

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTNM OIL & GAS RESERVATION
ARTESIA DISTRICTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018SEPT 11 2017
RECEIVED
SUNDRY NOTICES AND REPORTS ON WELLS

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

5. Lease Serial No.
NMNM20965

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
RDX FEDERAL COM 17 37H9. API Well No.
30-015-4354410. Field and Pool or Exploratory Area
PURPLE SAGE; WOLFCAMP (GAS)11. County or Parish, State
EDDY COUNTY, NM

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

RKI EXPLORATION & PROD LL

Contact: CRYSTAL FULTON

E-Mail: crystal.fulton@wpenergy.com

3a. Address

3500 ONE WILLIAMS CENTER MD35
TULSA, OK 74172

3b. Phone No. (include area code)

Ph: 539-573-0218

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 17 T26S R30E 200FNL 760FWL

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

TYPE OF SUBMISSION

TYPE OF ACTION

☒ Notice of Intent☐ Subsequent Report☐ Final Abandonment Notice☐ Acidize☐ Alter Casing☐ Casing Repair☐ Change Plans☐ Convert to Injection☐ Deepen☐ Hydraulic Fracturing☐ New Construction☐ Plug and Abandon☐ Plug Back☐ Production (Start/Resume)☐ Reclamation☐ Recomplete☐ Temporarily Abandon☐ Water Disposal☐ Water Shut-Off☐ Well Integrity☒ Other

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

RKI EXPLORATION AND PRODUCTION, LLC requests to change the surface hole location and bottom hole location for the following well.

The pad is already constructed. There will be no new surface disturbance.

Please see attached updated plat, drilling plan, directional plan, and GEO Prog.

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Eng Okay 5/28/17 CRW

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #379887 verified by the BLM Well Information System
For RKI EXPLORATION & PROD LL, sent to the Carlsbad
Committed to AFMSS for processing by DEBORAH MCKINNEY on 07/20/2017 ()

Name (Printed/Typed) CRYSTAL FULTON

Title PERMITTING TECH II

Signature (Electronic Submission)

Date 06/27/2017

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Cody H. Luyter

Title

FIELD MANAGER

Date

08/30/17

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

Office

CARLSBAD FIELD OFFICE

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

(Instructions on page 2)

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

RUF 9-13-17

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

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

District III
1000 Rio Brazos Blvd. 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

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-102

SEP 11 2017

Revised August 1, 2011

Submit one copy to appropriate

District Office

RECEIVED

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-43544	² Pool Code 98220	³ Pool Name PURPLE SAGE WOLFCAMP GAS POOL
⁴ Property Code	⁵ Property Name RDX FEDERAL COM 17	⁶ Well Number 37H
⁷ OGRID No. 246289	⁸ Operator Name RKI EXPLORATION & PRODUCTION, LLC	⁹ Elevation 3071'

¹⁰ Surface Location

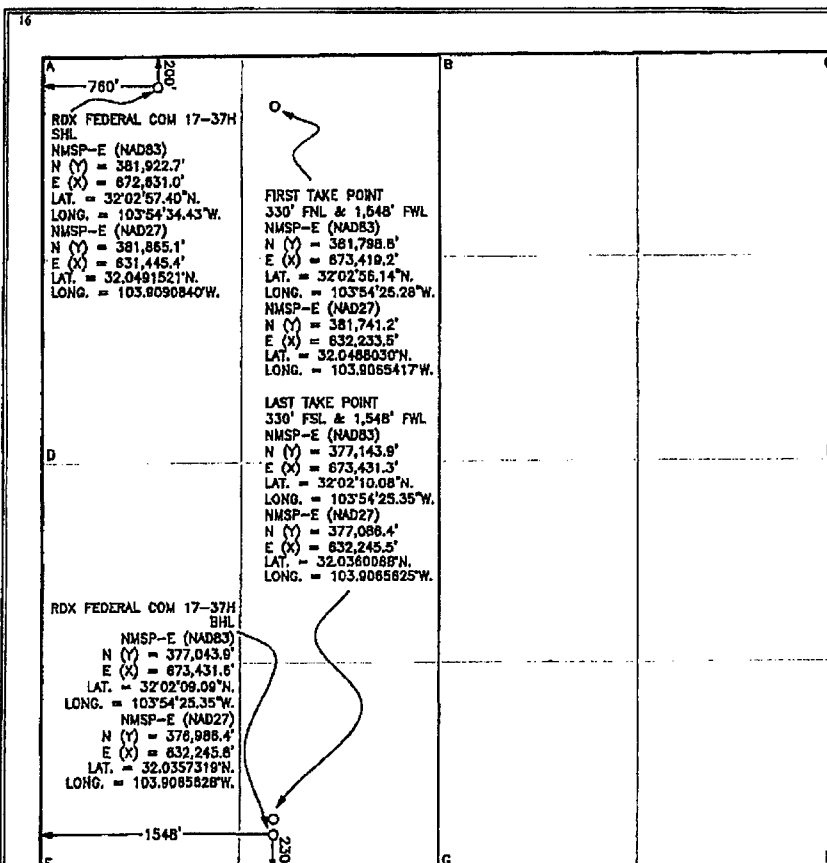
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	17	26 S	30 E		200	NORTH	760	WEST	EDDY

¹¹ 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/West line	County
M	17	26 S	30 E		230	SOUTH	1548	WEST	EDDY

¹² Dedicated Acres 320.0	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ 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.



17 OPERATOR CERTIFICATION

I hereby certify that the information contained hereth 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.

Signature: Justin Bernore Date: 03/24/2017
Printed Name: Justin Bernore
E-mail Address: justin.bernore@wpxenergy.com

18 SURVEYOR CERTIFICATION

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.

03-24-2017

Date of Survey

Signature and Seal of Professional Surveyor:

MARK DILLON HARP 23786
Certificate Number



AI 2017020221

RKI Exploration & Production, LLC.



Drilling Plan

Well RDX Federal Com 17-37H
 Location Surface: 200 FNL 760 FWL T26S R30E S17
 Bottom Hole: 230 FSL 1548 FWL T26S R30E S17
 County/State Eddy, NM

The elevation of the unprepared ground is 3,071 feet above sea level.

The geologic name of the surface formation is Quaternary - Alluvium

A rotary rig will be utilized to drill the well to 15631' MD, then will be cased and cemented. This equipment will then be rigged down and the well will be completed with a workover rig.

Proposed depth is 15,631 feet MD.

