tubing. Trip in hole and get on on/off tool. Release packer. Space out. Reset packer. Release on/off tool again. Circulate packer fluid. Get back on on/off tool. Nipple down BOP and nipple up well head. Schedule and perform MIT on tubing casing annulus per OCD and BLM guidelines. Turn well over to R360 for plumbing up surface facilities.

# BOP LAYOUT

RIG XXX



NOTE: CASING BOWL SET AT MATTING LEVEL AND  $\frac{3}{4}$ "  
ALLOWANCE FOR RING GASKET GAP.

STACK COMPONENTS REPRESENTED ARE SUBJECT TO AVAILABILITY, PLEASE CONFIRM WITH WELL CONTROL DEPARTMENT MANAGER.



EQUIPMENT REPRESENTATION ONLY  
NOT DRAWN TO SCALE

**PRECISION DRILLING**

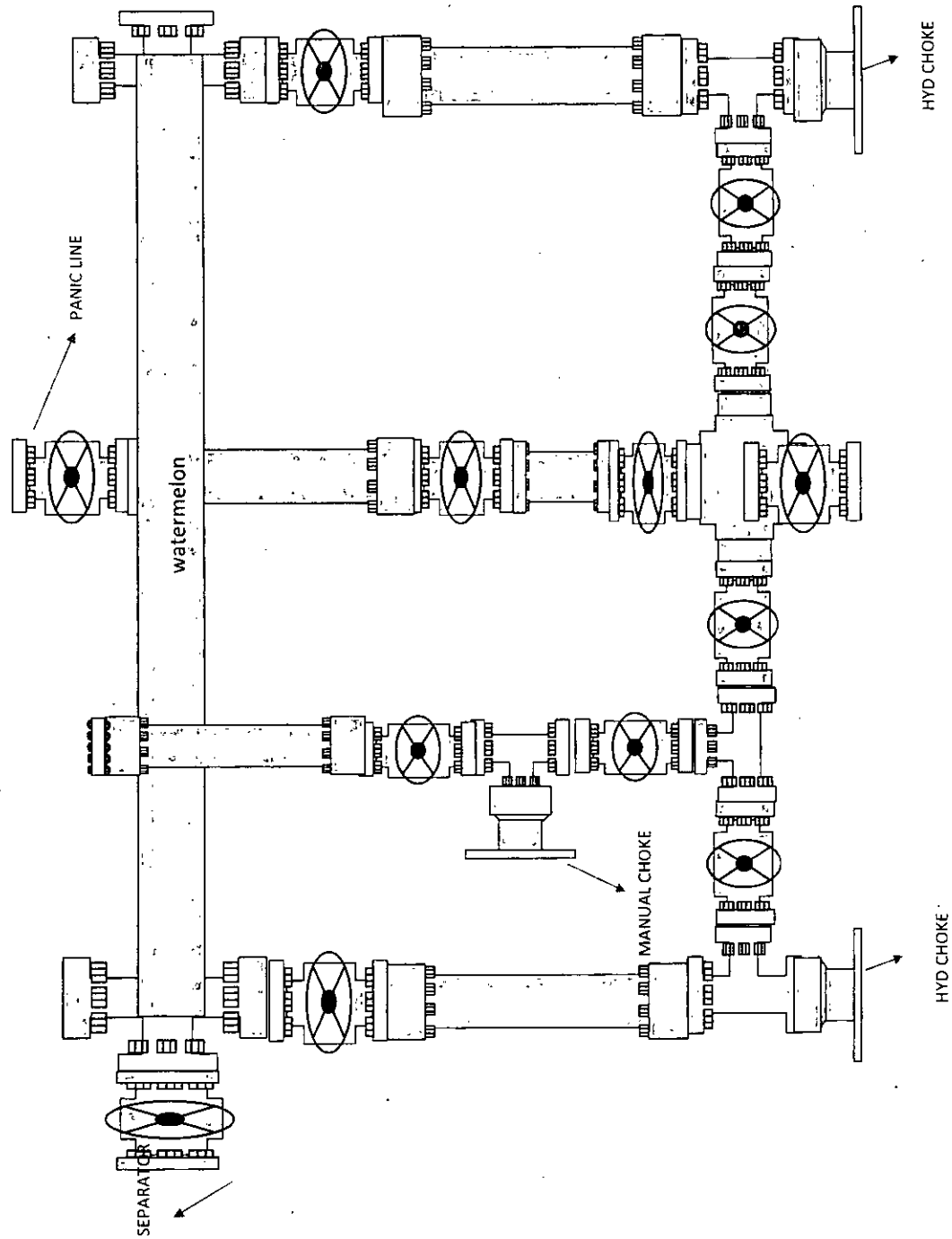
DATE: 2016/03/08  
DWG No.: BOP-XXX-011  
DWG BY: MRK

