ATS-13- 1103

HOBBS OCD

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Form 3160-3
(August 2007)

OCD Hobbs

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NM LC 029405B

6. If Indian, Allotee or Tribe Name N/A

1a. Type of work: ☑ DRILL ☐ REENTER

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

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☑ Multiple Zone

8. Lease Name and Well No. Ruby Federal 33 38653

2. Name of Operator ConocoPhillips Company 217817

9. API Well No. 30-025-41505

3a. Address P.O. Box 51810 Midland, TX 79710-1810

3b. Phone No. *(include area code)* 432-688-6913

10. Field and Pool, or Exploratory Maljamar; Yeso West 44500

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface UL G, Sec.18, T17S, R32E; 1725' FNL & 1675' FEL

At proposed prod. zone UL G, Sec.18, T17S, R32E; 2211' FNL & 1658' FEL

11. Sec., T. R. M. or Blk. and Survey or Area Sec.18, T17S, R32E;

14. Distance in miles and direction from nearest town or post office* Approximately 3 miles south of Maljamar, New Mexico

12. County or Parish Lea County

13. State NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) About 338'	16. No. of acres in lease 1601.96	17. Spacing Unit dedicated to this well 40 acres
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. About 130'	19. Proposed Depth 6939' TVD/6978'MD	20. BLM/BIA Bond No. on file ES0085
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3970' GL	22. Approximate date work will start* 01/01/2014	23. Estimated duration 9 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:

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

25. Signature Susan B. Maunder	Name *(Printed/Typed)* Susan B. Maunder	Date 8/2/13
Title Senior Regulatory Specialist		
Approved by *(Signature)*	Name *(Printed/Typed)*	Date NOV 15 2013
Title /S/ STEPHEN J. CAFFEY 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)

OK 11/22/13

Roswell Controlled Water Basin

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

NOV 26 2013

PM

Drilling Plan
ConocoPhillips Company
Maljamar; Grayburg-San Andres, Yeso (west)

Ruby Federal #33

Lea County, New Mexico

1. Estimated tops of geological markers and estimated depths to water, oil, or gas formations:

The datum for these depths is RKB (which is 13' above Ground Level).

Formations	Top Depth FT TVD	Top Depths FT MD	Contents
Quaternary	Surface	Surface	Fresh Water
Rustler	715	715	Anhydrite
Salado (top of salt)	887	887	Salt
Tansill (base of salt)	1882	1882	Gas, Oil and Water
Yates	2082	2082	Gas, Oil and Water
Seven Rivers	2372	2373	Gas, Oil and Water
Queen	3015	3025	Gas, Oil and Water
Grayburg	3451	3468	Gas, Oil and Water
San Andres	3805	3827	Gas, Oil and Water
Glorieta	5275	5314	Gas, Oil and Water
Paddock	5351	5390	Gas, Oil and Water
Blinebry	5730	5769	Gas, Oil and Water
Tubb	6739	6778	Gas, Oil and Water
Deepest estimated perforation	6739	6778	Deepest estimated perf. is ~ Top of Tubb
Total Depth (maximum)	6939	6978	200' below deepest estimated perforation

All of the water bearing formations identified above will be protected by setting of the 8-5/8" surface casing 25' – 70' into the Rustler formation and circulating of cement from casing shoe to surface in accordance with the provisions of Onshore Oil and Gas Order No. 2 and New Mexico Oil Conservation Division Title 19.

The targeted oil and gas bearing formations identified above will be protected by setting of the 5-1/2" production casing 10' off bottom of TD and circulating of cement from casing shoe to surface in accordance with the provisions of Onshore Oil and Gas Order No. 2 and New Mexico Oil Conservation Division Title 19.

See COA

2. Proposed casing program:

Type	Hole Size (in)	Interval MD RKB (ft) From	To	OD (inches)	Wt (lb/ft)	Gr	Conn	MIY (psi)	Col (psi)	Jt Str (klbs)	Safety Factors Calculated per ConocoPhillips Corporate Criteria: Burst DF	Collapse DF	Jt Str DF (Tension) Dry/Buoyant
Cond	20	0	40' – 85' (30' – 75' BGL)	16	0.5" wall	B	Line Pipe	N/A	N/A	N/A	NA	NA	NA
Alt. Cond	20	0	40' – 85' (30' – 75' BGL)	13-3/8	48#	H-40	PE	1730	740	N/A	NA	NA	NA
Surf	12-1/4	0	~~740~~ – 785'	8-5/8	24#	J-55	STC	2950	1370	244	1.60	3.93	3.67
Prod	7-7/8	0	6923' – 6968'	5-1/2	17#	L-80	LTC	7740	6290	338	2.14	2.52	2.00

The casing will be suitable for H_2S Service. All casing will be new.

The surface and production casing will be set approximately 10' off bottom and we will drill the hole with a 45' range uncertainty for casing set depth to fit the casing string so that the cementing head is positioned at the floor for the cement job.

The production casing will be set 155' to 200' below the deepest estimated perforation to provide rathole for the pumping completion and for the logs to get deep enough to log the interval of interest.

Casing Safety Factors - BLM Criteria:

Type	Depth	Wt	MIY	Col	Jt Str	Drill Fluid	Burst	Collapse	Tensile-Dry	Tens-Bouy
Surface Casing	785	24	2950	1370	244000	8.5	8.50	3.95	13.0	14.9
Production Casing	6977	17	7740	6290	338000	10	2.14	1.74	2.85	3.37

Casing Safety Factors – Additional ConocoPhillips Criteria:

ConocoPhillips casing design policy establishes Corporate Minimum Design Factors (see table below) and requires that service life load cases be considered and provided for in the casing design.

ConocoPhillips Corporate Criteria for Minimum Design Factors

	Burst	Collapse	Axial
Casing Design Factors	1.15	1.05	1.4

Type	Depth	Wt	MIY	Col	Jt Str	Pipe Yield	MW	Burst	Col	Ten
Conductor	85	65	35000	-	-	432966	-	-	-	-
Surface Casing (8-5/8" 24# J-55 STC)	785	24	2950	1370	244000	381000	8.5	1.60	3.93	3.67
Production Casing (5-1/2" 17# L-80 LTC)	6968	17	7740	6290	338000	397000	10	2.14	2.52	2.00

Burst – ConocoPhillips Required Load Cases

The maximum internal (burst) load on the Surface Casing occurs when the surface casing is tested to 1500 psi (as per BLM Onshore Order 2 - III. Requirements).
The maximum internal (burst) load on the Production Casing occurs during the fracture stimulation where the maximum allowable working pressure (MAWP) is the pressure that would fit ConocoPhillips Corporate Criteria for Minimum Factors.