1) Estimated Tops:

Formation Name	MD	TVD	Bearing	BHP (psi)	MASP (psi)
Quaternary - Alluvium	GL	GL	Water		
Rustler Magenta Member (Base)	787	787	Water		
Bell Canyon Sand (Base Salt)	3,414	3,404	Oil/Gas		
Cherry Canyon Sand	4,548	4,528	Oil/Gas		
Brushy Canyon Sand	4,701	4,680	Oil/Gas		
1st Bone Spring Sand	8,206	8,155	Oil/Gas		
2nd Bone Spring Sand	9,021	8,970	Oil/Gas		
3rd Bone Spring Sand	10,119	10,068	Oil/Gas		
KOP	10,327	10,276			
Wolfcamp	10,515	10,459	Oil/Gas		
Landing Point (Wolfcamp)	11,077	10,753	Target Frm		
TD	15,631	10,753	Oil/Gas	6,989	4,624

2) Notable Formations:

Any usable fresh water zones encountered will be adequately protected and reported. All usable water zones, potential hydrocarbon zones, and valuable mineral zones will be isolated.

Useable water will be protected by surface casing set and cemented to surface.

3) Pressure Control Equipment:

The blowout preventer equipment (BOPE) will consist of 3 rams (10,000 psi WP) with 2 pipe rams (one of which may be variable), 1 blind ram and 1 annular preventer (5,000 psi WP) will be installed. The BOPE will be used below surface casing to TD. See attachments for BOP and choke manifold diagrams. A rotating head will be installed as needed. Units will be hydraulically operated.

An accumulator that meets the requirements of Onshore Order 2 for the pressure rating of the BOP stack will be present.

BOPE will be inspected and operated as recommended in Onshore Order 2. A third party company will test the BOPE. After surface casing is set and the BOPE is nipped up, pressure tests will be conducted to 250 psi low and 5000 psi high (50% of WP) with the annular tested to 250 psi low and 2500 psi high (50% of WP).

A 20" x 13-3/8" x 9-5/8" x 7" 10M multi-bowl wellhead w/ 9-5/8" and 7" mandrel hangers will be install after setting surface casing and utilized until total depth is reached. The 9-5/8" and 7" casings will be set using a mandrel in the casing head and the stack will not be retested at these casing points.

The following BOPE will be installed, tested and operational:

- Drilling spool or blowout preventer with two (2) side outlets;
 - Choke line side shall be 3" minimum diameter;
 - Two (2) adjustable chokes with one (1) remotely controlled from the rig floor and pressure gauge.
 - Kill side shall be at least 2" diameter;
 - Two (2) manual valves and one (1) check valve.

Auxiliary equipment is as follows:

- Upper kelly cock valve with a handle available;
- Lower kelly cock valve with a handle available;
- A float valve will be used in the drill string, either in a float sub or in the mud motor;
- Safety valves and subs with a full opening sized to fit all drill strings and collars will be available on the rig floor in the open position.

RKI Exploration & Production, LLC. requests a variance to drill this well using a co-flex line between the BOP and the choke manifold. Certification for proposed co-flex hose is attached. The hose is required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used.

4) Casing Program:

Section	Hole Size	Top (MD)	Bottom (MD)	Bottom (TVD)	Casing OD	Weight (ppf)	Grade	Threads
Surf	17-1/2"	0	787	787	13-3/8"	54.5	J-55	ST&C
Int_1	12-1/4"	0	3,414	3,404	9-5/8"	40.0	J-55	LT&C
Int_2	8-3/4"	0	11,077	10,753	7"	29.0	HCP-110	BT&C
Prod	6-1/8"	10,327	15,631	10,753	4-1/2"	13.5	HCP-110	CDC-HTC

Safety Factors	
Collapse	1.125
Burst	1.000
Tension	1.600

Design Factors			
Section	Collapse	Burst	Tension
Surf	3.26	15.77	11.98
Int_1	1.72	5.27	3.81
Int_2	1.94	4.74	2.97
Prod	2.26	5.25	2.10

Centralizers will be run as follows:

- One (1) centralizer on each of the bottom three jts of casing beginning with the shoe jt;
- One (1) centralizer every third jt from above bottom three jts to planned top of cement (TOC).

5) Cement Program:

Section	Hole Size	Casing OD	Cap _{Ann} (cuft/ft)					
Surf	17.50	13.375	0.6946					
Type	Cmt Btm	Cmt Top	Cubic Feet	Yield	Excess	Sacks	Weight	Blend & Additives
Lead	530	0	368	1.74	50%	317	13.5	Class C + 4% Gel + 2% CaCl + 0.4 pps Defoamer + 0.125 pps Celloflake
Tail	787	530	134	1.34	50%	200	14.8	Class C + 2% Calcium

Section	Hole Size	Casing OD	Cap _{Ann} (cuft/ft)	Prev Csg ID	Cap _{Csg-Csg} (cuft/ft)			
Int_1	12.25	9.625	0.3132	12.615	0.3627			
Type	Cmt Btm	Cmt Top	Cubic Feet	Yield	Excess	Sacks	Weight	Blend & Additives
Lead	787	0	285	1.92	0%	531	12.9	Class C/Poz 35/65 + 5% Salt + 6% Gel + 0.5% Retarder + 3 pps LCM + 0.4 pps Defoamer + 0.125 pps Celloflake
	2740	787	612		20%			
Tail	3414	2740	211	1.32	20%	200	14.8	Class C

Section	Hole Size	Casing OD	Cap _{Ann} (cuft/ft)	Prev Csg ID	Cap _{Csg-Csg} (cuft/ft)			
Int_2	8.75	7.00	0.1503	8.835	0.1585			
Type	Cmt Btm	Cmt Top	Cubic Feet	Yield	Excess	Sacks	Weight	Blend & Additives
Lead	3414	2914	79	2.67	0%	497	11.2	TXI Lightweight + 10% Gel + 8% Plex Crete + 0.9% Retarder + 0.7 pps FL + 3 pps LCM + 0.4 pps Defoamer + 0.125 pps CelloFlake
	10327	3414	1039		20%			
Tail	11077	10327	113	1.18	20%	115	15.6	Class H + 0.3% Retarder

Section	Hole Size	Casing OD	Cap _{Ann} (cuft/ft)	Prev Csg ID	Cap _{Csg-Csg} (cuft/ft)			
Prod	6.125	4.50	0.0942	6.184	0.0981			
Type	Cmt Btm	Cmt Top	Cubic Feet	Yield	Excess	Sacks	Weight	Blend & Additives
Tail	11077	10327	74	1.89	0%	311	13.0	Acid Soluble TXI + 1.3% Salt + 30% CaCl + 5% Plexaid + 0.7% FL + 0.3% Retarder + 0.1% Antisettling + 0.4 pps Defoamer
	15631	11077	429		20%			

6) Drilling Fluids Program:

An electronic mud monitoring system satisfying the requirements of Onshore Order 1 will be used. All necessary mud products for weight addition and fluid loss control will be on location at all times. Mud program is subject to change due to hole conditions.