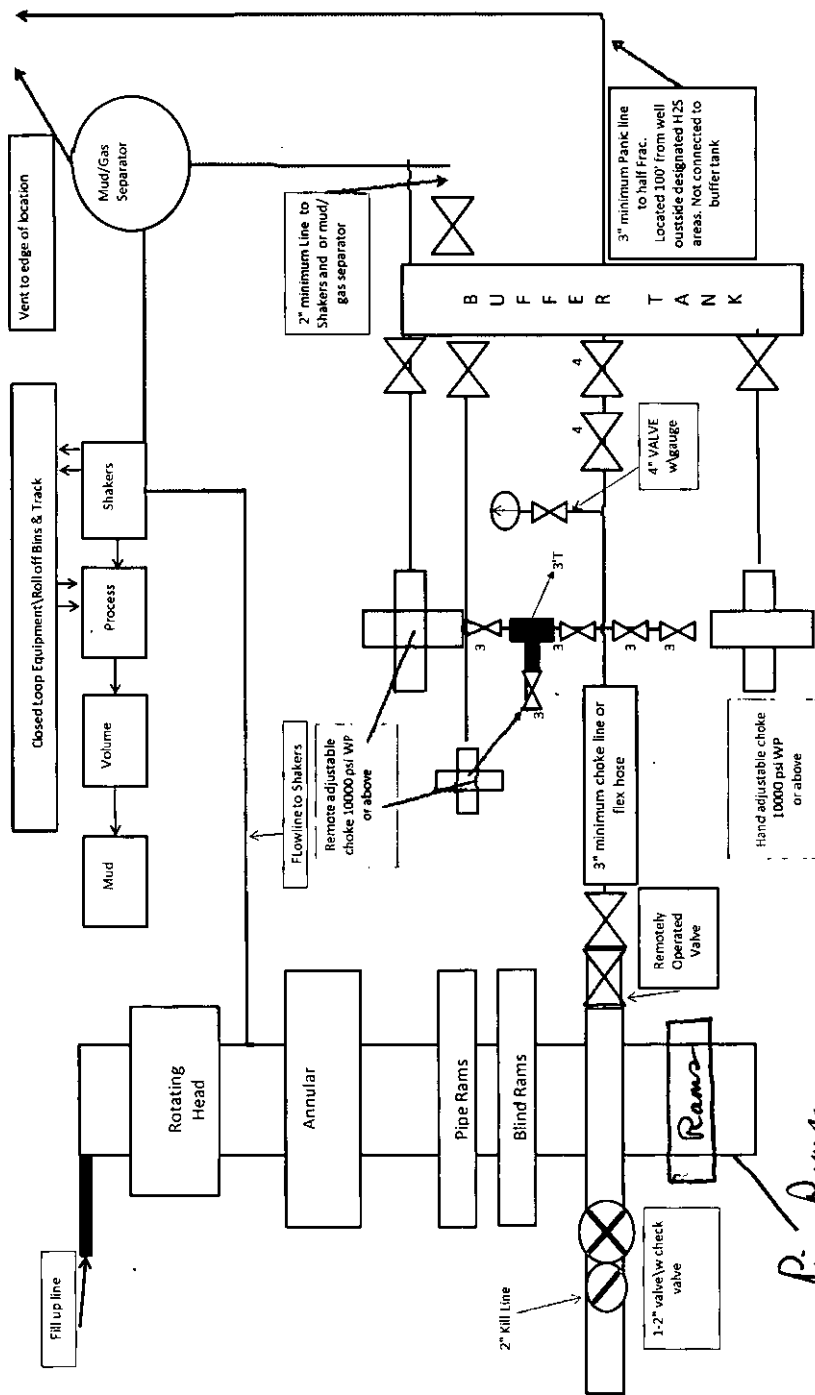


*Outback Products*

R360 ~~CHOKING~~ SWD

ALL 3" TRIPLE CHOKE MANIFOLD  
WITH 1 MANUAL CHOKE AND 2 HYDRAULIC CHOKES





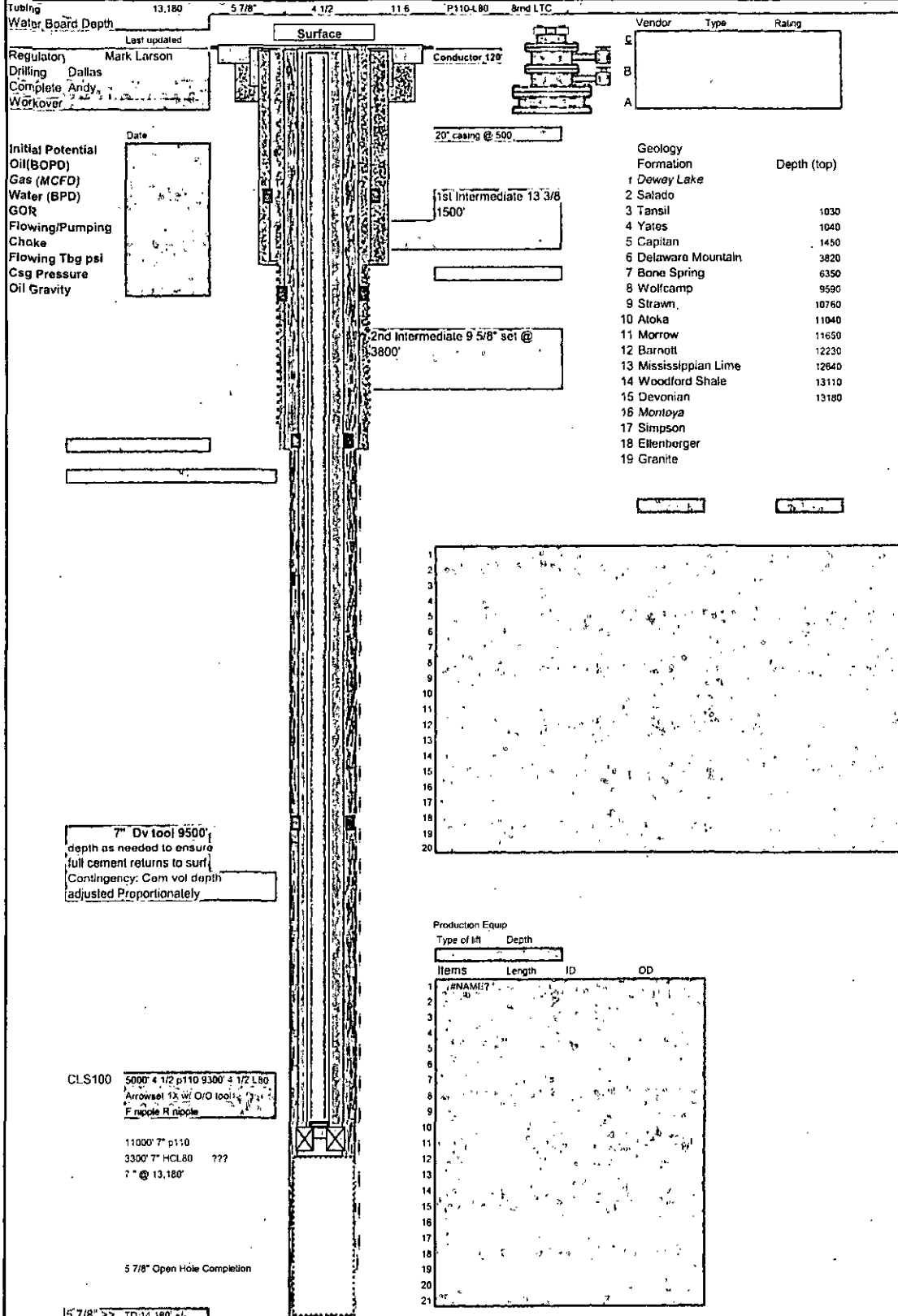
McVay 11" or 13 5/8" X 10-M BOP (2 Rams and Rotating Head) & Closed Loop System Equipment  
Schematic  
Diagram C

*Pipe Rams Required*

# Cambrian Management

## EXECUTIVE SUMMARY WELLBORE DIAGRAM

WELL NAME: R 360 Outer Banks	STATE: New Mexico	Permit #		Job #	
LOCATION: 120S, R29 E Section 24	COUNTY: Eddy	Spud	TD	Reg Release	rig Days
ELEVATION: 21	DATE	Drill			0
API#		Cond/le			0
Drill Contractor: TBD	PREPARED: A Rickard	TVD	14,180'	PBTD	
	WEIGHT	GRADE	THREAD	CMT VOL	TOC
Conductor CASING:	DEPTH	HOLE SIZE	CASING SIZE	See cement slurries below	
Surf CASING:	500'	26"	20"	106.4 ppi	US5 LTC
1st Int CASING:	1500'	17 1/2"	13 3/8"	68 ppi	J-55 LTC
2nd Int CASING:	3,800'	12 1/4"	9 5/8"	53.5	L-80 LTC
Prod Casing	13,180'	8 1/2"	7"	35/29/35	L80-P110-HCL LTC
Tubing	13,180'	5 7/8"	4 1/2"	11.6	P110-L80 8rd LTC