Surface Casing Test Pressure = 1500 psi
Surface Rated Working Pressure (BOPE) = 3000 psi
Field SW = 10 ppg
Predicted Pore Pressure at TD (PPTD) = 8.55 ppg
Predicted Frac Gradient at Shoe (CSFG) = 19.23 ppg

Surface Casing Burst Safety Factor = API Burst Rating / Maximum Predicted Surface Pressure (MPSP) 'OR' Maximum Allowable Surface Pressure (MASP)
Production Casing MAWP for the Fracture Stimulation = API Burst Rating / Corporate Minimum Burst Design Factor

Surface Casing Burst Safety Factor:

Case #1. MPSP (MW_{hyd} next section) = 785 x 0.052 x 10 = 408
Case #2. MPSP (Field SW @ $Bullhead_{CSFG}$ + 200 psi) = 785 x 0.052 x 19.23 - 408 + 200 = 577
Case #3. MPSP (Kick Vol @ next section TD) = 6968 x 0.052 x 8.55 - 618.3 - 347 = *2133*
Case #4. MPSP (PPTD - GG) = 6968 x 0.052 x 8.55 - 696.8 = *2401*
Case #3 & #4 Limited to MPSP (CSFG + 0.2 ppg) = 785 x 0.052 x (19.23 + 0.2) = 793
MASP (MW_{hyd} + Test Pressure) = 785 x 0.052 x 8.5 + 1500 = 1847
Burst Safety Factor (Max. MPSP or MASP) = 2950 / 1847 = 1.60

Production Casing Burst Safety Factor:

Case #1. MPSP ($MW_{hyd\ TD}$) = 6968 x 0.052 x 10 = 3623.36
Case #4. MPSP (PPTD - GG) = 6968 x 0.052 x 8.55 - 696.8 = 2401
Burst Safety Factor (Max. MPSP) = 7740 / 3623 = 2.14
MAWP for the Fracture Stimulation (Corporate Criteria) = 7740 / 1.15 = 6730

Collapse – ConocoPhillips Required Load Cases

The maximum collapse load on the Surface Casing occurs when cementing to surface, 1/3 evacuation to the next casing setting depth, or deepest depth of exposure (full evacuation).
The maximum collapse load on the Production Casing occurs when cementing to surface, or 1/3 evacuation to the deepest depth of exposure; and therefore, the external pressure profile for the evacuation cases should be equal to the pore pressure of the horizons on the outside of the casing which we assumed to be PPTD.

Surface Casing Collapse Safety Factor = API Collapse Rating / Full Evacuation 'OR' Cement Displacement during Cementing to Surface
Production Casing Collapse Safety Factor = API Collapse Rating / Maximum Predicted Surface Pressure 'OR' Cement Displacement during Cementing to Surface

Cement Displacement Fluid (FW) = 8.34 ppg
Surface Cement Lead = 13.6 ppg
Surface Cement Tail = 14.6 ppg
Top of Surface Tail Cement = 300 ft
Top of Cement = Cement to Surface
Prod Cement Lead = 11.8 ppg
Prod Cement Tail = 16.4 ppg
Top of Prod Tail Cement = 5200 ft

Surface Casing Collapse Safety Factor:

Full Evacuation Diff Pressure = 785 x 0.052 x 8.55 = 349
Cementing Diff Lift Pressure = [(485 x 0.052 x 13.6) + (300 x 0.052 x 14.8) - 340] = 233
Collapse Safety Factor = 1370 / 349 = 3.93

Production Casing Collapse Safety Factor:

1/3 Evacuation Diff Pressure = [(6968 x 0.052 x 8.55) - (6968 / 3 x 0.052 x 8.34)] = 2091
Cementing Diff Lift Pressure = [(1768 x 0.052 x 11.8) + (5200 x 0.052 x 16.4) - 3022] = 2498
Collapse Safety Factor = 6290 / 2498 = 2.52

Tensial Strength – ConocoPhillips Required Load Cases

The maximum axial (tension) load occurs if casing were to get stuck and pulled on to try to get it unstuck.

Maximum Allowable Axial Load for Pipe Yield = API Pipe Yield Strength Rating / Corporate Minimum Axial Design Factor
Maximum Allowable Axial Load for Joint = API Joint Strength Rating / Corporate Minimum Axial Design Factor
Maximum Allowable Hook Load (Limited to 75% of Rig Max Load) = Maximum Allowable Axial Load
Maximum Allowable Overpull Margin = Maximum Allowable Hook Load - Bouyant Wt of the String
Tensial Safety Factor = API Pipe Yield 'OR' API Joint Strength 'OR' Rig Max Load Rating / (Bouyant Wt of String + Minimum Overpull Required)

Rig Max Load (300,000 lbs) x 75% = 225000 lbs
Minimum Overpull Required = 50000 lbs

Surface Casing Tensial Strength Safety Factor:

Air Wt = 18840
Bouyant Wt = 18840 x 0.870 = 16395
Max. Allowable Axial Load (Pipe Yield) = 381000 / 1.40 = 272143
Max. Allowable Axial Load (Joint) = 244000 / 1.40 = 174286
Max. Allowable Hook Load (Limited to 75% of Rig Max Load) = 174286
Max. Allowable Overpull Margin = 174286 - (18840 x 0.870) = 157891
Tensial Safety Factor = 244000 / (16395 + 50000) = 3.67

Production Casing Tensial Strength Safety Factor:

Air Wt = 118456
Bouyant Wt = 118456 x 0.847 = 100371
Max. Allowable Axial Load (Pipe Yield) = 397000 / 1.40 = 283571
Max. Allowable Axial Load (Joint) = 338000 / 1.40 = 241429
Max. Allowable Hook Load (Limited to 75% of Rig Max Load) = 225000
Max. Allowable Overpull Margin = 225000 - (118456 x 0.847) = 124629
Tensial Safety Factor = 300000 / (100371 + 50000) = 2.00

Compression Strength – ConocoPhillips Required Load Cases

The maximum axial (compression) load for the well is where the surface casing is landed on the conductor with a support of a plate or landing ring. The surface casing is also calculated to bear 60% of the load but not limited. Any other axial loads such as a snubbing unit or other would need to be added to the load.

Compression Safety Factor = API Axial Joint Strength Rating 'OR' API Axial Pipe Yield Rating / Maximum Predicted Load

Wellhead Load = 3000 lbs

Conductor & Surface Compression Safety Factor

Surf Casing Wt (Bouyant) = (18840 x 0.870) = 16395
Prod Casing Wt (Bouyant) = (118456 x 0.847) = 100371
Tubing Wt (Air Wt) = 6968 x 6.5 = 45292
Tubing Fluid Wt = 6968 x 0.052 x 6.55 x 0.7854 x 2.441 ^2 = 11107
Load on Conductor = 3000 + 16395 + 100371 + 45292 + 11107 = 176165
Conductor Compression Safety Factor = 432966 / 176165 = 2.46
Load on Surface Casing = 176165 x 60% = 105699
Surface Casing Compression Safety Factor = 244000 / 105699 = 2.31

3. **Proposed cementing program:**

<u>16" or 13-3/8" Conductor:</u>

Cement to surface with rathole mix, ready mix or Class C Neat cement.
(Note: The gravel used in the cement is not to exceed 3/8" diameter)
TOC at surface.

8-5/8" Surface Casing Cementing Program:

The intention for the cementing program for the Surface Casing is to:

- Place the Tail Slurry from the casing shoe to 300' above the casing shoe,
- Bring the Lead Slurry to surface.