Section	Hole Size	TMD	Mud Wt.	Vis	PV	YP	Fluid Loss	Type
Surf	17-1/2"	787	8.5 to 8.9	32 to 36	1 - 6	1 - 6	NC	Fresh Wtr
Int_1	12-1/4"	3,414	9.8 to 10.0	28 to 30	1 - 3	1 - 3	NC	Brine
Int_2	8-3/4"	11,077	8.9 to 9.4	28 to 36	1 - 3	1 - 3	NC	Cut Brine
Prod	6-1/8"	15,631	10.5 to 12.5	50 to 55	20-22	8 - 10	8 - 10	OBM

Mud checks will be performed every 24 hours.

The following mud system monitoring equipment will be in place during drilling:

- Visual pit markers
- Pit volume totalizer (PVT)
- Stroke counter
- Gas detection
- Mud-gas separator (gas buster)
- Flow sensor

A closed-loop system will be in place during all phases of drilling. Cuttings disposal will be at an off-site disposal facility.

7) Formation Evaluation Program:

No core or drill stem test is planned.

A 2-person mud-logging program will be used from Int_1 9-5/8" casing point to TD.

No electronic logs are planned.

8) Abnormal Conditions:

No abnormal pressure or temperature is expected.

Maximum expected bottom hole pressure is 6989 psi at 10753' TVD. Expected bottom hole temperature is <200°F.

In accordance with Onshore Order 6, RKI Exploration & Production, LLC does not anticipate that there will be enough H2S to meet the BLM's minimum requirements for the submission of an "H2S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. However, since RKI Exploration & Production, LLC has an H2S safety package on all wells, an "H2S Drilling Operations Plan" is attached.

Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

All personnel will be familiar with all aspects of safe operation of equipment being used.

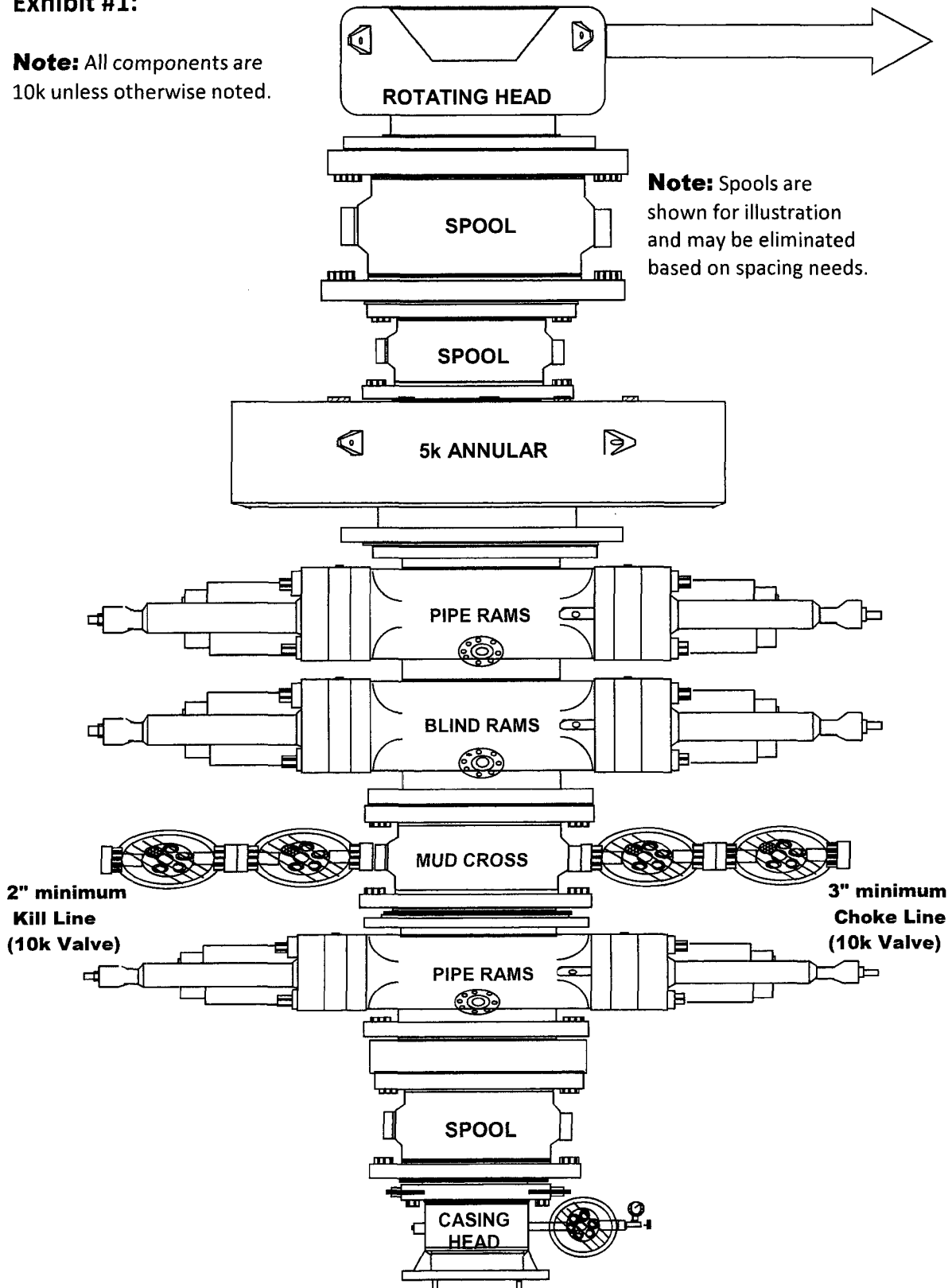
9) Other Information

The anticipated spud date is upon approval. Expected duration is 30 days to drill the well.