## Certificate of Conformance

CHK HOSE, 4"ID X 42' 6"; 10K PSI

RIG/PLANT RIG 120		
ADDITIONAL CONF	SDRL CODE	TOTAL PGS
REMARKS 29010000		
MAIN TAG NUMBER 20032236-61012		DISCIPLINE
CLIENT PO NUMBER 29		
CLIENT DOCUMENT NUMBER		

REFERENCE 829847	REFERENCE DESCRIPTION CHK HOSE, 4"ID X 42' 6", 10K PSI	
<small>This document contains proprietary and confidential information which belongs to National Oilwell Varco, it is loaned for limited purposes only and remains the property of National Oilwell Varco. Reproduction, in whole or in part, or use of this design or distribution of this information to others is not permitted without the express written consent of National Oilwell Varco. This document is to be returned to National Oilwell Varco upon request and in any event upon completion of the use for which it was loaned. © Copyright National Oilwell Varco - 2011</small>		National Oilwell Varco 12950 W. Little York Houston, TX 77041 Phone 713-937-5000 Fax 713-849-6147
DOCUMENT NUMBER 20032236-61012-COC-001		REV 01



**NATIONAL OILWELL VARCO**

[WWW.NOI.V.COM](http://WWW.NOI.V.COM)

Document number	20032236-61012-COC-001
Revision	01

## NOV CERTIFICATE OF CONFORMANCE

Certificate of Conformance	
Equipment Name	CHK HOSE, 4"ID X 42' 6", 10K PSI
Part Number	20032236
Serial Number	20032236-61012
Customer	NOV-GALENA PARK-CO 514
Rig	RIG 120
Customer Purchase Order	29
NOV Sales Order	829847
Date of Manufacturing	AUGUST 2011
Quantity	ONE (1)

NOV certifies that the above equipment:

Was manufactured and inspected in accordance with NOV specifications and customer purchase order requirements.

Prepared By: Angela Gomez  
Documentation Specialist

Certified By: David K...  
Quality Department



THIS IS AN EXAMPLE THIS DIAGRAM MUST BE PRESENT ON SITE FOR THE ACTUAL TEST RUN BEING USED



Midwest Hose  
& Specialty, Inc.

# Internal Hydrostatic Test Graph

Customer: Houston

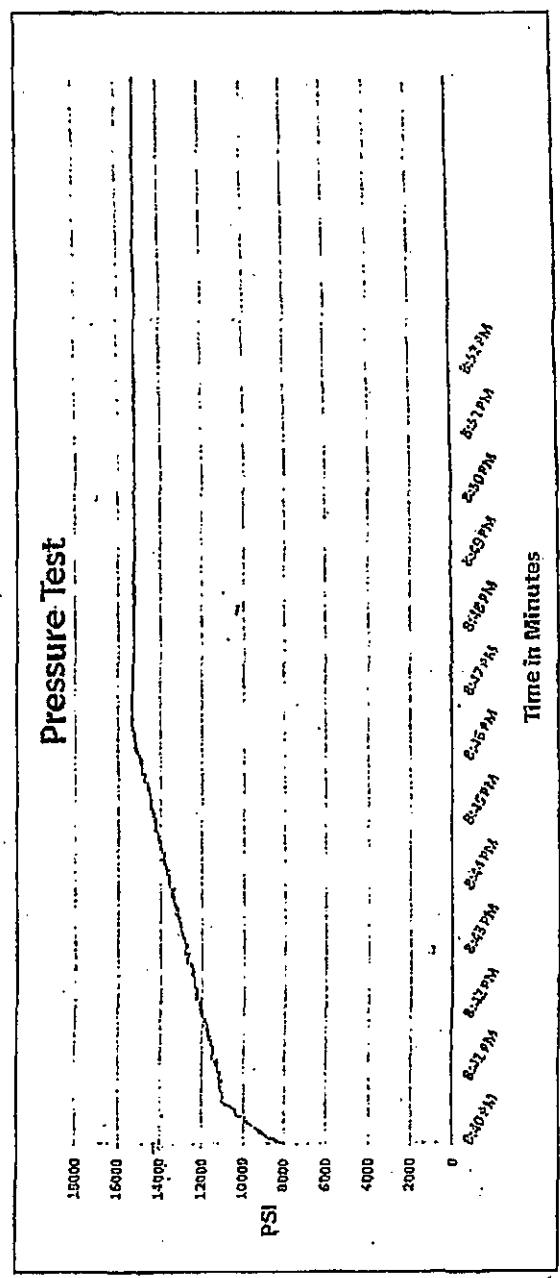
Pick Ticket #: 94260

## Hose Specifications

Hose Type: C&K  
I.D.: 4"  
Working Pressure: 10000 PSI  
Length: 45'  
O.D.: 6.03"  
Rupture Pressure: Standard Safety Factor Applies

## Verification

Type of Fittings: 41/16 JIC  
Die Size: 6.38"  
Hose Serial #: 5544  
Coupling Method: Swage  
Final O.D.: 6.25"  
Hose Assembly Serial #: 79793



Test Pressure: 15000 PSI  
Time Held at Test Pressure: 11 Minutes  
Actual Burst Pressure: 15483 PSI  
Peak Pressure: 15483 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Zac McConnell

Approved By: Kim Thomas

*[Signature]*

*[Signature]*

Exhibit F-1 - Co-Flex Hose Hydrostatic Test  
Outer Banks Cypress SWD - 1  
R360 Permian Basin, LLC  
13-205-29E 34-235-29E  
Eddy County, NM

**Outer Banks SWD #1 APD**

**H<sub>2</sub>S Plan**

**1. Hydrogen Sulfide Training**

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

- A. The hazards and characteristics of hydrogen sulfide (H<sub>2</sub>S).
- B. The proper use and maintenance of personal protective equipment and life support systems.
- C. The proper use of H<sub>2</sub>S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds,
- D. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

- A. The effects of H<sub>2</sub>S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
- B. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
- C. The contents and requirements of the H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H<sub>2</sub>S zone (within 3 days or 500 feet) and weekly H<sub>2</sub>S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

**2. H<sub>2</sub>S Safety Equipment and Systems**

All H<sub>2</sub>S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H<sub>2</sub>S.

