

HOBBS OCD

DEC 20 2012

OCD Hobbs

Form 3160-3
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

5. Lease Serial No.
NM LC 029405-B

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

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

8. Lease Name and Well No.
Ruby Federal #20 **<38653>**

9. API Well No.
30-025-40894

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

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

12. County or Parish
Lea

13. State
NM

1a. Type of work: ☒ DRILL ☐ REENTER

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

2. Name of Operator ConocoPhillips Company

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

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

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

At surface UL I, Sec. 18, T17S, R32E; 2310' FSL, 910'FEL

At proposed prod. zone UL I, Sec. 18, T17S, R32E; 2310' FSL, 910'FEL

14. Distance in miles and direction from nearest town or post office*
approximately 3.5 miles south of Maljamar, New Mexico

15. Distance from proposed*
location to nearest
property or lease line, ft.
(Also to nearest drig. unit line, if any)
2310' FSL

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.
430'

19. Proposed Depth
6950' MD/TVD

20. BLM/BIA Bond No. on file
ES0085

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3985' GL

22. Approximate date work will start*
12/15/2012

23. Estimated duration
20 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 **Susan B. Maunder**

Name (Printed/Typed)
Susan B. Maunder

Date **8/10/12**

Title
Senior Regulatory Specialist

Approved by (Signature) **/s/George MacDonell**

Name (Printed/Typed) **/s/George MacDonell**

Date **DEC 18 2012**

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)

Roswell Controlled Water Basin

12/24/12

*(Instructions on page 2)
**Approval Subject to General Requirements
& Special Stipulations Attached**

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

JAN 08 2013

dm

Drilling Plan
ConocoPhillips Company
Maljamar; Yeso, west

Ruby Federal #20

Lea County, New Mexico

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

The ranges of depths for the formation tops, thicknesses, and planned Total Depths for all the wells to be drilled under this Master Drilling Plan are presented in the table below.

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

Formations	Top Depths FT MD	Contents
Quaternary	Surface	Fresh Water
Rustler	726	Anhydrite
Salado (top of salt)	893	Salt
Tansill	1891	Gas, Oil and Water
Yates	2072	Gas, Oil and Water
Seven Rivers	2398	Gas, Oil and Water
Queen	3018	Gas, Oil and Water
Grayburg	3454	Gas, Oil and Water
San Andres	3809	Gas, Oil and Water
Glorieta	5286	Gas, Oil and Water
Paddock	5360	Gas, Oil and Water
Blinberry	5744	Gas, Oil and Water
Tubb	6750	Gas, Oil and Water
Deepest estimated perforation	6750	Deepest estimated perf. is ~ Top of Tubb
Total Depth (maximum)	6950	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.

2. Proposed casing program:

Type	Hole Size	Interval MD RKB (ft)		OD	Wt	Gr	Conn	MIY	Col	Jt Str	Safety Factors Calculated per ConocoPhillips Corporate Criteria		
		From	To								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	751' – 796'	8-5/8	24#	J-55	STC	2950	1370	244	2.68	5.96	1.40
Prod	7-7/8	0	6895' – 6940'	5-1/2	17#	L-80	LTC	7740	6290	338	1.15	2.04	1.40

The casing will be suitable for H₂S Service.

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 Design (Safety) Factors - BLM Criteria:

Type	Depth	Wt	MIY	Col	Jt Str	Drill Fluid	Burst	Collapse	Tensile-Dry	Tens-Bouy
Surface Casing	796	24	2950	1370	244000	8.5	8.41	3.90	12.80	14.71
Production Casing	6940	17	7740	6290	338000	10	2.14	1.74	2.86	3.38

Casing Design (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

Burst Design (Safety) Factors – COP Criteria

The maximum internal (burst) load on the Surface Casing occurs when the surface casing is tested to 1000 psi (pressured up to 1100 psi). 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 Design Factors.