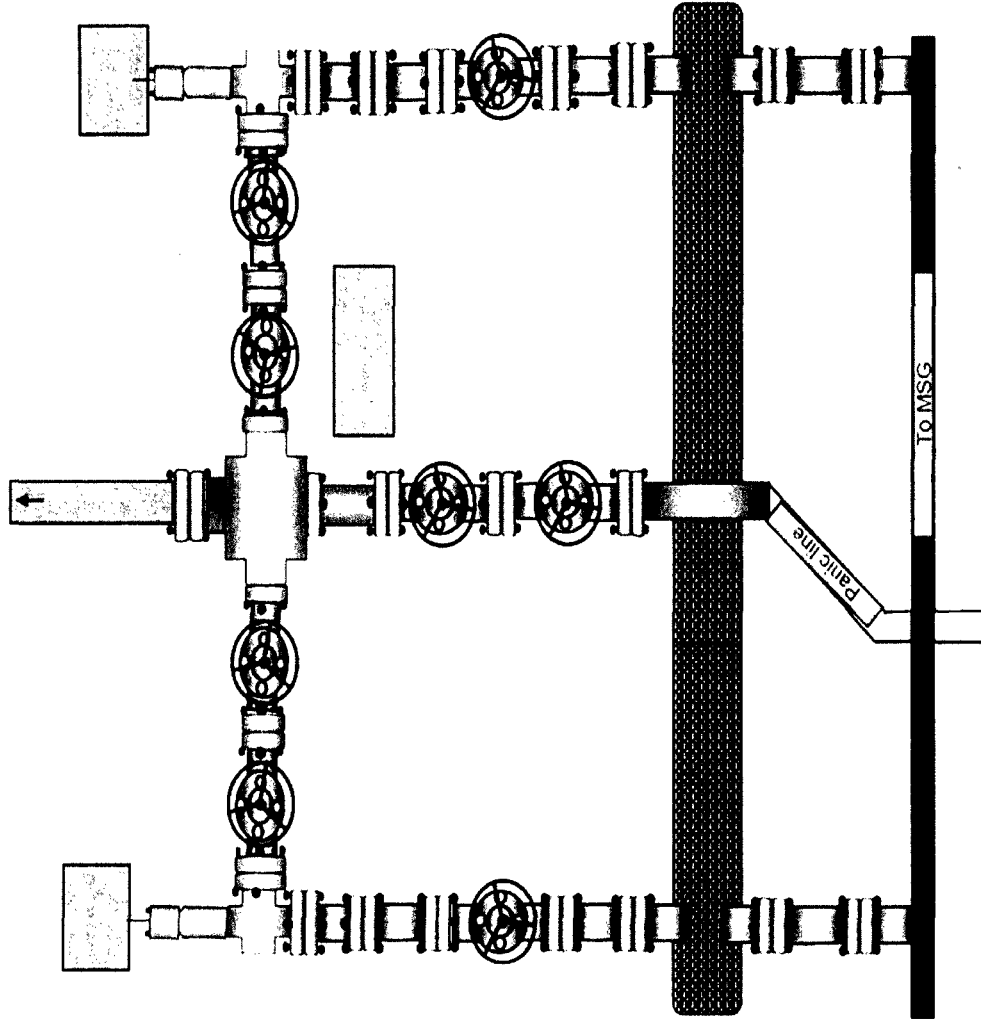
13-5/8" 5M BOP Schematic

Exhibit #1:

Note: All components are 10k unless otherwise noted.

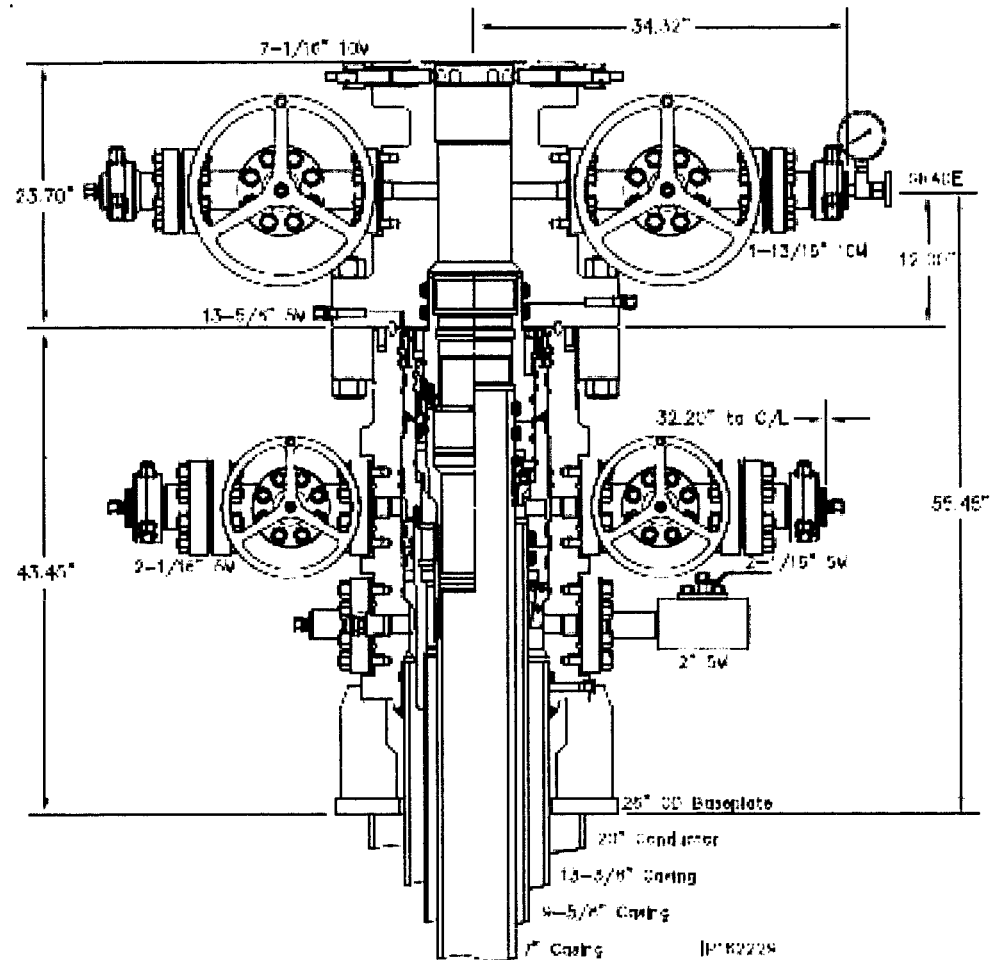


5M Choke Manifold



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System Drawing



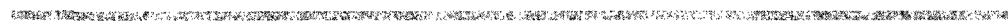
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WPX Energy
20" x 13-3/8" x 9-5/8" x 7" 10M MBU-3T Wellhead With 7"
Mandrel Hanger & CTH-DBLHPS Tubing Head

IP 0487
Page 1

Bill of Materials



Cactus
Wellhead

[illegible]

MEIST HOUSING ASSEMBLY		
Part No.	Part Name	
212-1	sliding Hanger, LW, Moulded Steel, 1/2" x 1/2" x 1/2" x 1/2" x 1/2" with 1/2" x 1/2" x 1/2" x 1/2" x 1/2" sliding box for mounting the hanging rod. Part # 112-100	
212-2	sliding Hanger, LW, Moulded Steel, 1/2" x 1/2" x 1/2" x 1/2" x 1/2" with 1/2" x 1/2" x 1/2" x 1/2" x 1/2" sliding box for mounting the hanging rod. Part # 112-100	
212-3	sliding Hanger, LW, Moulded Steel, 1/2" x 1/2" x 1/2" x 1/2" x 1/2" with 1/2" x 1/2" x 1/2" x 1/2" x 1/2" sliding box for mounting the hanging rod. Part # 112-100	
212-4	sliding Hanger, LW, Moulded Steel, 1/2" x 1/2" x 1/2" x 1/2" x 1/2" with 1/2" x 1/2" x 1/2" x 1/2" x 1/2" sliding box for mounting the hanging rod. Part # 112-100	

[illegible]

INFORMATION CONTAINED HEREIN IS THE PROPERTY OF CACTUS WELL-HEAD, LLC. REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PERMISSIBLE ONLY AS PROVIDED BY CONTRACTOR AS EXPRESSLY AUTHORIZED BY CACTUS WELL-HEAD, LLC.