Spacer: 20 bbls Fresh Water

Slurry		Intervals Ft MD		Weight ppg	Sx	Vol Cuft	Additives	Yield ft^3/sx
Lead	Class C	Surface	440' – 485'	13.6	300	510	2% Extender 2% $CaCl_2$ 0.125 lb/sx LCM if needed 0.2% Defoamer Excess =75% based on gauge hole volume	1.70
Tail	Class C	440' – 485'	740' – 785'	14.8	200	268	1% CaCl2 Excess = 100% based on gauge hole volume	1.34

Displacement: Fresh Water.

Note: In accordance with the Pecos District Conditions of Approval, we will Wait on Cement (WOC) for a period of not less than 18 hrs after placement or until at least 500 psi compressive strength has been reached in both the Lead Slurry and Tail Slurry cements on the Surface Casing, whichever is greater.

5-1/2" Production Casing & Cementing Program:

The intention for the cementing program for the Production Casing is to:

- Place the Tail Slurry from the casing shoe to a point approximately 200' above the top of the Paddock,
- Bring the Lead Slurry to surface.

Spacer: 20 bbls Fresh Water

Slurry		Intervals Ft MD		Weight ppg	Sx	Vol Cuft	Additives	Yield ft^3/sx
Lead	50:50 Poz/C	Surface	5200'	11.8	700	1820	10% Bentonite 5% Salt 0.2%-0.4% Fluid loss additive 0.125 lb/sx LCM if needed Excess = 220% or more if needed based on gauge hole volume	2.6
Tail	Class H	5200'	6923' – 6968'	16.4	400	428	0.2% Fluid loss additive 0.3% Dispersant 0.15% Retarder 0.2% Antifoam Excess = 100% or more if needed based on gauge hole volume	1.07

Displacement: Fresh Water with approximately 250 ppm gluteraldehyde biocide.

5-1/2" Production Casing & Cementing Program – TXI/LW Cementing Option for Grayburg-San Andres:

ConocoPhillips Company respectfully requests the options to our cementing program. This option will only be implemented in the cementing operation of wells requesting for co-mingling after approval and authorization by all agencies have been obtained. The intention for the alternative option to the cementing program for the Production Casing is to:

- Accommodate the additional frac'ing and stimulation of the Grayburg-San Andres by placement of the Tail Slurry from the casing shoe to the top of the Grayburg-San Andres formation,
- Bring the Lead Slurry to surface.

Spacer: 20 bbls Fresh Water

Slurry		Intervals Ft MD		Weight ppg	Sx	Vol Cuft	Additives	Yield ft^3/sx
Lead	50:50 Poz/C	Surface	3000'	11.8	500	1300	10% Bentonite 8 lbs/sx Salt 0.2%-0.4% Fluid loss additive 0.125 lb/sx LCM if needed Excess = 200% or more if needed based on gauge hole volume	2.6
Tail	TXI/LW	3000'	6923' – 6968'	13.2	800	1120	0.5% Fluid loss additive 0.10% Retarder 0.2% Antifoam 0.125 lb/sx LCM if needed Excess = 150% or more if needed based on gauge hole volume	1.40

Displacement: Fresh Water with approximately 250 ppm gluteraldehyde biocide.

Proposal for Option to Adjust Production Casing Cement Volumes:

The production casing cement volume presented above are estimates based on gauge 7-7/8" hole. We will adjust these volumes based on the caliper log data for each well and our trends for amount of cement returns to surface. Also, if no caliper log is available for any particular well, we would propose an option to possibly increase the production casing cement volume to account for any uncertainty in regard to the hole volume.

4. Pressure Control Equipment:

A 11" 3M system will be installed, used, maintained, and tested accordingly as described in Onshore Oil and Gas Order No. 2.

Our BOP equipment will be:
- Rotating Head
- Annular BOP, 11" 3M
- Blind Ram, 11" 3M
- Pipe Ram, 11" 3M

After nippling up, and every 30 days thereafter or whenever any seal subject to test pressure is broken followed by related repairs, blowout preventors will be pressure tested. BOP will be inspected and operated at least daily to insure good working order. All pressure and operating tests will be done by an independent service company and recorded on the daily drilling reports. BOP will be tested using a test plug to isolate BOP stack from casing. BOP test will include a low pressure test from 250 to 300 psi for a minimum of 10 minutes or until requirements of test are met, whichever is longer. Ram type preventers and associated equipment will be tested to the approved stack working pressure of 3000 psi isolated by test plug. Annular type preventers will be tested to 50 percent of rated working pressure, and therefore will be tested to 1500 psi. Pressure will be held for at least 10 minutes or until provisions of test are met, whichever is longer. Valve on casing head below test plug will be open during testing of BOP stack. BOP will comply with all provisions of Onshore Oil and Gas Order No. 2 as specified. **See Attached BOPE Schematic.** A variance is respectfully requested to allow for the use of flexible hose. The variance request is included as a separate enclosure with attachments.

5. Proposed Mud System:

The mud systems that are proposed for use are as follows:

DEPTH	TYPE	Density ppg	FV sec/qt	API Fluid Loss cc/30 min	pH	Vol bbl
0 – Surface Casing Point	Fresh Water or Fresh Water Native Mud in Steel Pits	8.5 – 9.0	28 – 40	N.C.	N.C.	120 – 160
Surface Casing Point to TD	Brine (Saturated $NaCl_2$) in Steel Pits	10	29	N.C.	10 – 11	500 – 1000
Conversion to Mud at TD	Brine Based Mud ($NaCl_2$) in Steel Pits	10	33 – 40	5 – 10	10 – 11	0 – 750

Gas detection equipment and pit level flow monitoring equipment will be on location. A flow paddle will be installed in the flow line to monitor relative amount of mud flowing in the non-pressurized return line. Mud probes will be installed in the individual tanks to monitor pit volumes of the drilling fluid with a pit volume totalizer. Gas detecting equipment and H2S monitor alarm will be installed in the mud return system and will be monitored. A mud gas separator will be installed and operable before drilling out from the Surface Casing. The gases shall be piped into the flare system. Drilling mud containing H2S shall be degassed in accordance with API RP-49, item 5.14.

In the event that the well is flowing from a waterflow, then we would discharge excess drilling fluids from the steel mud pits through a fas-line into steel frac tanks at an offset location for containment. Depending on the rate of waterflow, excess fluids will be hauled to an approved disposal facility, or if in suitable condition, may be reused on the next well.

No reserve pit will be built.

Proposal for Option to Not Mud Up at TD:
FW, Brine, and Mud volume presented above are estimates based on gauge 12-1/4" or 7-7/8" holes. We will adjust these volume based on hole conditions. We do not plan to keep any weighting material at the wellsite. Also, we propose an option to not mud up leaving only brine in the hole if we have good hole stability.