- A. Well Control Equipment:
  - Flare line.
  - Choke manifold with remotely operated choke.
  - Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
  - Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head.
- B. Protective equipment for essential personnel:
  - Mark II Surviveair 30-minute units located in the dog house and at briefing areas.
- C. H<sub>2</sub>S detection and monitoring equipment:

- (2) Portable H<sub>2</sub>S monitor positioned on location for best coverage and response. These units have warning lights and audible sirens when H<sub>2</sub>S levels of 20 ppm are reached.
- D. Visual warning systems:
  - Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See attached example.
- E. Mud Program:
  - The mud program has been designed to minimize the volume of H<sub>2</sub>S circulated to the surface.
- F. Metallurgy:
  - All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H<sub>2</sub>S service.
- G. Communication:
  - Company vehicles equipped with cellular telephone.

R360 Permian Basin LLC has conducted a review to determine if an H<sub>2</sub>S contingency plan is required for the above referenced well. We were able to conclude that any potential hazardous volume would be minimal. H<sub>2</sub>S concentrations of wells in this area from surface to TD are low enough; therefore, we do not believe that an H<sub>2</sub>S contingency plan is necessary.



# **WARNING**

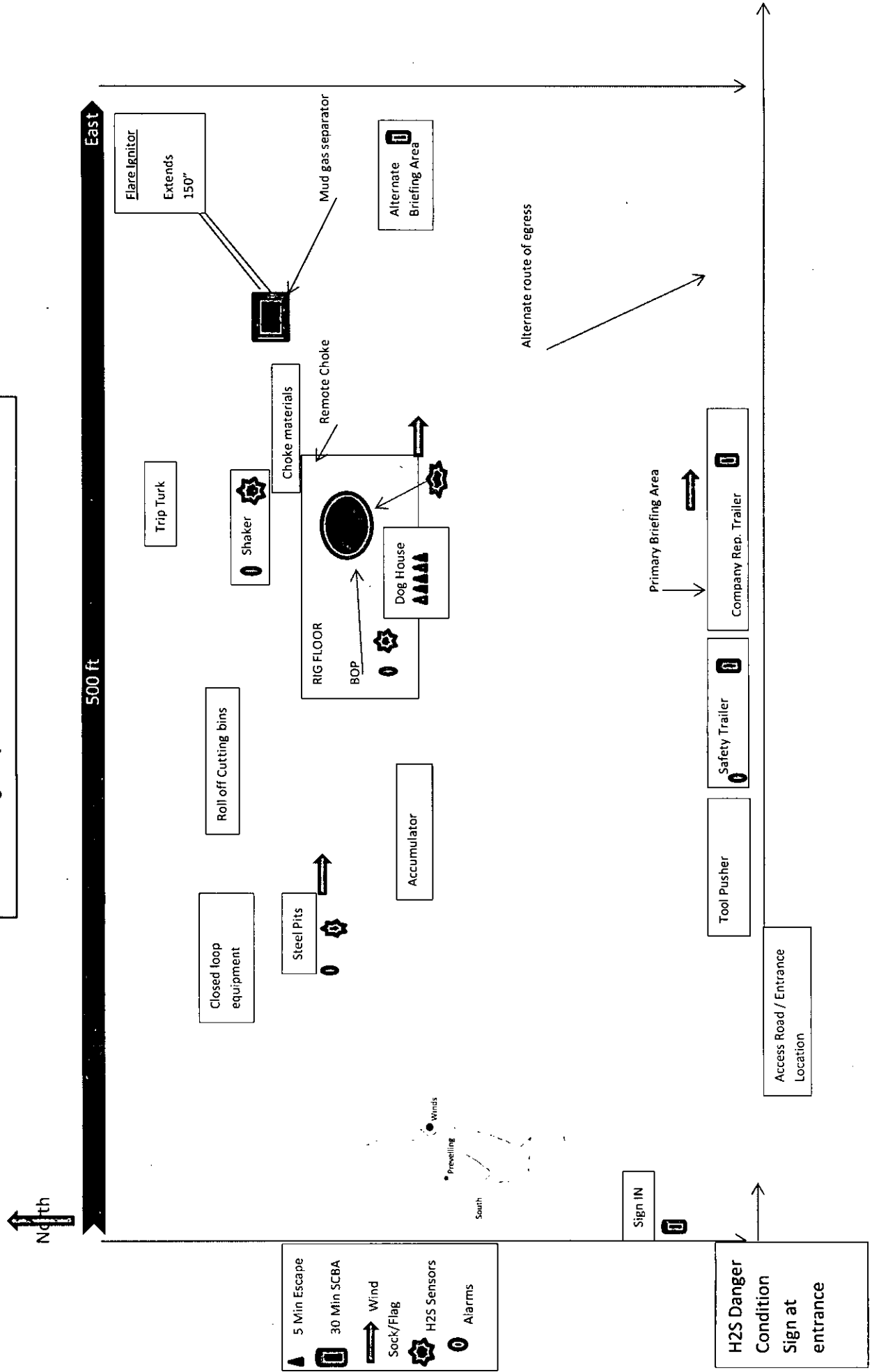
**YOU ARE ENTERING AN H<sub>2</sub>S AREA  
AUTHORIZED PERSONNEL ONLY**

- 1. BEARDS OR CONTACT LENSES NOT ALLOWED**
- 2. HARD HATS REQUIRED**
- 3. SMOKING IN DESIGNATED AREAS ONLY**
- 4. BE WIND CONSCIOUS AT ALL TIMES**
- 5. CHECK IN WITH R360 FOREMAN AT MAIN OFFICE**

**R360 PERMIAN BASIN**

**1-832-442-2200**

Contingency Plan for Outer Banks SWD #1



**Outer Banks SWD #1 APD**

**Surface Use Plan**

**1. Existing & Proposed Access Roads**

- A. The well site survey and elevation plat for the proposed well is attached with this application. It was staked by Basin Surveys, Hobbs, New Mexico.
- B. All roads to the location are shown in the Vicinity Map. The existing lease roads are illustrated and are adequate for travel during drilling and production operations. Upgrading existing roads prior to drilling the well will be done where necessary.
- C. Directions to location: From the intersection of 62-180 & CR 238, go north on CR 238 1.2 miles on lease road, west 0.2 miles to southwest corner of Marbob Dice Roll #1 Pad.
- D. Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease. Roads will be maintained according to specifications in Section 2A of this Surface Use Plan.

**2. Proposed Access Road:**

No access roads are planned to be constructed. If any road is required it will be constructed as follows:

- A. The maximum width of the running surface will be 30'. The road will be crowned, ditched and constructed of 6" rolled and compacted caliche. Ditches will be at 3:1 slope and 4 feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns.
- B. The average grade will be less than 2%.
- C. Turnouts will be intervisible with interval spacing distance less than 1000 feet..
- D. No culverts, cattleguard, gates, low water crossings or fence cuts are necessary.
- E. Surfacing material will consist of native caliche. Caliche will be obtained from the actual well site if available. If not available onsite, caliche will be hauled from the nearest BLM approved caliche pit.