[illegible]

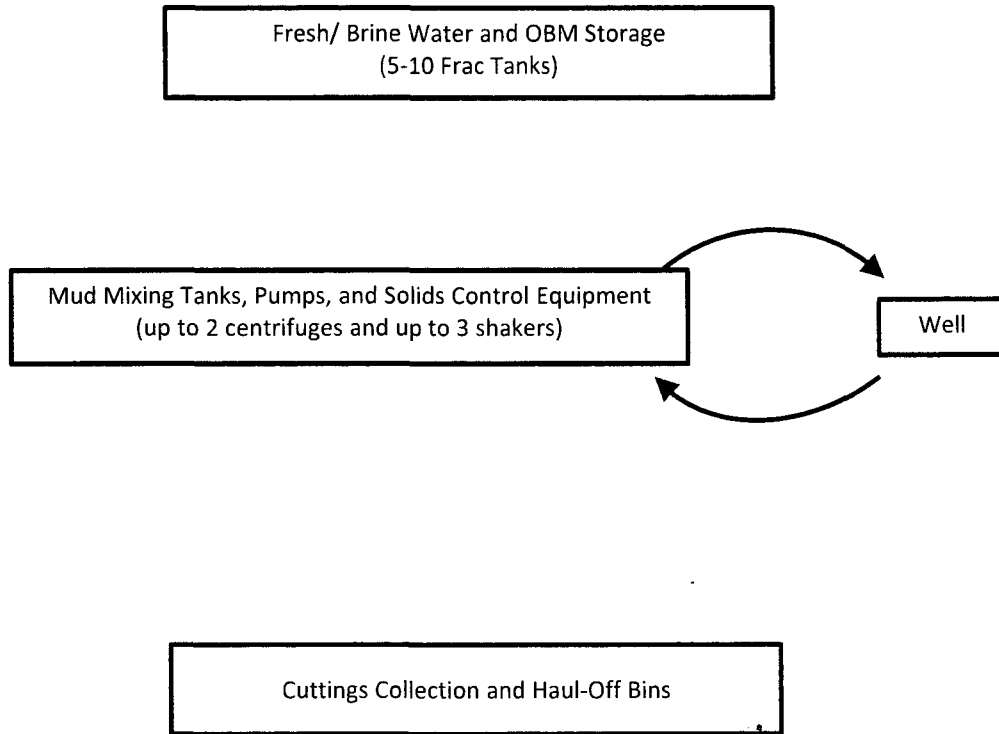
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Closed Loop System

RKI Exploration & Production, LLC.

RDX Federal Com 17-37H

Eddy, NM



Operating and Maintenance Plan:

During drilling operations, third party services companies will utilize solids control equipment to remove cuttings from drilling fluids and collect it in haul-off bins. Equipment will be closely monitored at all times while drilling by the derrick man and the service company employees.

Closure Plan:

During the drilling operations, third party service companies will haul off drill solids and fluids to an approved disposal facility. At the end of the well, all closed loop equipment will be removed from the location.



GATES E & S NORTH AMERICA, INC
DU-TEX
134 44TH STREET
CORPUS CHRISTI, TEXAS 78405

PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL:
WEB: www.gates.com

10K CHOKE & KILL ASSEMBLY PRESSURE TEST CERTIFICATE

Customer :	ORION DRILLING COMPANY	Test Date:	9/2/2014
Customer Ref.:	PENDING	Hose Serial No.:	D-090214-4
Invoice No.:	203508	Created By:	JUSTIN CROPPER
Product Description:	10K3.025.0CK4.1/1610KFLGE/E		
End Fitting 1:	4 1/16 10K FLG	End Fitting 2:	4 1/16 10K FLG
Gates Part No.:	4773-4291	Assembly Code:	L33078040913D-090214-4
Working Pressure:	10,000 PSI	Test Pressure:	15,000 PSI

Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 15,000 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

Quality Manager	QUALITY	Technical Supervisor	PRODUCTION
Date:	9/2/2014	Date:	9/2/2014
Signature:		Signature:	



Gates E&S North America
134 - 44th St.
CORPUS CHRISTI, TEXAS 78405
PHONE : (361) 887-9807
FAX: (361) 887-0812

CERTIFICATE OF CONFORMANCE

This is to verify that all Parts and/or Materials included in this shipment have been manufactured and/or processed in Conformance with applicable drawings and specifications, and that Records of Required Tests are on file and subject to examination. The following items were assembled at Gates E & S, Inc. (formerly Dutex, Inc.), facilities in Corpus Christi, TX, USA. This hose assembly was designed and manufactured to meet all the requirements of API Spec 7K.

CUSTOMER: ORION DRILLING COMPANY
CUSTOMERS P.O.#: PENDING
PART DESCRIPTION: 10K3.025.0CK4.1/1610KFLGE/E
SALES ORDER #: 203508
QUANTITY: 1
SERIAL #: D-090214-4

SIGNATURE: *[Signature]*
TITLE: QUALITY: *[Signature]*
DATE: 9/2/2014

ROSE I.D. 8 1/4" LENGTH 20' FT END 17 1/2" END 2 4 1/2" PSI
GRADE 10 K WORKING PRESSURE 19,000 PSI
TEST DATE 9-2-14 ASSEMBLY DATE 9-2-14
NAME [Signature] SERIAL # 43072040 I.D. 080-14-4
CR # 0554



4 12 13.50 lb (0.29) P110 HC

USS-CDC HQ¹⁰

	PIPE	CONNECTION
MECHANICAL PROPERTIES		
Minimum Yield Strength	110,000	psi
Maximum Yield Strength	130,000	psi
Minimum Tensile Strength	125,000	psi
DIMENSIONS		
Outside Diameter	4.500	in
Wall Thickness	0.290	in
Inside Diameter	3.920	in
End API	3.795	in
Nominal Linear Weight, T & C	13.50	lb/ft
End End Weight	13.05	lb/ft
SECTION AREA		
Gross Sectional Area - Critical Area	3.836	sq. in.
Net Sectional Area	3.000	sq. in.
PERFORMANCE		
Minimum End Load Pressure	11,810	psi
External Pressure Load Resistance	9,450	psi
Minimum Internal Yield Pressure	12,420	psi
Minimum Pipe Body Yield Strength	125,000	psi
Joint Strength	10,000	lb
Compression Rating	256,000	lb
Reference Length	21.877	ft
Maximum Allowable Bore Pressure	77.6	psi @ 100 ft
MAKE-UP DATA		
Make-Up Load	4,400	in
Minimum Make-Up Torque	7,000	ft-lbs
Maximum Make-Up Torque	13,300	ft-lbs
Connection Yield Torque	11,430	ft-lbs

424

- [illegible]