Surface Casing Burst Design Factor = Burst Rating / Maximum Pressure during Casing Pressure Test

Production Casing MAWP for the Fracture Stimulation = Minimum Internal Yield / Production Casing Burst Design Factor

Surface Casing Burst Design Factor:

Burst Design Factor (Casing Pressure Test) = 2950 psi / 1100 psi = 2.68

Production Casing Burst Design Factor:

MAWP for the Fracture Stimulation = 7740 psi / 1.15 = 6730

Collapse Design (Safety) Factors – COP Criteria

The maximum collapse load on the Surface Casing occurs when the pressure is released after bumping the plug on the surface casing cement job. The maximum collapse load on the production casing occurs with the well is pumped off on production. We plan to cement the production casing to surface, and therefore the external pressure profile on the production casing should be equal to the pore pressure of the horizons on the outside of the casing which we estimate to be 8.55 ppg gradient.

Surface Casing Collapse Design Factor = Collapse Rating / (Cement Column Hydrostatic Pressure – Displacement Fluid Hydrostatic Pressure)

Production Casing Collapse Design Factor = Collapse Rating / Maximum Possible Pore Pressure

Surface Casing Collapse Design Factor:

Collapse Design Factor = 1370 psi / [(300 ft x 0.052 x 14.8 ppg) + (496 ft x 0.052 x 13.6 ppg) - (796 ft x 0.052 x 8.5 ppg)]

Collapse Design Factor = 1370 psi / 230 psi = 5.96

Production Casing Collapse Design Factor:

Collapse Design Factor = 6290 psi / (8.55 ppg x 6940 ft) = 6290 psi / 3086 psi = 2.04

Axial Design (Safety) Factors – COP Criteria

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

Maximum Allowable Hookload = Joint Strength Rating / Axial Design Factor

Overpull Margin = Maximum Allowable Hook Load - Air Wt of the String

Surface Casing (Ult. Tensile):

Maximum Allowable Hookload = 244000 lbs / 1.4 = 174286 lbs

Overpull Margin = 174286 lbs - (796 ft x 24 lb/ft) = 155182 lbs

Production Casing (Ult. Tensile):

Maximum Allowable Hookload = 338000 / 1.4 = 241429 lbs

Overpull Margin = 241429 lbs - (6940 ft x 17 lb/ft) = 123449 lbs

3. Proposed cementing program:

16" or 13-3/8" Conductor:

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: 8-5/8" 24# J-55 STC

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	451' – 496'	13.6	350	595	4%Bentonite 2%CaCl ₂ .125%Polyflake 0.2% antifoam Excess =230% based on gauge hole volume	1.70
Tail	Class C	451' – 496'	751' – 796'	14.8	200	268	1% CaCl ₂ 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.

Cement Option 2 Insert to Application for Permit to Drill

ConocoPhillips respectfully requests an additional option to our cementing program. The intention of this alternative is to accommodate additional isolation of the Grayburg-San Andres formation with cement.

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

The intention for cementing of the Production Casing is to:

- Place 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'	6800' – 7000'	13.2	1300	1820	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 for each alternative 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.

Contact Information:

Request proposed 5 December 2012 by:
James Chen
Drilling Engineer, ConocoPhillips Company
Phone (832) 486-2184
Cell (832) 768-1647

5-1/2" Production Casing & Cementing Program: 5-1/2" 17# L-80 LTC

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	1000	2640	10% Bentonite 8 lbs/sx Salt 0.4% Fluid loss additive 0.125% LCM if needed Excess = 220% or more if needed based on gauge hole volume	2.64
Tail	Class H	5200'	6895' – 6940'	16.4	650	696	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.

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 nipping 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.**

6. Anticipated starting date and duration of operations:

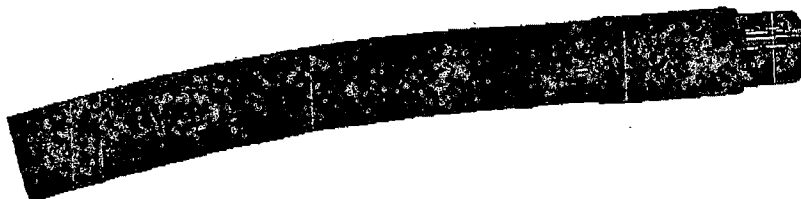
Well pad and road constructions will begin as soon as all agency approvals are obtained. Anticipated date to drill these wells begin from late 2012 through the 2013 after receiving approval of the APD.