**3. Location of Existing Well:**

The One-Mile Radius Map shows existing wells within a one-mile radius of surface hole location and the bottom hole location.

**4. Location of Existing and/or Proposed Facilities:**

- A. An SWD facility will be constructed on private land owned by R360 Permian Basin LLC as shown in the figure attachments.
- B. The facility will be installed according to API specifications.
- C. Any additional caliche will be obtained from the actual well site. If caliche does not exist or is not plentiful from the well site, the caliche will be hauled from a BLM approved caliche pit. Any additional construction materials will be purchased from contractors.
- D. It will be necessary to run electric power if this well is productive. Power will be provided by local energy company and they will submit a separate plan and ROW for service to the well location.
- E. Rehabilitation plans will include the following:
  - The original topsoil from the well site will be returned to the location, and the site will be re-contoured as close as possible to the original site.

**5. Location and Type of Water Supply:**

The well will be drilled with combination brine and fresh water mud system as outlined in the drilling plan. The water will be obtained from commercial water stations in the area and hauled to location by transport truck over the existing and proposed access road. If a commercial fresh water source is nearby, fast line may be laid along existing road ROW's and fresh water pumped to the well. No water well will be drilled on the location.

**6. Source of Construction Materials :**

Obtaining caliche: Caliche will be obtained from the existing caliche pit at R360 Halfway Facility or from a BLM approved Caliche pit.

**7. Methods of Handling Water Disposal:**

- A. The well will be drilled utilizing a closed loop mud system. Drill cuttings will be held in roll-off style mud boxes and taken to an NMOCD approved disposal site.
- B. Drilling fluids will be contained in steel mud pits.
- C. Water produced from the well during completion will be held temporarily in steel tanks and then taken to an NMOCD approved commercial disposal facility.

- D. Garbage and trash produced during drilling or completion operations will be collected in a trash bin and hauled to an approved landfill. No toxic waste or hazardous chemicals will be produced by this operation.
- E. Human waste and grey water will be properly contained and disposed of. Proper disposal and elimination of waste and grey water may include but are not limited to portable septic systems and/or portable waste gathering systems (i.e. portable toilets). Human waste and grey water will be disposed at an approved facility.
- F. After the rig is moved out and the well is either completed or abandoned, all waste materials will be cleaned up within 30 days.

**8. Ancillary Facilities:**

No airstrip, campsite or other facilities will be built as a result of the operation on this well.

**9. Well Site Layout:**

- A. The drill pad layout, with elevations staked by Basin Surveys, is shown in the Elevation Plat.
- B. The Closed-Loop exhibit shows the proposed orientation of closed loop system and access road. No permanent living facilities are planned, but a temporary foreman/toolpusher's trailer will be on location during the drilling operations.

**10. Plans for Restoration of the Surface:**

- A. Interim reclamation will take place after the well has been completed. The pad will be downsized by reclaiming the areas not needed for production operations. The portions of the pad that are not needed for production operations will be re-contoured to its original state as much as possible. The caliche that is removed will be reused to either build another pad site or for road repairs within the lease. The stockpiled topsoil will then be spread out reclaimed area and reseeded with a BLM approved seed mixture. In the event that the well must be worked over or maintained, it may be necessary to drive, park, and/or operate machinery on reclaimed land. This area will be repaired or reclaimed after work is complete.
- B. Final Reclamation: Upon plugging and abandoning the well all caliche for well pad and lease road will be removed and surface will be recontoured to reflect its surroundings as much as possible. Caliche will be recycled for road repair or reused for another well pad within the lease. If any topsoil remains, it will be spread out and the area will be reseeded with a BLM approved mixture and re-vegetated as per BLM orders.

**11. Surface Ownership:**

- A. The surface is owned by the U.S. Government and is administered by the Bureau of Land Management. The surface is multiple uses with the primary uses of the region for grazing of livestock and the production of oil and gas.
- B. The proposed road routes and surface location will be restored as directed by the BLM.

**12. Other Information:**

- A. The area around the well site is grassland and the topsoil is sandy. The vegetation is moderately sparse with native prairie grasses, some mesquite and shinnery oak. No wildlife was observed but it is likely that mule deer, rabbits, coyotes and rodents traverse the area.
- B. There is no permanent or live water in the immediate area.
- C. There are no dwellings within 2 miles of this location.

**13. Bond Coverage:**

Bond Coverage is Statewide Bonds # NMB929591818

R360 Environmental Solutions Inc.

**Outerbanks #1 APD**

**Operator Certification**

I hereby certify that I, or persons under my direct supervision, have inspected the drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or R360 Permian Basin LLC, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 29<sup>th</sup> day of December, 2015.

Signed: \_\_\_\_\_

Printed Name: Luke Bross  
Position: Legislative & Regulatory Affairs Manager  
Address: 3 Waterway Square Place, Suite 110  
The Woodlands, Texas 77380  
Telephone (281) 873-3202  
Email: Lukeb@r360es.com

**PECOS DISTRICT  
CONDITIONS OF APPROVAL**

**NM OIL CONSERVATION**

ARTESIA DISTRICT

JUL 25 2016

RECEIVED

OPERATOR'S NAME:	6360 Permian Basin LLC
LEASE NO.:	NMNM110350
WELL NAME & NO.:	1 – Outer Banks SWD
SURFACE HOLE FOOTAGE:	1990'/S & 955'/E
BOTTOM HOLE FOOTAGE:	1990'/S & 955'/E
LOCATION:	Section 13, T 20 S., R 29 E., NMPM
COUNTY:	Eddy County, New Mexico

**TABLE OF CONTENTS**

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Lesser Prairie-Chicken Timing Stipulations
  - Ground-level Abandoned Well Marker
  - Cave/Karst
  - Completion Sundry and Logs
- ☐ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
  - Casing/Cement Requirements
  - Logging Requirements
  - Waste Material and Fluids
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**



## **I. GENERAL PROVISIONS**

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## **II. PERMIT EXPIRATION**

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## **III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES**

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## **IV. NOXIOUS WEEDS**

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

## V. SPECIAL REQUIREMENT(S)

### **Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken:**

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

**Ground-level Abandoned Well Marker to avoid raptor perching:** Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

### **Construction Mitigation**

In order to mitigate the impacts from construction activities on cave and karst resources, the following Conditions of Approval will apply to this APD:

1. To prevent any spills from leaving the pads, a two foot berm will be built on the edge of the SWD well pad and the off-load pad to protect karst resources.
2. The company or contractors shall have in their immediate possession a copy of the approved APD and Right-of-Way while building the well location, off-load facility and pipeline.
3. In the event that any underground voids are encountered during construction activities, construction activities will be halted and the BLM will be notified immediately.
4. No Blasting is allowed to prevent geologic structure instabilities.