NM OIL CONSERVATION

ARTESIA DISTRICT

State of New Mexico

SEP 11 2017

Form C-102

Energy, Minerals & Natural Resources Department

Revised August 1, 2011

OIL CONSERVATION DIVISION

RECEIVED

Submit one copy to appropriate

District Office

1220 South St. Francis Dr.

Santa Fe, NM 87505

☐ AMENDED REPORT

District I

1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II

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

District III

1000 Rio Brazos Road, 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

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-43544	² Pool Code 98220	³ Pool Name PURPLE SAGE WOLFCAMP GAS POOL
⁴ Property Code	⁵ Property Name RDX FEDERAL COM 17	⁶ Well Number 37H
⁷ OGRID No. 246289	⁸ Operator Name RKI EXPLORATION & PRODUCTION, LLC	⁹ Elevation 3071'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	17	26 S	30 E		200	NORTH	760	WEST	EDDY

¹¹ 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/West line	County
M	17	26 S	30 E		230	SOUTH	1548	WEST	EDDY

¹² Dedicated Acres 320.0	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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.

¹⁶

¹⁷ OPERATOR CERTIFICATION

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.

Signature: Justin Bernore Date: 03/24/2017

Printed Name: Justin Bernore

E-mail Address: justin.bernore@wpxenergy.com

¹⁸ SURVEYOR CERTIFICATION

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.

Date of Survey: 03-24-2017

Signature and Seal of Professional Surveyor: Mark Dillon Harp

MARK DILLON HARP
NEW MEXICO
23786
PROFESSIONAL SURVEYOR

MARK DILLON HARP 23786
Certificate Number AI 2017020221

NM OIL CONSERVATION
ARTESIA DISTRICT

SEP 11 2017

RECEIVED

WPX Energy

Eddy County, New Mexico NAD 83

RDX Federal Com 17 Pad

RDX Federal Com 17-37H

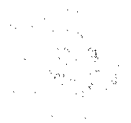
API: 30-015-43544

Wellbore #1

Plan: Plan #1

Standard Planning Report

05 June, 2017



Scientific Drilling

www.scientificdrilling.com

Scientific Drilling Int.

Planning Report

Database: Midland District
Company: WPX Energy
Project: Eddy County, New Mexico NAD 83
Site: RDX Federal Com 17 Pad
Well: RDX Federal Com 17-37H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well RDX Federal Com 17-37H
TVD Reference: KB @ 3094.00usft (Orion Aires)
MD Reference: KB @ 3094.00usft (Orion Aires)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Eddy County, New Mexico NAD 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	RDX Federal Com 17 Pad		
Site Position:		Northing:	381,922.50 usft
From:	Map	Easting:	672,606.20 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 2' 57.397 N
		Longitude:	103° 54' 34.720 W
		Grid Convergence:	0.22 °

Well	RDX Federal Com 17-37H		
Well Position	+N/-S	0.20 usft	Northing: 381,922.70 usft
	+E/-W	24.80 usft	Easting: 672,631.00 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 2' 57.398 N
		Longitude:	103° 54' 34.432 W
		Ground Level:	3,071.00 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	HDGM	6/2/2017	6.93
		Dip Angle (°)	59.78
		Field Strength (nT)	48,021

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
		Direction (bearing)	179.87

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,373.90	7.48	79.06	2,372.84	4.62	23.92	2.00	2.00	0.00	79.06	
8,177.58	7.48	79.06	8,127.16	147.93	765.53	0.00	0.00	0.00	0.00	
8,551.48	0.00	0.00	8,500.00	152.55	789.45	2.00	-2.00	0.00	180.00	
10,327.02	0.00	0.00	10,275.54	152.55	789.45	0.00	0.00	0.00	0.00	
11,077.02	90.00	179.87	10,753.01	-324.91	790.51	12.00	12.00	23.98	179.87	
15,630.92	90.00	179.87	10,753.00	-4,878.80	800.60	0.00	0.00	0.00	0.00	RDX37H BHL

Scientific Drilling Int.