Attachments:

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

Contact Information:

Program prepared by:
James Chen
Drilling Engineer, ConocoPhillips Company
Phone (832) 486-2184
Cell (832) 768-1647
Date: 17 July 2012



Reliance Eliminator Choke & Kill 3000 PSI

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.

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	4.53	115.06	8.99	13.31	30	762.0	3000	20.68
3-1/2	88.9	5.00	127	11.01	16.29	36	914.4	3000	20.68



Fittings

RC4X5055
RC3X5055
RC4X5575

Flanges

R35 - 3-1/8 5000# API Type 6B
R31 - 3-1/8 3000# API Type 6B

Hammer Unions

All Union Configurations

Other

LP Threaded Connection
Graylock
Custom Ends

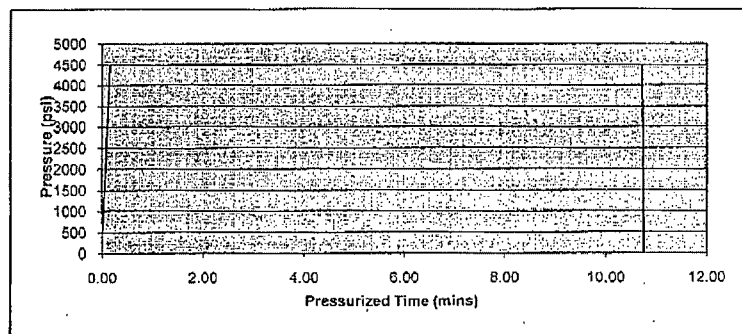
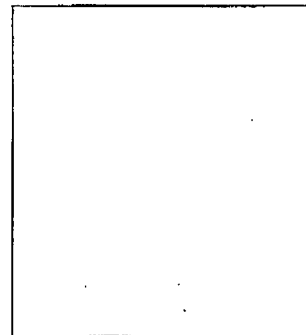


2030 E. 8th Street, Suite B • Greeley, CO 80631
Ph: (970) 346-3751 • Fax: (970) 353-3168 • Toll Free: (866) 771-9739

TEST CERTIFICATE

Customer: PERCISION DRILLING
P.O. #: 73011111
Invoice #: 25279
Material: 3 1/2" FIRE GUARD
Description: 2" X 30'
Coupling 1: FLOATING FLANGE
" Serial:
" Quality:
Coupling 2: FLANGE
" Serial:
" Quality:
Working Pressure : 3000
Test Pressure: 4500
Duration (mins): 10