### **Drilling Mitigation**

Federal regulations and standard Conditions of Approval applied to all APDs require that adequate measures be taken to prevent contamination to the environment. Due to the

extreme sensitivity of the cave and karst resources in this project area, the following additional Conditions of Approval will be added to this APD.

To prevent cave and karst resource contamination the following will be required.

1. A closed loop drilling system will be used with all fluids and cuttings hauled to an authorized disposal facility.
2. In the event that any underground voids are encountered during construction activities, construction activities will be halted and the BLM will be notified immediately.
3. Rotary drilling with fresh water is required where cave or karst features are expected (to prevent contamination of freshwater aquifers).
4. Lost circulation zones will be logged and reported in the drilling report so BLM can assess the situation and work with the operator on corrective actions.
5. Additional drilling, casing, and cementing procedures to protect cave zones and fresh water aquifers. See Drilling COAs.
6. A leak detection system is required to provide an early alert to operators when a leak has occurred.
7. Automatic shut off, check valves, or similar systems will be installed for the pipeline and tanks to minimize the effects of line/tank failures.
8. The operator will perform annual pressure monitoring. If the test results indicate a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

### **Production Mitigation**

In order to mitigate the impacts from disposal of produced water, the following Conditions of Approval will apply to this APD:

1. Containment berms will be constructed around all tanks. The containment berms will be lined. The berms will be constructed with compacted material capable of holding 1½ time the capacity of the largest tank.
2. A leak detection system is required to provide an early alert to operators when a leak has occurred.
3. Automatic shut off, check valves, or similar systems will be installed for the pipeline and tanks to minimize the effects of line/tank failures.

### **Residual and Cumulative Mitigation**

1. The operator will perform annual pressure monitoring. If the test results indicate a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

## **Plugging and Abandonment Mitigation**

1. Abandonment Cementing: Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

**The operator shall supply the BLM with a copy of a mudlog over the permitted disposal interval and estimated insitu water salinity based on open-hole logs. If hydrocarbon shows occur while drilling, the operator shall notify the BLM.**

**The operator shall run and provide a CBL on the 7-inch casing from TD to surface.**

**The operator shall provide to the BLM a summary of formation depth picks based on mudlog and geophysical logs along with a copy of the mudlog and open hole logs from TD to top of wolfcamp**

A NOI sundry with the completion procedure for this well shall be submitted and approved prior to commencing completion work. The procedure will be reviewed to verify that the completion proposal will allow the operator to:

1. Properly evaluate the injection zone utilizing open hole logs, swab testing along any other method to confirm that hydrocarbons cannot be produced in paying quantities. This evaluation shall be reviewed by the BLM prior to injection commencing.
2. Restrict the injection fluid to the approved formation.
3. If a step rate test will be run an NOI sundry shall be submitted to the BLM for approval

If off-lease water will be disposed in this well, the operator shall provide proof of right-of-way approval.

## **VI. CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

### **B. TOPSOIL**

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

### **C. CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

### **D. FEDERAL MINERAL MATERIALS PIT**

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

### **E. WELL PAD SURFACING**

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

## **F. EXCLOSURE FENCING (CELLARS & PITS)**

### **Exclosure Fencing**

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

## **G. ON LEASE ACCESS ROADS**

### **Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

### **Surfacing**

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

### **Crowning**

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

### **Ditching**

Ditching shall be required on both sides of the road.

### **Turnouts**

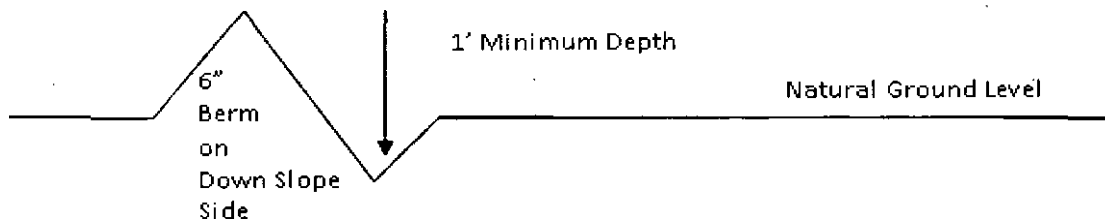
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

### **Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

#### **Cross Section of a Typical Lead-off Ditch**



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

#### **Formula for Spacing Interval of Lead-off Ditches**

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

### **Cattleguards**

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguards that are in place and are utilized during lease operations.