6. **Logging, Coring, and Testing Program:**
   a. No drill stem tests will be done
   b. Remote gas monitoring planned for the production hole section (optional).
   c. No whole cores are planned
   d. The open hole electrical logging program is planned to be as follows:
      - Total Depth to 2500': Resistivity, Density, and Gamma Ray
      - Total Depth to surface Casing Shoe: Caliper
      - Total Depth to surface, Gamma Ray and Neutron
      - Formation pressure data (XPT) on electric line if needed (optional)
      - Rotary Sidewall Cores on electric line if needed (optional)
      - BHC or Dipole Sonic if needed (optional)
      - Spectral Gamma Ray if needed (optional)

7. **Abnormal Pressures and Temperatures:**

- No abnormal pressures are expected to be encountered.

- Loss of circulation is a possibility in the horizons below the Top of Grayburg. We expect that normal Loss of Circulation Material will be successful in healing any such loss of circulation events.

  - The bottom hole pressure is expected to be 8.55 ppg gradient.
  - The expected Bottom Hole Temperature is 115 degrees F.

- The estimated H_2S concentrations and ROE calculations for the gas in the zones to be penetrated are presented in the table below for the various producing horizons in this area:

FORMATION / ZONE	H2S (PPM)	Gas Rate (MCFD)	ROE 100 PPM	ROE 500 PPM
Grayburg / San Andres (from MCA)	14000	38	59	27
Yeso Group	400	433	34	15

ConocoPhillips will comply with the provisions of Oil and Gas Order # 6, Hydrogen Sulfide Operations. Also, ConocoPhillips will provide an H2S Contingency Plan (please see copy attached) and will keep this plan updated and posted at the wellsite during the drilling operation.

8. **Anticipated starting date and duration of operations:**

Well pad and road constructions will begin as soon as all agency approvals are obtained. Anticipated date to drill this well as early as 2014 after receiving approval of the APD.

Attachments:

- Attachment # 1 .... BOP and Choke Manifold Schematic – 3M System
- Attachment # 2 .... Diagram of Choke Manifold Equipment

Contact Information:

Proposed 8 August 2013 by:
James Chen
Drilling Engineer, ConocoPhillips Company
Phone (832) 486-2184
Cell (832) 768-1647

ConocoPhillips MCBU

Buckeye
Ruby Federal
Ruby Federal 33

Original Hole

Plan: S-Shape Plan

Standard Planning Report - Geographic

05 August, 2013

ConocoPhillips

Planning Report - Geographic

Database:	EDM Central Planning	**Local Co-ordinate Reference:**	Well Ruby Federal 33
Company:	ConocoPhillips MCBU	**TVD Reference:**	RKB @ 3983.0usft (PD 822)
Project:	Buckeye	**MD Reference:**	RKB @ 3983.0usft (PD 822)
Site:	Ruby Federal	**North Reference:**	Grid
Well:	Ruby Federal 33	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	S-Shape Plan		

Project Buckeye, Lea County, NM

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		Using geodetic scale factor

Site Ruby Federal, New Mexico, Southeast

Site Position:		**Northing:**	666,097.48 usft	**Latitude:**	32° 49' 48.040 N
From:	Lat/Long	**Easting:**	666,763.63 usft	**Longitude:**	103° 47' 25.559 W
Position Uncertainty:	3.5 usft	**Slot Radius:**	8 "	**Grid Convergence:**	0.29 °

Well Ruby Federal 33, Deviated Well

Well Position	**+N/-S**	0.0 usft	**Northing:**	668,652.10 usft	**Latitude:**	32° 50' 13.500 N
	+E/-W	0.0 usft	**Easting:**	663,133.60 usft	**Longitude:**	103° 48' 7.950 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	3,970.0 usft

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2012	8/5/2013	7.58	60.60	48,714

Design S-Shape Plan

Audit Notes:

Version:	1	**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	176.10

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,882.0	0.00	0.00	1,882.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,538.8	9.85	176.10	2,535.6	-56.2	3.8	1.50	1.50	0.00	176.10	
4,733.0	9.85	176.10	4,697.4	-430.8	29.3	0.00	0.00	0.00	0.00	
5,389.8	0.00	0.00	5,351.0	-487.0	33.2	1.50	-1.50	0.00	180.00	Ruby Federal 33 (Plai
6,977.8	0.00	0.00	6,939.0	-487.0	33.2	0.00	0.00	0.00	0.00	

Database:	EDM Central Planning	**Local Co-ordinate Reference:**	Well Ruby Federal 33
Company:	ConocoPhillips MCBU	**TVD Reference:**	RKB @ 3983.0usft (PD 822)
Project:	Buckeye	**MD Reference:**	RKB @ 3983.0usft (PD 822)
Site:	Ruby Federal	**North Reference:**	Grid
Well:	Ruby Federal 33	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	S-Shape Plan		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
79.0	0.00	0.00	79.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
Conductor									
100.0	0.00	0.00	100.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
200.0	0.00	0.00	200.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
300.0	0.00	0.00	300.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
400.0	0.00	0.00	400.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
500.0	0.00	0.00	500.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
600.0	0.00	0.00	600.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
700.0	0.00	0.00	700.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
715.0	0.00	0.00	715.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
Rustler									
785.0	0.00	0.00	785.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
Surface									
800.0	*0.00*	*0.00*	*800.0*	*0.0*	*0.0*	*668,652.10*	*663,133.60*	*32° 50' 13.500 N*	*103° 48' 7.950 W*
887.0	0.00	0.00	887.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
Salado									
900.0	0.00	0.00	900.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
1,000.0	0.00	0.00	1,000.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
1,100.0	0.00	0.00	1,100.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
1,200.0	0.00	0.00	1,200.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
1,300.0	0.00	0.00	1,300.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
1,400.0	0.00	0.00	1,400.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
1,500.0	0.00	0.00	1,500.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
1,600.0	0.00	0.00	1,600.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
1,700.0	0.00	0.00	1,700.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
1,800.0	0.00	0.00	1,800.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
1,882.0	0.00	0.00	1,882.0	0.0	0.0	668,652.10	663,133.60	32° 50' 13.500 N	103° 48' 7.950 W
Tansill									
1,900.0	0.27	176.10	1,900.0	0.0	0.0	668,652.05	663,133.61	32° 50' 13.500 N	103° 48' 7.950 W
2,000.0	1.77	176.10	2,000.0	-1.8	0.1	668,650.28	663,133.73	32° 50' 13.482 N	103° 48' 7.949 W
2,082.1	3.00	176.10	2,082.0	-5.2	0.4	668,646.87	663,133.96	32° 50' 13.448 N	103° 48' 7.946 W
Yates									
2,100.0	3.27	176.10	2,099.9	-6.2	0.4	668,645.89	663,134.02	32° 50' 13.439 N	103° 48' 7.945 W
2,200.0	4.77	176.10	2,199.6	-13.2	0.9	668,638.90	663,134.50	32° 50' 13.369 N	103° 48' 7.940 W
2,300.0	6.27	176.10	2,299.2	-22.8	1.6	668,629.30	663,135.15	32° 50' 13.274 N	103° 48' 7.933 W
2,373.4	7.37	176.10	2,372.0	-31.5	2.1	668,620.61	663,135.75	32° 50' 13.188 N	103° 48' 7.927 W
Seven Rivers									
2,400.0	7.77	176.10	2,398.4	-35.0	2.4	668,617.11	663,135.99	32° 50' 13.154 N	103° 48' 7.924 W
2,500.0	9.27	176.10	2,497.3	-49.8	3.4	668,602.33	663,136.99	32° 50' 13.007 N	103° 48' 7.913 W
2,538.8	9.85	176.10	2,535.6	-56.2	3.8	668,595.90	663,137.43	32° 50' 12.944 N	103° 48' 7.908 W
2,600.0	9.85	176.10	2,595.9	-66.6	4.5	668,585.45	663,138.14	32° 50' 12.840 N	103° 48' 7.901 W
2,700.0	9.85	176.10	2,694.4	-83.7	5.7	668,568.38	663,139.30	32° 50' 12.671 N	103° 48' 7.888 W
2,800.0	9.85	176.10	2,792.9	-100.8	6.9	668,551.31	663,140.47	32° 50' 12.502 N	103° 48' 7.875 W
2,900.0	9.85	176.10	2,891.4	-117.9	8.0	668,534.24	663,141.63	32° 50' 12.333 N	103° 48' 7.863 W
3,000.0	9.85	176.10	2,990.0	-134.9	9.2	668,517.17	663,142.79	32° 50' 12.164 N	103° 48' 7.850 W
3,025.4	9.85	176.10	3,015.0	-139.3	9.5	668,512.84	663,143.09	32° 50' 12.122 N	103° 48' 7.847 W
Queen									
3,100.0	9.85	176.10	3,088.5	-152.0	10.4	668,500.10	663,143.95	32° 50' 11.996 N	103° 48' 7.838 W
3,200.0	9.85	176.10	3,187.0	-169.1	11.5	668,483.03	663,145.12	32° 50' 11.827 N	103° 48' 7.825 W
3,300.0	9.85	176.10	3,285.5	-186.1	12.7	668,465.96	663,146.28	32° 50' 11.658 N	103° 48' 7.812 W
3,400.0	9.85	176.10	3,384.1	-203.2	13.8	668,448.89	663,147.44	32° 50' 11.489 N	103° 48' 7.800 W