Cert No.: 25279T01
Date: 6/29/2012

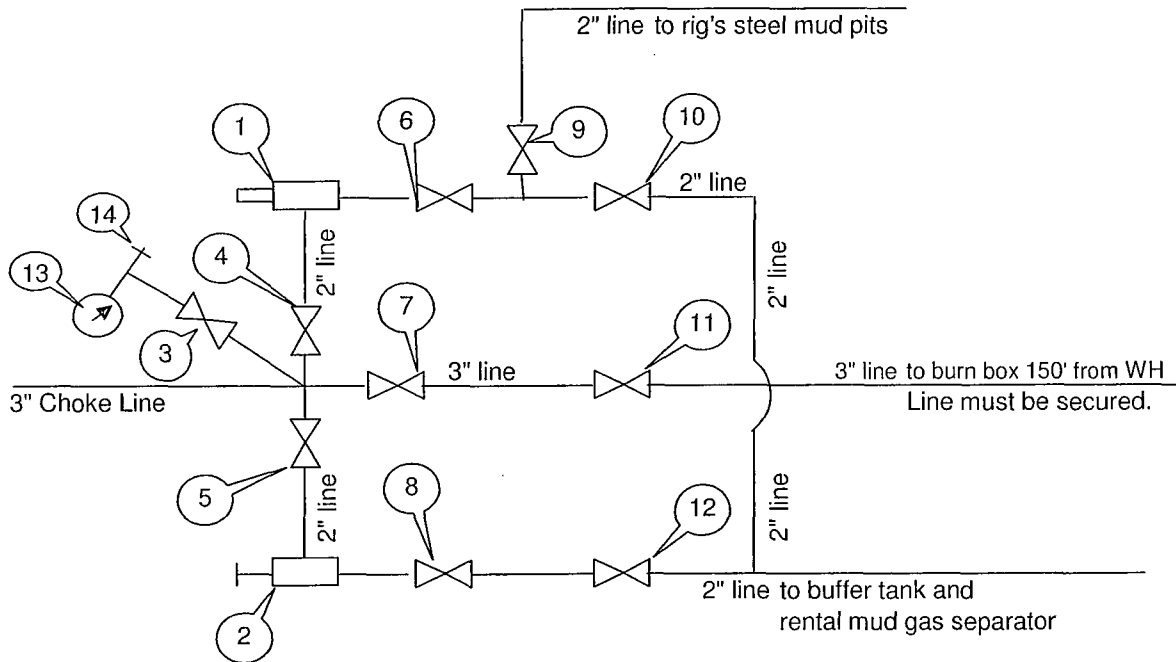


Conducted By: FLORES M.
Test Technician

☒ Acceptable
☐ Not Acceptable

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	Remote Controlled Hydraulically Operated Adjustable Choke, 2-1/16", 3M