### **Fence Requirement**

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

## Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

### Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

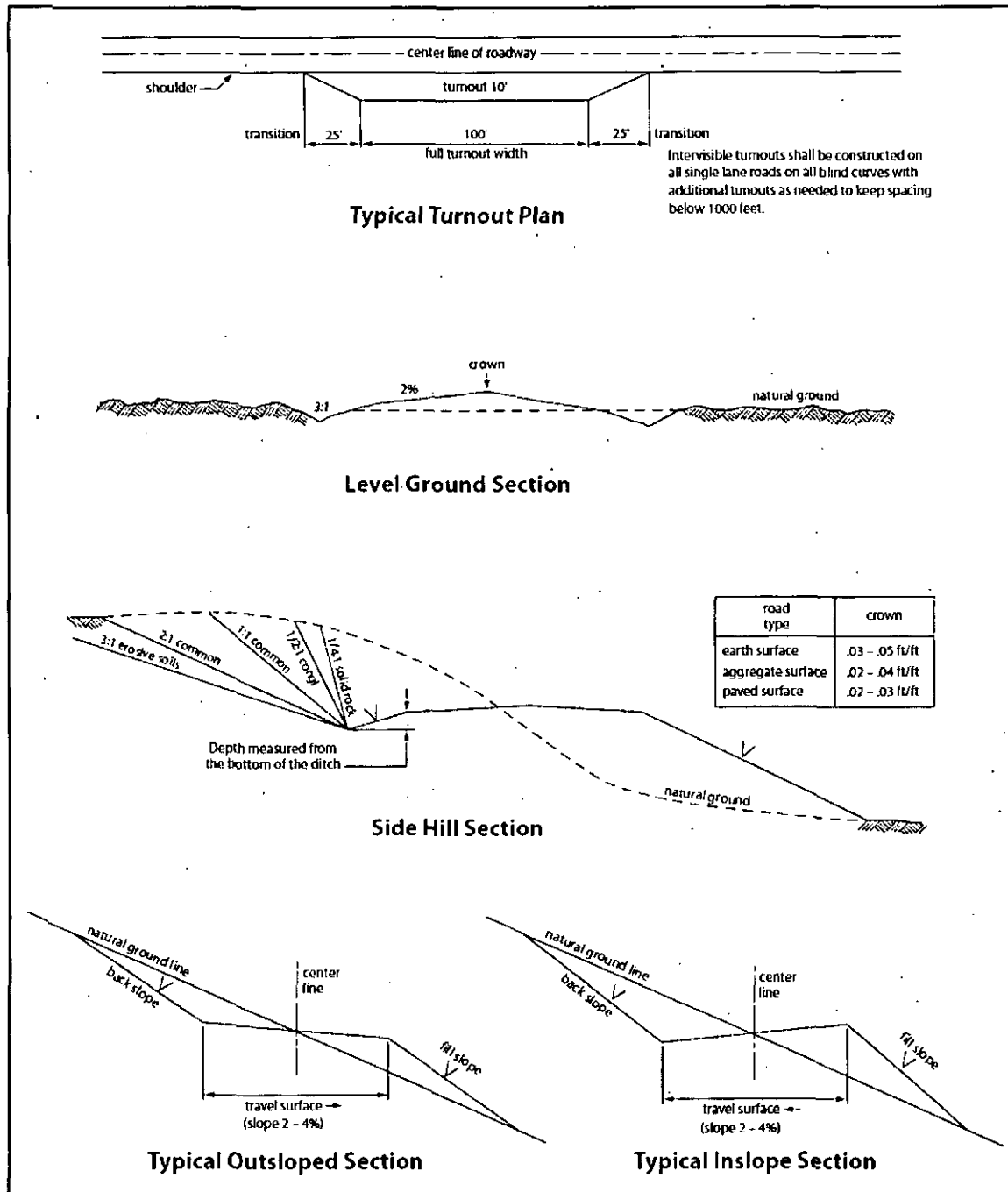


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.



## VII. DRILLING

### A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ **Eddy County**

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

1. **Hydrogen Sulfide (H<sub>2</sub>S) monitors shall be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

### B. CASING

**Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less**

volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

**Centralizers required on surface casing per Onshore Order 2.III.B.1.f.**

**Wait on cement (WOC) for Potash Areas:**

After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least **24 hours**. WOC time will be recorded in the driller's log. **DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE.**

**No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.**

**Possible lost circulation in the Rustler, Capitan Reef, Delaware and Artesia Group  
Possible Water Flows in the Castile and Artesia Group  
Abnormal pressures may be encountered below the 3<sup>rd</sup> Bone Spring Sandstone.**

1. The **20 inch** surface casing shall be set at approximately **360 feet** (in a competent bed **below the Magenta Dolomite**, which is a **Member of the Rustler**, and if salt is encountered, set casing at least **25 feet** above the salt) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **13-3/8 inch 1<sup>st</sup>** intermediate casing, which shall be set at approximately **1900 feet**, (basal anhydrite of the Castile Formation) is:

- ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Potash.**

**Special Capitan Reef requirements:**

If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:

- Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
- Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

**Formation below the 13-3/8" shoe to be tested according to Onshore Order**

**2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.**

3. The minimum required fill of cement behind the 9-5/8 inch 2<sup>nd</sup> intermediate casing which shall be set at approximately 3600 feet is:

- ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Potash.**

**Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i.**

**Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.**

4. The minimum required fill of cement behind the 7 inch production is:

**Operator has proposed DV tool at depth of 9500', but will adjust cement proportionately if moved. DV tool/ECP shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.**

a. First stage to DV tool:

- ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.  
**Additional cement maybe required, excess cement calculates to only -58%**

b. Second stage above DV tool:

- ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Potash. Additional cement maybe required, excess cement calculates to only 16%**

**Formation below the 7" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.**

**Open Hole completion from 13180' to TD of 14180'**

### **Special Requirements:**

**The operator shall supply the BLM with a copy of a mudlog over the permitted disposal interval and estimated insitu water salinity based on open-hole logs. If hydrocarbon shows occur while drilling, the operator shall notify the BLM.**

**The operator shall run and provide a CBL on the 7-inch casing from TD to surface.**

**The operator shall provide to the BLM a summary of formation depth picks based on mudlog and geophysical logs along with a copy of the mudlog and open hole logs from TD to top of wolfcamp**

5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

### **C. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. **Variance approved to use flex line from BOP to choke manifold.** Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line

fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor. If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 20" surface casing shoe shall be **10,000 (10M) psi. 10M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure (BOP Stack shall have triple rams & annular preventer).**
4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer.**
  - b. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
  - c. The results of the test shall be reported to the appropriate BLM office.
  - d. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
  - e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

## **D. WELL COMPLETION**

### **Special Requirements:**

**The operator shall supply the BLM with a copy of a mudlog over the permitted disposal interval and estimated insitu water salinity based on open-hole logs. If hydrocarbon shows occur while drilling, the operator shall notify the BLM.**

**The operator shall run and provide a CBL on the 7-inch casing from TD to surface.**

**The operator shall provide to the BLM a summary of formation depth picks based on mudlog and geophysical logs along with a copy of the mudlog and open hole logs from TD to top of wolfcamp**

1. Properly evaluate the injection zone for potential production (This well is considered a hydrocarbon producer until proven otherwise)
  - a. **Swab testing shall be done in all cases.**
  - b. **In addition to swab testing the operator shall utilize other reservoir evaluation methods (i.e. evaluation of mud logs, petrophysical analysis of open-hole logs and formation water analysis from swab testing) to confirm that hydrocarbons cannot be produced in paying quantities. This evaluation summary report shall be reviewed by the BLM prior to injection commencing.**
  - c. **A “no hydrocarbon “ subsequent sundry evaluation report shall be filed and reviewed by the BLM prior to injection of disposal fluids. Attach electric copies of the supportive logs and reports to this sundry submitted via BLM’s Well Information System.**
2. Restrict the injection fluid to the approved formation.
3. **Notify BLM as work begins. Some procedures may be witnessed. In Eddy County 575-361-2822. Note the contact, time, & date in your subsequent report.**
4. **If a step rate test will be run an NOI sundry shall be submitted to the BLM for approval. (Stabilized injection rates and pressures are required: after the daily disposal volume rates and injection pressures have leveled out for about 3 months a NOI for a SRT procedure may be approved.)**
5. Conduct a Mechanical Integrity Test of the tubing/casing annulus after a tubing, packer or casing seal is established.
6. The minimum test pressure should be 500 psig for 30 minutes or 300 psig for 60 minutes, with a minimum 200 psig differential between tubing and casing pressure (at test time) but no more than 70% of casing burst pressure as described by Onshore Order 2.III.B.1.h. (The tubing or reservoir pressure may need to be reduced). **Verify all annular casing vents are plumbed to surface and those valves open to the surface during this pressure test.** An alternate method for a BLM approved MIT

is to have the fluid filled system open to atmospheric pressure and have a loss of less than five barrels in 30 days witnessed by a BLM authorized officer.