Planning Report

Database: Midland District
Company: WPX Energy
Project: Eddy County, New Mexico NAD 83
Site: RDX Federal Com 17 Pad
Well: RDX Federal Com 17-37H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well RDX Federal Com 17-37H
TVD Reference: KB @ 3094.00usft (Orion Aires)
MD Reference: KB @ 3094.00usft (Orion Aires)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,700.00	7.48	79.06	4,679.16	62.06	321.16	-61.33	0.00	0.00	0.00
4,700.85	7.48	79.06	4,680.00	62.08	321.26	-61.35	0.00	0.00	0.00
Brushy Canyon									
4,800.00	7.48	79.06	4,778.31	64.53	333.93	-63.77	0.00	0.00	0.00
4,900.00	7.48	79.06	4,877.45	67.00	346.71	-66.21	0.00	0.00	0.00
5,000.00	7.48	79.06	4,976.60	69.47	359.49	-68.65	0.00	0.00	0.00
5,100.00	7.48	79.06	5,075.75	71.94	372.27	-71.09	0.00	0.00	0.00
5,200.00	7.48	79.06	5,174.90	74.40	385.05	-73.53	0.00	0.00	0.00
5,300.00	7.48	79.06	5,274.05	76.87	397.82	-75.97	0.00	0.00	0.00
5,400.00	7.48	79.06	5,373.20	79.34	410.60	-78.41	0.00	0.00	0.00
5,500.00	7.48	79.06	5,472.35	81.81	423.38	-80.85	0.00	0.00	0.00
5,600.00	7.48	79.06	5,571.50	84.28	436.16	-83.29	0.00	0.00	0.00
5,700.00	7.48	79.06	5,670.65	86.75	448.94	-85.73	0.00	0.00	0.00
5,800.00	7.48	79.06	5,769.80	89.22	461.72	-88.17	0.00	0.00	0.00
5,900.00	7.48	79.06	5,868.95	91.69	474.49	-90.61	0.00	0.00	0.00
6,000.00	7.48	79.06	5,968.10	94.16	487.27	-93.05	0.00	0.00	0.00
6,100.00	7.48	79.06	6,067.25	96.63	500.05	-95.49	0.00	0.00	0.00
6,200.00	7.48	79.06	6,166.40	99.10	512.83	-97.93	0.00	0.00	0.00
6,300.00	7.48	79.06	6,265.55	101.57	525.61	-100.37	0.00	0.00	0.00
6,400.00	7.48	79.06	6,364.70	104.04	538.38	-102.81	0.00	0.00	0.00
6,500.00	7.48	79.06	6,463.85	106.50	551.16	-105.25	0.00	0.00	0.00
6,600.00	7.48	79.06	6,563.00	108.97	563.94	-107.69	0.00	0.00	0.00
6,700.00	7.48	79.06	6,662.15	111.44	576.72	-110.13	0.00	0.00	0.00
6,800.00	7.48	79.06	6,761.30	113.91	589.50	-112.57	0.00	0.00	0.00
6,900.00	7.48	79.06	6,860.44	116.38	602.28	-115.01	0.00	0.00	0.00
7,000.00	7.48	79.06	6,959.59	118.85	615.05	-117.45	0.00	0.00	0.00
7,100.00	7.48	79.06	7,058.74	121.32	627.83	-119.89	0.00	0.00	0.00
7,200.00	7.48	79.06	7,157.89	123.79	640.61	-122.33	0.00	0.00	0.00
7,291.89	7.48	79.06	7,249.00	126.06	652.35	-124.58	0.00	0.00	0.00
Bone Spring									
7,300.00	7.48	79.06	7,257.04	126.26	653.39	-124.78	0.00	0.00	0.00
7,400.00	7.48	79.06	7,356.19	128.73	666.17	-127.22	0.00	0.00	0.00
7,429.06	7.48	79.06	7,385.00	129.44	669.88	-127.92	0.00	0.00	0.00
Avalon									
7,500.00	7.48	79.06	7,455.34	131.20	678.94	-129.66	0.00	0.00	0.00
7,600.00	7.48	79.06	7,554.49	133.67	691.72	-132.10	0.00	0.00	0.00
7,700.00	7.48	79.06	7,653.64	136.13	704.50	-134.54	0.00	0.00	0.00
7,800.00	7.48	79.06	7,752.79	138.60	717.28	-136.98	0.00	0.00	0.00
7,900.00	7.48	79.06	7,851.94	141.07	730.06	-139.42	0.00	0.00	0.00
8,000.00	7.48	79.06	7,951.09	143.54	742.84	-141.86	0.00	0.00	0.00
8,100.00	7.48	79.06	8,050.24	146.01	755.61	-144.30	0.00	0.00	0.00
8,177.58	7.48	79.06	8,127.16	147.93	765.53	-146.19	0.00	0.00	0.00
Start Drop -2.00									
8,200.00	7.03	79.06	8,149.40	148.46	768.31	-146.72	2.00	-2.00	0.00
8,205.64	6.92	79.06	8,155.00	148.59	768.98	-146.85	2.00	-2.00	0.00
1st Bone Spring Sand									
8,300.00	5.03	79.06	8,248.84	150.46	778.62	-148.69	2.00	-2.00	0.00
8,400.00	3.03	79.06	8,348.59	151.79	785.52	-150.01	2.00	-2.00	0.00
8,500.00	1.03	79.06	8,448.52	152.46	789.00	-150.67	2.00	-2.00	0.00
8,551.48	0.00	0.00	8,500.00	152.55	789.45	-150.76	2.00	-2.00	0.00
Start 1775.54 hold at 8551.48 MD									
8,600.00	0.00	0.00	8,548.52	152.55	789.45	-150.76	0.00	0.00	0.00
8,605.48	0.00	0.00	8,554.00	152.55	789.45	-150.76	0.00	0.00	0.00

Scientific Drilling Int.

Planning Report

Database: Midland District
Company: WPX Energy
Project: Eddy County, New Mexico NAD 83
Site: RDX Federal Com 17 Pad
Well: RDX Federal Com 17-37H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well RDX Federal Com 17-37H
TVD Reference: KB @ 3094.00usft (Orion Aires)
MD Reference: KB @ 3094.00usft (Orion Aires)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,825.00	59.76	179.87	10,688.02	-84.43	789.98	86.22	12.00	12.00	0.00
10,850.00	62.76	179.87	10,700.04	-106.35	790.02	108.14	12.00	12.00	0.00
10,875.00	65.76	179.87	10,710.90	-128.87	790.07	130.66	12.00	12.00	0.00
10,900.00	68.76	179.87	10,720.56	-151.92	790.12	153.71	12.00	12.00	0.00
10,904.01	69.24	179.87	10,722.00	-155.66	790.13	157.45	12.00	12.00	0.00
Wolfcamp A2									
10,925.00	71.76	179.87	10,729.01	-175.45	790.18	177.24	12.00	12.00	0.00
10,950.00	74.76	179.87	10,736.21	-199.38	790.23	201.18	12.00	12.00	0.00
10,974.31	77.67	179.87	10,742.00	-222.99	790.28	224.79	12.00	12.00	0.00
Top Target									
10,975.00	77.76	179.87	10,742.15	-223.67	790.28	225.46	12.00	12.00	0.00
11,000.00	80.76	179.87	10,746.81	-248.23	790.34	250.02	12.00	12.00	0.00
11,025.00	83.76	179.87	10,750.17	-272.99	790.39	274.79	12.00	12.00	0.00
11,050.00	86.76	179.87	10,752.24	-297.91	790.45	299.70	12.00	12.00	0.00
11,074.88	89.74	179.87	10,753.00	-322.77	790.50	324.56	12.00	12.00	0.00
Landing Point									
11,077.02	90.00	179.87	10,753.01	-324.91	790.51	326.71	12.00	12.00	0.00
Start 4553.90 hold at 11077.02 MD									
11,100.00	90.00	179.87	10,753.01	-347.89	790.56	349.68	0.00	0.00	0.00
11,200.00	90.00	179.87	10,753.00	-447.89	790.78	449.68	0.00	0.00	0.00
11,300.00	90.00	179.87	10,753.00	-547.89	791.00	549.68	0.00	0.00	0.00
11,400.00	90.00	179.87	10,753.00	-647.89	791.22	649.68	0.00	0.00	0.00
11,500.00	90.00	179.87	10,753.00	-747.89	791.45	749.68	0.00	0.00	0.00
11,600.00	90.00	179.87	10,753.00	-847.89	791.67	849.68	0.00	0.00	0.00
11,700.00	90.00	179.87	10,753.00	-947.89	791.89	949.68	0.00	0.00	0.00
11,800.00	90.00	179.87	10,753.00	-1,047.89	792.11	1,049.68	0.00	0.00	0.00
11,900.00	90.00	179.87	10,753.00	-1,147.89	792.33	1,149.68	0.00	0.00	0.00
12,000.00	90.00	179.87	10,753.00	-1,247.89	792.55	1,249.68	0.00	0.00	0.00
12,100.00	90.00	179.87	10,753.00	-1,347.89	792.78	1,349.68	0.00	0.00	0.00
12,200.00	90.00	179.87	10,753.00	-1,447.89	793.00	1,449.68	0.00	0.00	0.00
12,300.00	90.00	179.87	10,753.00	-1,547.89	793.22	1,549.68	0.00	0.00	0.00
12,400.00	90.00	179.87	10,753.00	-1,647.89	793.44	1,649.68	0.00	0.00	0.00
12,500.00	90.00	179.87	10,753.00	-1,747.89	793.66	1,749.68	0.00	0.00	0.00
12,600.00	90.00	179.87	10,753.00	-1,847.89	793.88	1,849.68	0.00	0.00	0.00
12,700.00	90.00	179.87	10,753.00	-1,947.89	794.10	1,949.68	0.00	0.00	0.00
12,800.00	90.00	179.87	10,753.00	-2,047.89	794.33	2,049.68	0.00	0.00	0.00
12,900.00	90.00	179.87	10,753.00	-2,147.89	794.55	2,149.68	0.00	0.00	0.00
13,000.00	90.00	179.87	10,753.00	-2,247.89	794.77	2,249.68	0.00	0.00	0.00
13,100.00	90.00	179.87	10,753.00	-2,347.89	794.99	2,349.68	0.00	0.00	0.00
13,200.00	90.00	179.87	10,753.00	-2,447.89	795.21	2,449.68	0.00	0.00	0.00
13,300.00	90.00	179.87	10,753.00	-2,547.89	795.43	2,549.68	0.00	0.00	0.00
13,400.00	90.00	179.87	10,753.00	-2,647.89	795.66	2,649.68	0.00	0.00	0.00
13,500.00	90.00	179.87	10,753.00	-2,747.89	795.88	2,749.68	0.00	0.00	0.00
13,600.00	90.00	179.87	10,753.00	-2,847.89	796.10	2,849.68	0.00	0.00	0.00
13,700.00	90.00	179.87	10,753.00	-2,947.89	796.32	2,949.68	0.00	0.00	0.00
13,800.00	90.00	179.87	10,753.00	-3,047.88	796.54	3,049.68	0.00	0.00	0.00
13,900.00	90.00	179.87	10,753.00	-3,147.88	796.76	3,149.68	0.00	0.00	0.00
14,000.00	90.00	179.87	10,753.00	-3,247.88	796.99	3,249.68	0.00	0.00	0.00
14,100.00	90.00	179.87	10,753.00	-3,347.88	797.21	3,349.68	0.00	0.00	0.00
14,200.00	90.00	179.87	10,753.00	-3,447.88	797.43	3,449.68	0.00	0.00	0.00
14,300.00	90.00	179.87	10,753.00	-3,547.88	797.65	3,549.68	0.00	0.00	0.00
14,400.00	90.00	179.87	10,753.00	-3,647.88	797.87	3,649.68	0.00	0.00	0.00
14,500.00	90.00	179.87	10,753.00	-3,747.88	798.09	3,749.68	0.00	0.00	0.00