2	Manual 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.

Drawn by:

Steven O. Moore

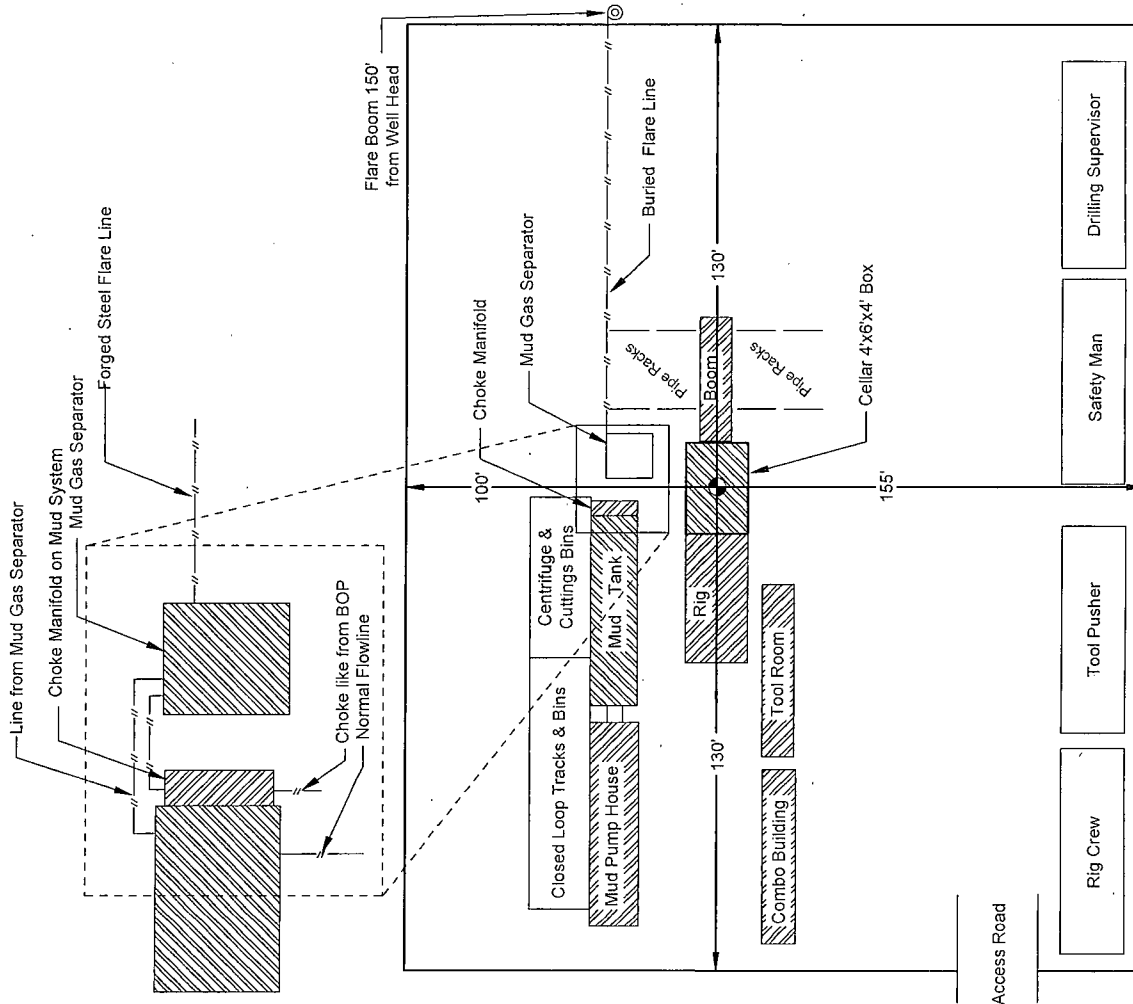
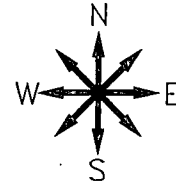
Chief Drilling Engineer, Mid-Continent Business Unit, ConocoPhillips Company