7. Document the pressure test on a one hour full rotation calibrated (within 6 months) recorder chart registering within 25 to 85 per cent of its full range. Greater than 10% pressure leakoff will be viewed as a failed MIT. Less than 10% pressure leakoff will be evaluated site specifically and may restrict injection approval.
8. The setting depths and descriptions of inside casing injection equipment is to be included in the subsequent sundry.
9. Compliance with a NMOCD Administrative Order is required.
  - a. Approved injection pressure compliance is required.
  - b. If injection pressure exceeds the approved pressure you are required to reduce that pressure and notify the BLM within 24 hours.
  - c. When injection pressure is within 50 psig of the maximum pressure, install automation equipment that will prevent exceeding that maximum. Submit a subsequent report (Sundry Form 3160-5) describing the installed automation equipment within 30 days.
10. Stimulation injection pressures are not to exceed BLM's permitted wellhead pressure or the well's frac pressure established by a BLM approved step rate test for Class II water injection wells.
11. Unexplained significant variations of rate or pressure to be reported within 5 days of notice.
12. The casing/tubing annulus is required to be monitored for communication with injection fluid or loss of casing integrity. A "Best Management Practice" is to maintain the annulus full of packer fluid at atmospheric pressure. A BLM inspector may request verification of a full annular fluid level at any time.
13. File intermediate **subsequent sundry** Form 3160-5 within 30 days of any interrupted workover procedures and a complete (dated daily) workover subsequent sundry.
14. Submit the BLM Form 3160-4 **Recompletion Report** within 30 days of the date all BLM approved procedures are complete. **Include formation tops on every well Recompletion Report.** The operator shall provide to the BLM their formation depth picks based on mud log and geophysical logs along with a copies of the mud log and open-hole logs.

15. The subsequent report is to include all stimulation injection pressures. Report maximum/minimum injection rate (BPM) and max/min stimulation injection pressures (psig).
16. Submit a (BLM Form 3160-5 subsequent report (daily reports) via BLM's Well Information System; <https://www.blm.gov/wispermits/wis/SP> describing (dated daily) all wellbore activity including the Mechanical Integrity Test chart document:
17. **If off-lease water will be disposed in this well, the operator shall provide proof of right-of-way approval.**
18. Disposal fluid from another lease, communitization, or unit agreement require BLM Reality surface right-of-way agreement **approvals** and if applicable, authorization from the surface owner prior to injection.
19. Disposal of fluid from another operator requires that the well be designated as a commercial well and involves BLM Reality or other surface owner right-of-way agreement **approval** prior to injection.

**If off-lease water will be disposed in this well, the operator shall provide proof of right-of-way approval.**

#### **E. WASTE MATERIAL AND FLUIDS**

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

**CLN 070716**



## **VIII. PRODUCTION (POST DRILLING)**

### **A. WELL STRUCTURES & FACILITIES**

#### **Placement of Production Facilities**

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

#### **Exclosure Netting (Open-top Tanks)**

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

#### **Chemical and Fuel Secondary Containment and Exclosure Screening**

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

#### **Open-Vent Exhaust Stack Exclosures**

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

#### **Containment Structures**

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the

largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

#### **Painting Requirement**

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

August 6, 2015

BLM Serial Number: NM-134963

Co. Reference: **Outer Banks Salt Water Disposal Well #1  
And Off-load Facility**

#### **BURIED PIPELINE STIPULATIONS FOR THE CARLSBAD FIELD OFFICE, BLM**

A copy of the grant and attachments, including stipulations and map, will be on location during construction. BLM personnel may request to view a copy of your permit during construction to ensure compliance with all stipulations.

The holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer, BLM.

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, *et. seq.*) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, *etc.*) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, *et. seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et. seq.*) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way

holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault.

Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting therefrom, the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

5. The holder shall conduct all activities associated with the construction, operation, and termination of the right-of-way within the authorized limits of the right-of-way.

6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.

7. Blading of all vegetation **will not** be allowed. Blading is defined as the complete removal of brush and ground vegetation. Clearing of brush species will be allowed. Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface. In areas where blading and/or clearing is allowed, the maximum width of these operations will not exceed 30 feet.

8. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair impacted improvements to at least their former state. The holder shall contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence will be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

9. Vegetation, soil, and rocks left as a result of construction, drilling, or maintenance activity will be randomly scattered over the project area and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. A berm will be left over the ditch line to allow for settling back to grade.

10. In those areas where erosion control structures are required to stabilize soil

conditions, the holder shall install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound management practices. Any earth work will require prior approval by the Authorized Office

11. The holder shall reseed all surface disturbed by construction activities. If reseeding is required, it will be done according the attached seeding requirements (Exhibit B), using seed mixture (1\*2\*3\*4) for **Loamy** sites.

12. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is **Shale Green**, **Munsell Soil Color Chart Number 5Y 4/2**.

13. The holder shall post signs designating the BLM serial number assigned to this right-of-way grant at the following locations: the points of origin and completion, or entry to and exit from public lands, of the right-of-way and at all major road crossings. These signs will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the term of the right-of-way.

14. The holder shall not use the right-of-way as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder shall take whatever steps are necessary to ensure that the right-of-way is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

16. The period of time that any trenches or other excavations are kept open will be held to the minimum compatible with construction requirements. The holder shall not leave more than one-half mile of trench open overnight or otherwise unattended. Open trenches will have ramps, bridges, or earthen plugs, at least six feet wide, every one-quarter mile to pass livestock and wildlife.

17. The area will be kept free of the following plant species: Malta starthistle, African rue, Scotch thistle, and Salt cedar.

**Special Stipulations:**

Seeding Stipulations have been attached.

Welding Stipulations have been attached.

## **IX. INTERIM RECLAMATION**

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

## **X. FINAL ABANDONMENT & RECLAMATION**

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by

drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

**Seed Mixture 1 for Loamy Sites**

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed shall be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed shall be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre shall be doubled. The seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains lovegrass ( <i>Eragrostis intermedia</i> )	0.5
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	1.0
Sideoats grama ( <i>Bouteloua curtipendula</i> )	5.0
Plains bristlegrass ( <i>Setaria macrostachya</i> )	2.0

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

## NMOCD CONDITION OF APPROVAL

The *New!* Gas Capture Plan (GCP) notice is posted on the NMOCD website under Announcements. The Plan became effective May 1, 2016. A copy of the GCP form is included with the NOTICE and is also in our FORMS section under Unnumbered Forms. Please review filing dates for all applicable activities currently approved or pending and submit accordingly. Failure to file a GCP may jeopardize the operator's ability to obtain C-129 approval to flare gas after the initial 60-day completion period.