Database:	EDM Central Planning	**Local Co-ordinate Reference:**	Well Ruby Federal 33
Company:	ConocoPhillips MCBU	**TVD Reference:**	RKB @ 3983.0usft (PD 822)
Project:	Buckeye	**MD Reference:**	RKB @ 3983.0usft (PD 822)
Site:	Ruby Federal	**North Reference:**	Grid
Well:	Ruby Federal 33	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	S-Shape Plan		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,467.9	9.85	176.10	3,451.0	-214.8	14.6	668,437.30	663,148.23	32° 50' 11.374 N	103° 48' 7.791 W
Grayburg									
3,500.0	9.85	176.10	3,482.6	-220.3	15.0	668,431.82	663,148.60	32° 50' 11.320 N	103° 48' 7.787 W
3,600.0	9.85	176.10	3,581.1	-237.4	16.2	668,414.75	663,149.77	32° 50' 11.151 N	103° 48' 7.775 W
3,700.0	9.85	176.10	3,679.6	-254.4	17.3	668,397.68	663,150.93	32° 50' 10.982 N	103° 48' 7.762 W
3,800.0	9.85	176.10	3,778.2	-271.5	18.5	668,380.61	663,152.09	32° 50' 10.813 N	103° 48' 7.749 W
3,827.2	9.85	176.10	3,805.0	-276.2	18.8	668,375.96	663,152.41	32° 50' 10.767 N	103° 48' 7.746 W
San Andres									
3,900.0	9.85	176.10	3,876.7	-288.6	19.7	668,363.54	663,153.25	32° 50' 10.644 N	103° 48' 7.737 W
4,000.0	9.85	176.10	3,975.2	-305.6	20.8	668,346.47	663,154.42	32° 50' 10.475 N	103° 48' 7.724 W
4,100.0	9.85	176.10	4,073.7	-322.7	22.0	668,329.40	663,155.58	32° 50' 10.306 N	103° 48' 7.711 W
4,200.0	9.85	176.10	4,172.3	-339.8	23.1	668,312.33	663,156.74	32° 50' 10.137 N	103° 48' 7.699 W
4,300.0	9.85	176.10	4,270.8	-356.9	24.3	668,295.26	663,157.90	32° 50' 9.968 N	103° 48' 7.686 W
4,400.0	9.85	176.10	4,369.3	-373.9	25.5	668,278.19	663,159.07	32° 50' 9.799 N	103° 48' 7.674 W
4,500.0	9.85	176.10	4,467.8	-391.0	26.6	668,261.12	663,160.23	32° 50' 9.630 N	103° 48' 7.661 W
4,600.0	9.85	176.10	4,566.4	-408.1	27.8	668,244.05	663,161.39	32° 50' 9.461 N	103° 48' 7.648 W
4,700.0	9.85	176.10	4,664.9	-425.1	29.0	668,226.98	663,162.56	32° 50' 9.292 N	103° 48' 7.636 W
4,733.0	9.85	176.10	4,697.4	-430.8	29.3	668,221.35	663,162.94	32° 50' 9.236 N	103° 48' 7.632 W
4,800.0	8.85	176.10	4,763.5	-441.6	30.1	668,210.49	663,163.68	32° 50' 9.129 N	103° 48' 7.624 W
4,900.0	7.35	176.10	4,862.5	-455.7	31.0	668,196.44	663,164.64	32° 50' 8.990 N	103° 48' 7.613 W
5,000.0	5.85	176.10	4,961.9	-467.1	31.8	668,184.98	663,165.42	32° 50' 8.876 N	103° 48' 7.605 W
5,100.0	4.35	176.10	5,061.5	-476.0	32.4	668,176.11	663,166.02	32° 50' 8.789 N	103° 48' 7.598 W
5,200.0	2.85	176.10	5,161.3	-482.3	32.8	668,169.85	663,166.45	32° 50' 8.727 N	103° 48' 7.593 W
5,300.0	1.35	176.10	5,261.2	-485.9	33.1	668,166.20	663,166.69	32° 50' 8.690 N	103° 48' 7.591 W
5,313.8	1.14	176.10	5,275.0	-486.2	33.1	668,165.90	663,166.72	32° 50' 8.687 N	103° 48' 7.591 W
Glorieta									
5,389.8	0.00	0.00	5,351.0	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
Paddock									
5,400.0	0.00	0.00	5,361.2	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
5,500.0	0.00	0.00	5,461.2	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
5,600.0	0.00	0.00	5,561.2	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
5,700.0	0.00	0.00	5,661.2	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
5,768.8	0.00	0.00	5,730.0	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
Blinebry									
5,800.0	0.00	0.00	5,761.2	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
5,900.0	0.00	0.00	5,861.2	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
6,000.0	0.00	0.00	5,961.2	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
6,100.0	0.00	0.00	6,061.2	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
6,200.0	0.00	0.00	6,161.2	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
6,300.0	0.00	0.00	6,261.2	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
6,400.0	0.00	0.00	6,361.2	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
6,500.0	0.00	0.00	6,461.2	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
6,600.0	0.00	0.00	6,561.2	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
6,700.0	0.00	0.00	6,661.2	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
6,777.8	0.00	0.00	6,739.0	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
Tubb									
6,800.0	0.00	0.00	6,761.2	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
6,900.0	0.00	0.00	6,861.2	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
6,968.0	0.00	0.00	6,929.2	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
Production									
6,977.8	0.00	0.00	6,939.0	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
TD									