Date: 14-Sept-2012

RIG LAYOUT

Location Schematic and Rig Layout for Closed Loop System

(picture note to scale)



RUBY FEDERAL #20

Located 2310' FSL and 910' FEL

Section 18, Township 17 South, Range 32 East,
N.M.P.M., Lea County, New Mexico.

**basin
surveys**
focused on excellence
in the oilfield

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

W.O. Number: JMS 26896

Survey Date: 07-09-2012

Scale: 1" = NONE

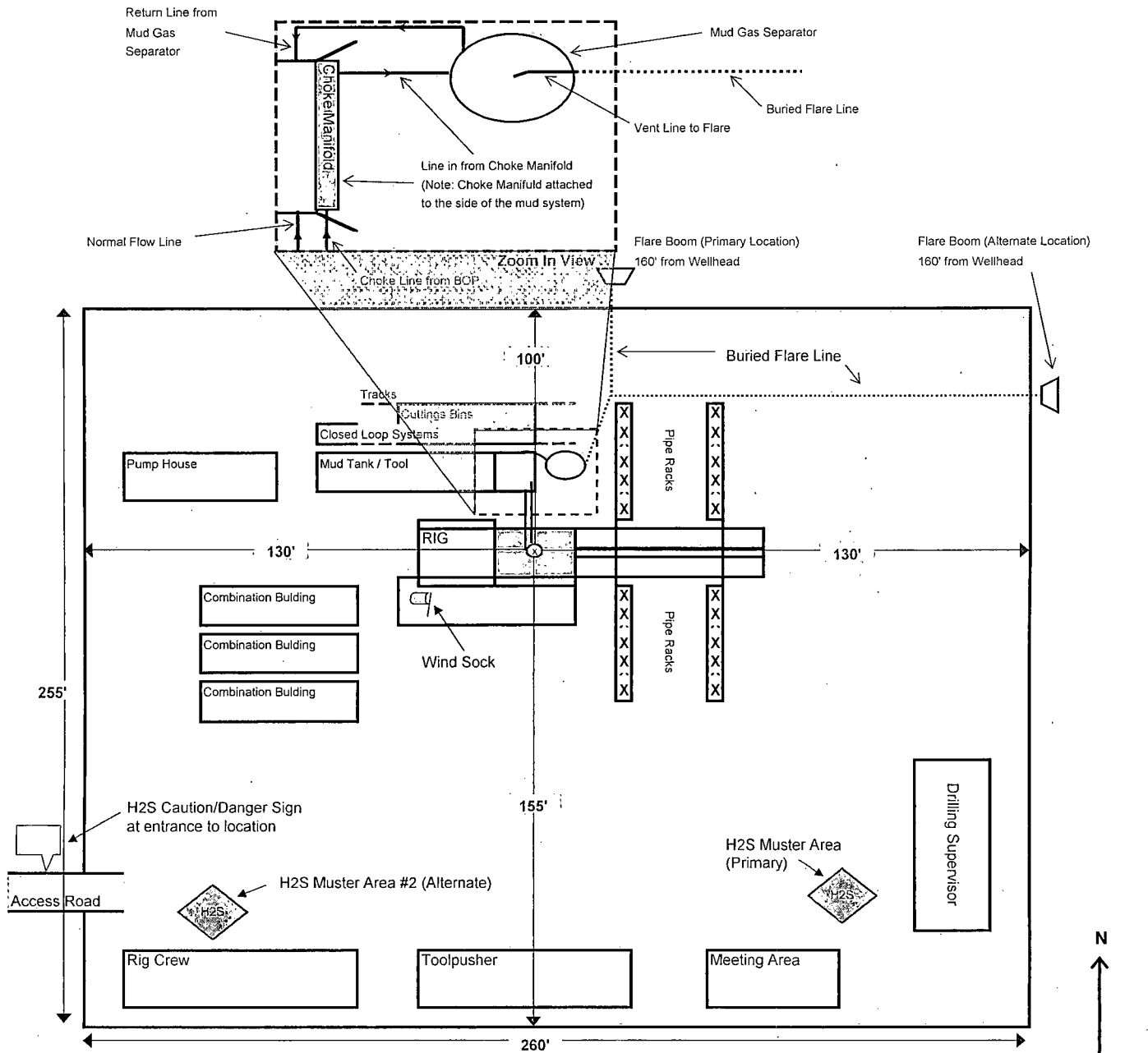
Date: 07-12-2012

ConocoPhillips

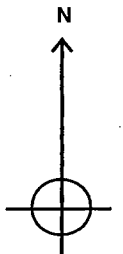
Sheet 8 of 10 Sheets

ConocoPhillips

Location Schematic and Rig Layout
for Closed Loop System
Precision #822
(PICTURE NOT TO SCALE)



Drawn by:
James Chen
Drilling Engineer, ConocoPhillips Company
Date: 17-July-2012



Closed Loop System Design, Operating and Maintenance, and Closure Plan

ConocoPhillips Company

Well: Ruby Federal #20

Location: Sec. 18, T17S, R32E

Date: 07-30-12

ConocoPhillips proposes the following plan for design, operating and maintenance, and closure of our proposed closed loop system for the above named well:

1. We propose to use a closed loop system with steel pits, haul-off bins, and frac tanks for containing all cuttings, solids, mud, water, brine, and liquids. We will not dig a pit, nor will we use a drying pad, nor will we build an earth pit above ground level, nor will we dispose of or bury any waste on location.

All drilling waste and all drilling fluids (fresh water, brine, mud, cuttings, drill solids, cement returns, and any other liquid or solid that may be involved) will be contained on location in the rig's steel pits or in haul-off bins or in frac tanks as needed. The intent is as follows:

- We propose to use the rigs's steel pits for containing and maintaining the drilling fluids.
- We propose to remove cuttings and drilled solids from the mud by using solids control equipment and to contain such cuttings and drilled solids on location in haul-off bins.
- We propose that any excess water that may need to be stored on location will be stored in tanks.

The closed loop system components will be inspected daily by each tour and any need repairs will be made immediately. Any leak in the system will be repaired immediately, and any spilled liquids and/or solids will be cleaned immediately, and the area where any such spill occurred will be remediated immediately.