Scientific Drilling Int.

Planning Report

Database:	Midland District	Local Co-ordinate Reference:	Well RDX Federal Com 17-37H
Company:	WPX Energy	TVD Reference:	KB @ 3094.00usft (Orion Aires)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	KB @ 3094.00usft (Orion Aires)
Site:	RDX Federal Com 17 Pad	North Reference:	Grid
Well:	RDX Federal Com 17-37H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)
3,413.91	3,404.00	Bell Canyon (Base of Salt)			
4,547.55	4,528.00	Cherry Canyon			
4,700.85	4,680.00	Brushy Canyon			
7,291.89	7,249.00	Bone Spring			
7,429.06	7,385.00	Avalon			
8,205.64	8,155.00	1st Bone Spring Sand			
8,605.48	8,554.00	2nd Bone Spring Lime			
9,021.48	8,970.00	2nd Bone Spring Sand			
9,475.48	9,424.00	3rd Bone Spring Lime			
10,119.48	10,068.00	3rd Bone Spring Sand			
10,515.33	10,459.00	Wolfcamp Top			
10,548.32	10,489.00	WC_X			
10,653.29	10,577.00	WC_Y			
10,685.12	10,601.00	Wolfcamp A			
10,904.01	10,722.00	Wolfcamp A2			
10,974.31	10,742.00	Top Target			
11,074.88	10,753.00	Landing Point			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,000.00	2,000.00	0.00	0.00	Start Build 2.00
2,373.90	2,372.84	4.62	23.92	Start 5803.68 hold at 2373.90 MD
8,177.58	8,127.16	147.93	765.53	Start Drop -2.00
8,551.48	8,500.00	152.55	789.45	Start 1775.54 hold at 8551.48 MD
10,327.02	10,275.54	152.55	789.45	Start DLS 12.00 TFO 179.87
11,077.02	10,753.01	-324.91	790.51	Start 4553.90 hold at 11077.02 MD
15,630.92	10,753.00	-4,878.80	800.60	TD at 15630.92

SEP 11 2017

**PECOS DISTRICT
CONDITIONS OF APPROVAL**

RECEIVED

OPERATOR'S NAME:	RKI Exploration & Production, LLC.
LEASE NO.:	NMNM020965
WELL NAME & NO.:	37H- RDX Federal Com 17
SURFACE HOLE FOOTAGE:	200'/N & 760'/W
BOTTOM HOLE FOOTAGE:	230'/S & 1548'/W
LOCATION:	Section 17, T. 26 S., R. 30 E., NMPM
COUNTY:	Eddy County, New Mexico

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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

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

☒ **Eddy County**

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

- Hydrogen Sulfide (H₂S) monitors shall be installed prior to drilling out the surface shoe. If H₂S 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.**
- 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.**
- 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.
- 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 Water Basin:

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 at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

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

Abnormal pressures may be encountered upon penetrating the 3rd Bone Spring Sandstone and all subsequent formations.

Medium Cave/Karst

Possibility of water flows in the Salado and Castile.

Possibility of lost circulation in the Rustler, Red Beds and Delaware.

1. The 13-3/8 inch surface casing shall be set at approximately 787 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.

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 (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:

Operator has proposed DV tool at depth of 5500'. Operator is to submit sundry if DV tool depth varies by more than 100' from approved depth.

- 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 approved top of cement on the next stage.
- b. Second stage above DV tool:
 - ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

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 (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Medium Cave/Karst: If cement does not circulate to surface on the intermediate casing, the cement on the production casing must come to surface.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

3. The minimum required fill of cement behind the 7 production casing is:
 - ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.
4. The minimum required fill of cement behind the 4-1/2 inch production liner is:
 - ☒ Cement should tie-back to the top of the liner. Operator shall provide method of verification.
4. 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. **Operator has proposed a multi-bowl wellhead assembly that has a weld on head with no o-ring seals. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi.**
 - a. **Wellhead manufacturer is supplying the test plug/retrieval tool for the operator's third party tester to use during the BOP/BOPE test. Operator shall use the supplied test plug/retrieval tool.**
 - b. **Operator shall install the wear bushing required by the wellhead manufacturer. This wear bushing shall be installed by using the test plug/retrieval tool.**
 - c. **Wellhead manufacturer representative shall be on location when the intermediate casing mandrel is landed. Operator shall submit copy of manufacturer's wellsite report with subsequent report.**
 - d. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**

5M 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.

3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, 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. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - a. The tests shall be done by an independent service company utilizing a test plug.
 - 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.
 - f. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

D. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

E. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

F. 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.

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