ConocoPhillips

Planning Report - Geographic

Database:	EDM Central Planning	**Local Co-ordinate Reference:**	Well Ruby Federal 33
Company:	ConocoPhillips MCBU	**TVD Reference:**	RKB @ 3983.0usft (PD 822)
Project:	Buckeye	**MD Reference:**	RKB @ 3983.0usft (PD 822)
Site:	Ruby Federal	**North Reference:**	Grid
Well:	Ruby Federal 33	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	S-Shape Plan		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Ruby Federal 33 (Plat Bl - plan hits target center - Circle (radius 0.0)	0.00	0.00	5,351.0	-487.0	33.2	668,165.15	663,166.77	32° 50' 8.680 N	103° 48' 7.590 W
Ruby Federal 33 (Target - plan misses target center by 104.7usft at 5389.8usft MD (5351.0 TVD, -487.0 N, 33.2 E) - Circle (radius 150.0)	0.00	0.00	5,351.0	-591.1	43.6	668,060.99	663,177.22	32° 50' 7.649 N	103° 48' 7.474 W

Casing Points

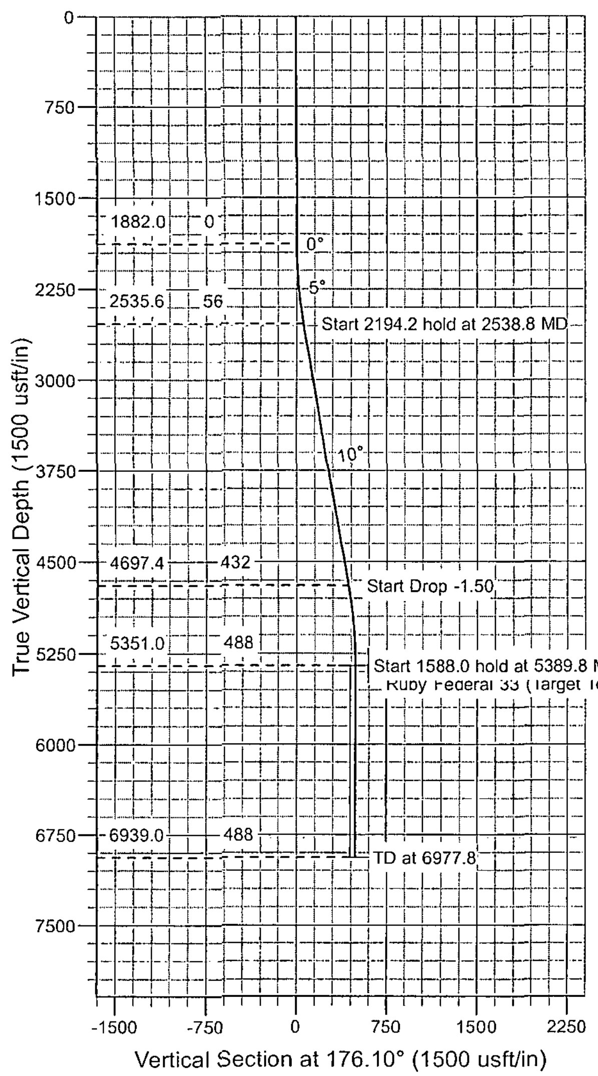
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
79.0	79.0	Conductor	16	20
785.0	785.0	Surface	8-5/8	12-1/4
6,968.0	6,929.2	Production	5-1/2	7-7/8

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
715.0	714.0	Rustler		0.00	
887.0	886.0	Salado		0.00	
1,882.0	1,881.0	Tansill		0.00	
2,082.1	2,081.0	Yates		0.00	
2,373.4	2,371.0	Seven Rivers		0.00	
3,025.4	3,014.0	Queen		0.00	
3,467.9	3,450.0	Grayburg		0.00	
3,827.2	3,804.0	San Andres		0.00	
5,313.8	5,274.0	Glorieta		0.00	
5,389.8	5,350.0	Paddock		0.00	
5,768.8	5,729.0	Blinebry		0.00	
6,777.8	6,738.0	Tubb		0.00	
6,977.8	6,938.0	TD		0.00	

ConocoPhillips

Proposed Directional Well Plan



Project: Buckeye
Site: Ruby Federal
Well: Ruby Federal 33
Wellbore: Original Hole
Design: S-Shape Plan

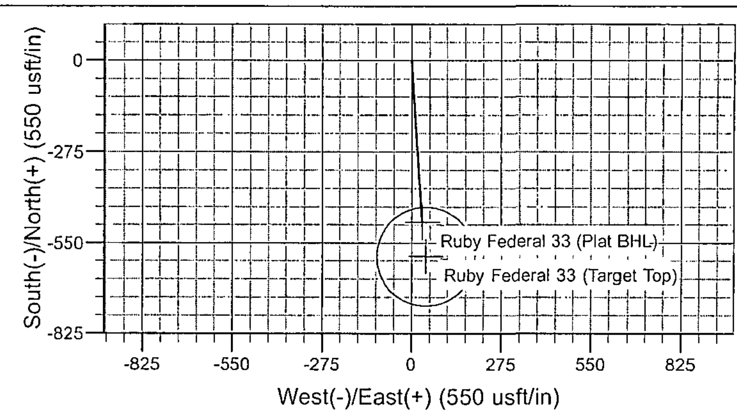
WELL DETAILS: Ruby Federal 33

Ground Level: 3970.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude
0.0	0.0	668652.09	663133.60	32° 50' 13.500 N	103° 48' 7.950 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1882.0	0.00	0.00	1882.0	0.0	0.0	0.00	0.00	0.0	
3	2538.8	9.85	176.10	2535.6	-56.2	3.8	1.50	176.10	56.3	
4	4733.0	9.85	176.10	4697.4	-430.8	29.3	0.00	0.00	431.8	
5	5389.8	0.00	0.00	5351.0	-487.0	33.2	1.50	180.00	488.1	Ruby Federal 33 (Plat BHL)
6	6977.8	0.00	0.00	6939.0	-487.0	33.2	0.00	0.00	488.1	

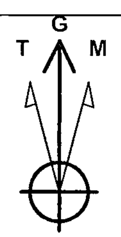


CASING DETAILS

TVD	MD	Name	Size
79.0	79.0	Conductor	16
785.0	785.0	Surface	8-5/8
6929.2	6968.0	Production	5-1/2

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
714.0	715.0	Rustler
886.0	887.0	Salado
1881.0	1882.0	Tansill
2081.0	2082.1	Yates
2371.0	2373.4	Seven Rivers
3014.0	3025.4	Queen
3450.0	3467.9	Grayburg
3804.0	3827.2	San Andres
5274.0	5313.8	Glorieta
5350.0	5389.8	Paddock
5729.0	5768.8	Blinebry
6738.0	6777.8	Tubb
6938.0	6977.8	TD