2. Cuttings and solids will be removed from location in haul-off bins by an authorized contractor and disposed of at an authorized facility. For this well, we propose the following disposal facility:

Controlled Recovery Inc,
4507 West Carlsbad Hwy, Hobbs, NM 88240,
P.O. Box 388; Hobbs, New Mexico 88241
Toll Free Phone: 877.505.4274, Local Phone Number: 432.638.4076

The physical address for the plant where the disposal facility is located is Highway 62/180 at mile marker 66 (33 miles East of Hobbs, NM and 32 miles West of Carlsbad, NM).

The Permit Number for CRI is R9166

A photograph showing the type of haul-off bins that will be used is attached.

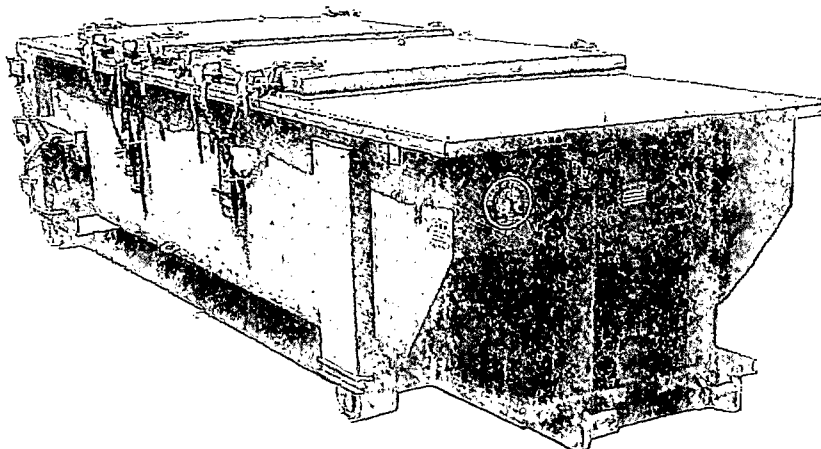
3. Mud will be transported by vacuum truck and disposed of at Controlled Recovery Inc at the facility described above.
4. Fresh Water and Brine will be hauled off by vacuum truck and disposed of at an authorized salt water disposal well. We propose the following for disposal of fresh water and brine as needed:
 - Nabors Well Services Company, 3221 NW County Rd; Hobbs, NM 88240, PO 5208 Hobbs, NM, 88241, Permit SWD 092. (Well Location: **Section 3, T19S R37E**)
 - Basic Energy Services, P.O. Box 1869; Eunice, NM 88231 Phone Number: 575.394.2545, Facility located at Hwy 18, Mile Marker 19; Eunice, NM.

James Chen
Drilling Engineer
Office: 832.486.2184
Cell: 832.678.1647

SPECIFICATIONS

Heavy Duty Split Metal Rolling Lid

FLOOR: 3/16" PL one piece
CROSS MEMBER: 3x4" channel 16" on center
WALLS: 3/16" PL solid welded with tubing top inside liner hooks
DOOR: 3/16" PL with tubing frame
FRONT: 3/16" PL slant formed
PICK UP: Standard cable with 2" x 6" x 1/4" rails, gusset at each crossmember
WHEELS: 10 DIA x 9 long with rease fittings
DOOR LATCH: 3 Independent ratchet binders with chains, vertical second latch
GASKETS: Extruded rubber seal with metal retainers
WELDS: All welds continuous except sub-structure crossmembers
FINISH: Coated inside and out with direct to metal, rust inhibiting acrylic enamel color coat
HYDROTESTING: Full capacity static test
DIMENSIONS: 22'-11" long (21'-8" inside), 99" wide (88" inside), see drawing for height
OPTIONS: Steel grit blast and special paint, Ampliroll, Hell and Dino pickup
ROOF: 3/16" PL roof panels with tubing and channel support frame
LIDS: (2) 68" x 90" metal rolling lids spring loaded, self raising
ROLLERS: 4" V-groove rollers with delrin bearings and grease fittings
OPENING: (2) 60" x 82" openings with 8" divider centered on container
LATCH: (2) independent ratchet binders with chains per lid
GASKETS: Extruded rubber seal with metal retainers



CONT.	A	B
20 YD	41	53
25 YD	53	65
30 YD	65	77