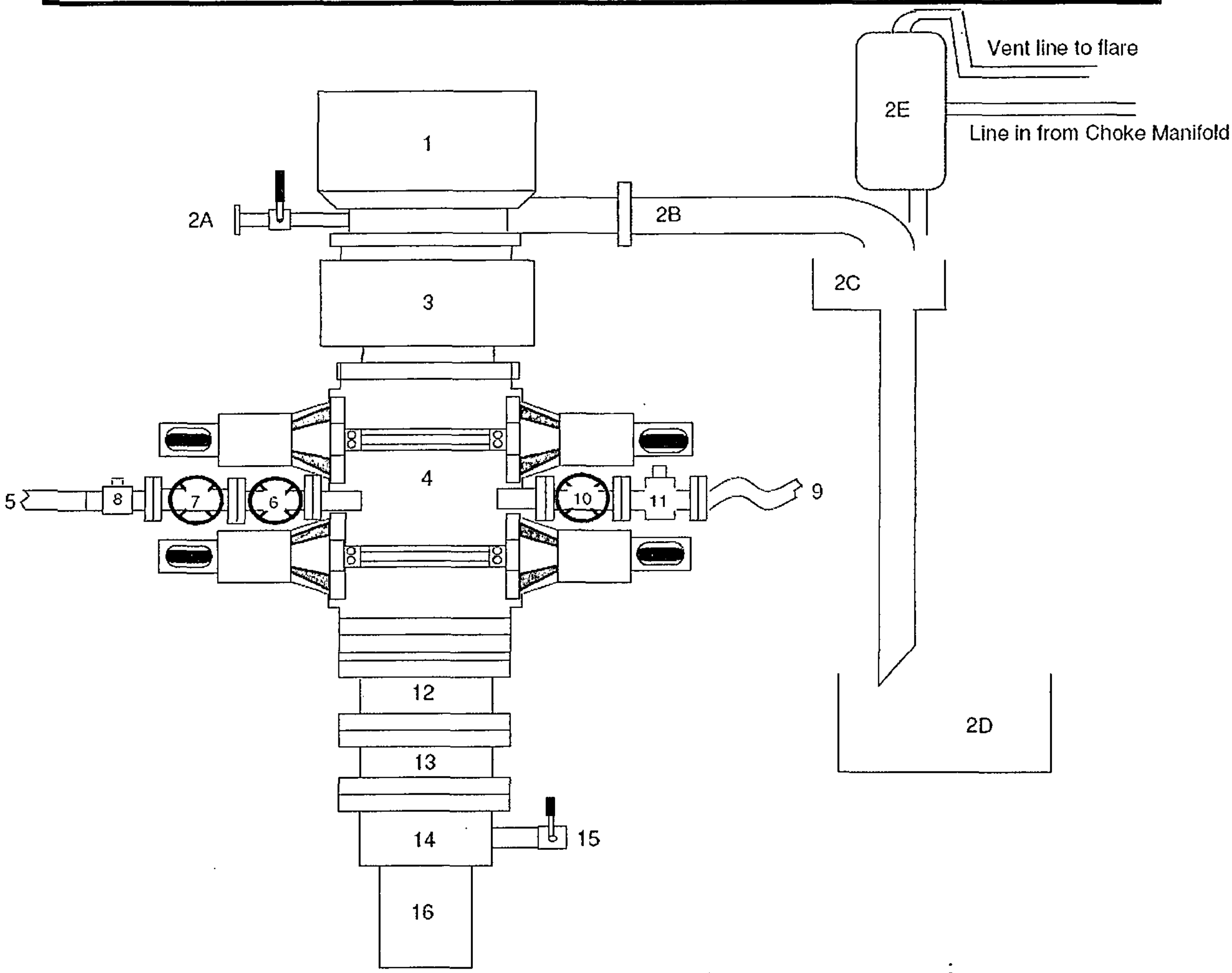
Azimuths to Grid North
True North: -0.29°
Magnetic North: 7.29°

Magnetic Field
Strength: 48713.6snT
Dip Angle: 60.60°
Date: 8/5/2013
Model: BGGM2012

Attachment # 1

BLOWOUT PREVENTER ARRANGEMENT

3M System per Onshore Oil and Gas Order No. 2 utilizing 3M and 5M Rated Equipment



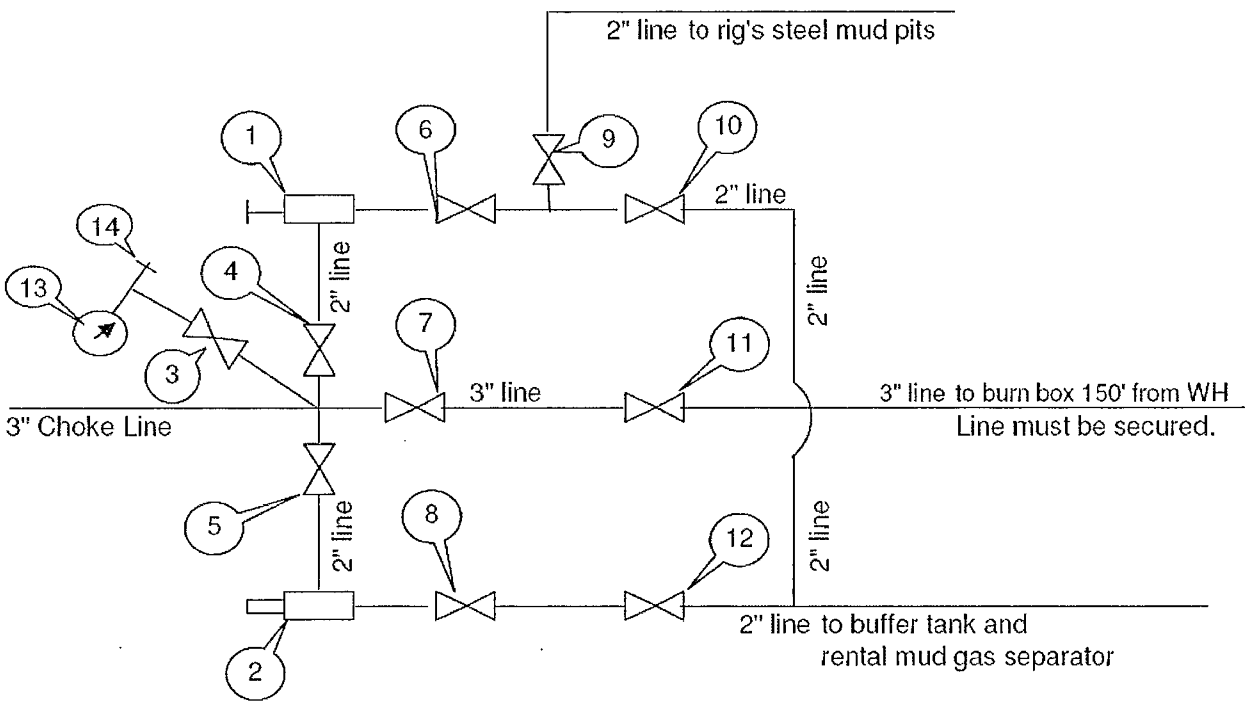
Item	Description
1	Rotating Head, 11"
2A	Fill up Line and Valve
2B	Flow Line (10")
2C	Shale Shakers and Solids Settling Tank
2D	Cuttings Bins for Zero Discharge
2E	Rental Mud Gas Separator with vent line to flare and return line to mud system
3	Annular BOP (11", 3M)
4	Double Ram (11", 3M, equipped with Blind Rams and Pipe Rams)
5	Kill Line (2" flexible hose, 3000 psi WP)
6	Kill Line Valve, Inner (3-1/8", 3000 psi WP)
7	Kill Line Valve, Outer (3-1/8", 3000 psi WP)
8	Kill Line Check Valve (2-1/16", 3000 psi WP
9	Choke Line (5M Stainless Steel Coflex Line, 3-1/8" 3M API Type 6B, 3000 psi WP)
10	Choke Line Valve, Inner (3-1/8", 3000 psi WP)
11	Choke Line Valve, Outer, (Hydraulically operated, 3-1/8", 3000 psi WP)
12	Adapter Flange (11" 5M to 11" 3M)
13	Spacer Spool (11", 5M)
14	Casing Head (11" 5M)
15	Ball Valve and Threaded Nipple on Casing Head Outlet, 2" 5M
16	Surface Casing

Submitted by: James Chen, Drilling Engineer, Mid-Continent Business Unit, ConocoPhillips Company, 25-Sep-2012

Attachment # 2

CHOKE MANIFOLD ARRANGEMENT

3M System per Onshore Oil and Gas Order No. 2 utilizing 3M and 5M Equipment



All Tees must be targeted

Item	Description
1	Manual Adjustable Choke, 2-1/16", 3M
2	Remote Controlled Hydraulically Operated Adjustable Choke, 2-1/16", 3M
3	Gate Valve, 2-1/16" 5M
4	Gate Valve, 2-1/16" 5M
5	Gate Valve, 2-1/16" 5M
6	Gate Valve, 2-1/16" 5M
7	Gate Valve, 3-1/8" 3M
8	Gate Valve, 2-1/16" 5M
9	Gate Valve, 2-1/16" 5M
10	Gate Valve, 2-1/16" 5M
11	Gate Valve, 3-1/8" 3M
12	Gate Valve, 2-1/16" 5M
13	Pressure Gauge
14	2" hammer union tie-in point for BOP Tester

We will test each valve to 3000 psi from the upstream side.

Submitted by:
James Chen
Drilling Engineer, Mid-Continent Business Unit, ConocoPhillips Company
Date: 21-March-2013

Request for Variance

ConocoPhillips Company
Lease Number: NM LC 029405B
Well: Ruby Federal #33
Location: Sec. 18, T17S, R32E
Date: 6/14/2013

Request:

ConocoPhillips Company respectfully requests a variance to install a flexible choke line instead of a straight choke line prescribed in the Onshore Order No. 2, III.A.2.b Minimum standards and enforcement provisions for choke manifold equipment. This request is made under the provision of Onshore Order No. 2, IV Variances from Minimum Standard. The rig to be used to drill this well is equipped with a flexible choke line if the requested variance is approved and determined that the proposed alternative meets the objectives of the applicable minimum standards.

Justifications:

The applicability of the flexible choke line will reduce the number of target tees required to make up from the choke valve to the choke manifold. This configuration will facilitate ease of rig up and BOPE Testing.

Attachments:

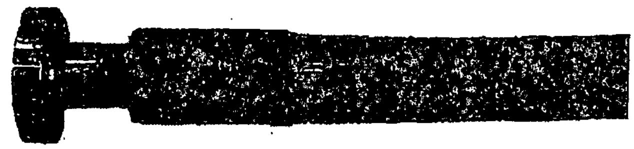
- Attachment # 1 Specification from Manufacturer
- Attachment # 2 Mill & Test Certification from Manufacturer

Contact Information:

Program prepared by:
James Chen
Drilling Engineer, ConocoPhillips Company
Phone (832) 486-2184
Cell (832) 768-1647
Date: 26 September 2012

Attachment # 1

Industrial Products USA, Ltd.



Reliance Eliminator Choke & Kill

This hose can be used as a choke hose which connects the BOP stack to the bleed-off manifold or a kill hose which connects the mud stand pipe to the BOP kill valve.

The Reliance Eliminator Choke & Kill hose contains a specially bonded compounded cover that replaces rubber covered Asbestos, Fibreglass and other fire retardant materials which are prone to damage. This high cut and gouge resistant cover overcomes costly repairs and downtime associated with older designs.

The Reliance Eliminator Choke & Kill hose has been verified by an independent engineer to meet and exceed EUB Directive 36 (700°C for 5 minutes).

Nom. ID		Nom OD		Weight		Min Bend Radius		Max WP	
in.	mm.	in.	mm	lb/ft	kg/m	in.	mm.	psi	Mpa
3	76.2	5.11	129.79	14.5	21.46	48	1219.2	5000	34.47
3-1/2	88.9	5.79	147.06	20.14	29.80	54	1371.6	5000	34.47

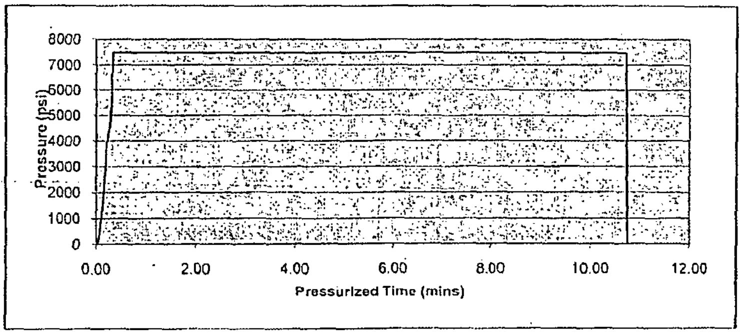
Fittings	Flanges	Hammer Unions	Other
RC4X5055	R35 - 3-1/8 5000# API Type 6B	All Union Configurations	LP Threaded Connectio
RC3X5055	R31 - 3-1/8 3000# API Type 6B		Graylock
RC4X5575			Custom Ends

Attachment # 2

RELIANCE
Industrial Products USA, Ltd.
2030 E. 8th Street, Suite B • Greeley, CO 80631
Ph: (970) 346-3751 • Fax: (970) 353-3168 • *Toll Free:* (866) 771-9739

TEST CERTIFICATE

Customer:	PRECISION DRILLING	Cert No.:	27792
P.O. #:	RIG 822	Date:	9/21/2012
Invoice #:	27792		
Material:	3 1/2" FIREGUARD		
Description:	3 1/2" X 10'		
Coupling 1:	3 1/2" FLANGE R31		
" Serial:			
" Quality:			
Coupling 2:	3 1/2" FLOATING R31		
" Serial:			
" Quality:			
Working Pressure :	3000		
Test Pressure:	7500		
Duration (mins):	10		



Conducted By: FLORES M.
Test Technician

☑ Acceptable
☐ Not Acceptable