Form 3160-3
(August 2007)

OPERATOR'S COPY HOBBS OCD

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APR 18 2012

APPLICATION FOR PERMIT TO DRILL OR REENTER RECEIVED

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

5. Lease Serial No.
NMLC060329

6. If Indian, Allotee or Tribe Name

1a. Type of work: [X] DRILL [ ] REENTER

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

1b. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other [ ] Single Zone [ ] Multiple Zone

8. Lease Name and Well No. 38742
Emerald Federal 2

2. Name of Operator
ConocoPhillips Company 229137

9. API Well No.
30-025-40520

3a. Address 3300 N "A" St, Bldg 6 Midland, TX 79705

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 P Sec 17, T 17S, R 32E, 990 FSL 665 FEL
At proposed prod. zone UL P, Sec 17, T 17S, R 32E, 990 FSL 915 FEL

11. Sec., T. R. M. or Blk. and Survey or Area
Sec 17, T 17S, R 32E

14. Distance in miles and direction from nearest town or post office*
2.5 miles south of Maljamar, NM

12. County or Parish
Lea

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	915' FEL	16. No. of acres in lease 323.76	17. Spacing Unit dedicated to this well 40
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	990' West of JG State #15	19. Proposed Depth 7277' TVD	20. BLM/BIA Bond No. on file ES0085
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 4035' GR		22. Approximate date work will start* 05/04/2012	23. Estimated duration 10 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	Name *(Printed/Typed)* Brian D Maiorino	Date 01/20/2012
Title Regulatory Specialist		
Approved by *(Signature)*	Name *(Printed/Typed)* /s/ Don Peterson	Date 4/17/12
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

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

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

(Continued on page 2)

*(Instructions on page 2)

Roswell Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL
APR 19 2012

Drilling Plan
ConocoPhillips Company
Maljamar; Yeso, west

Emerald Federal 2

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 14' above Ground Level).

Formations	Top Depth FT TVD	Top Depths FT MD	Contents
Quaternary	Surface	Surface	Fresh Water
Rustler	788	788	Anhydrite
Salado (top of salt)	971	971	Salt
Tansill (base of salt)	1982	1982	Gas, Oil and Water
Yates	2118	2118	Gas, Oil and Water
Seven Rivers	2453	2453	Gas, Oil and Water
Queen	3081	3082	Gas, Oil and Water
Grayburg	3499	3502	Gas, Oil and Water
San Andres	3880	3885	Gas, Oil and Water
Glorieta	5357	5369	Gas, Oil and Water
Paddock	5438	5450	Gas, Oil and Water
Blinebry	5784	5796	Gas, Oil and Water
Tubb	6817	6829	Gas, Oil and Water
Drinkard	7077	7089	Gas, Oil and Water
Deepest estimated perforation	7077	7089	Deepest estimated perf. is ~ 0' – 10' above Top of Drinkard
Total Depth (maximum)	7277	7289	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 BLM Criteria		
	(in)	From	To	(inches)	(lb/ft)			(psi)	(psi)	(klbs)	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	813' – 858'	8-5/8	24#	J-55	STC	2950	1370	244	7.78	3.61	11.8 / 13.6
Prod	7-7/8	0	7234' – 7279'	5-1/2	17#	L-80	LTC	7740	6290	338	2.04	1.66	2.73 / 3.22

The casing will be suitable for H_2S 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.

Joint Strength Design (Safety) Factors – BLM Criteria

Joint Strength Design (Safety) Factor: SFt
SFt = Fj / Wt;
Where

- Fj is the rated pipe Joint Strength in pounds (lbs)
- Wt is the weight of the casing string in pounds (lbs)

The Minimum Acceptable Joint Strength Design (Safety) Factor SFT = 1.6 dry or 1.8 buoyant

Surface Casing:
SFj Dry = 244,000 lbs / (858 ft x 24 lb/ft) = 244,000 lbs / 20592 lbs = 11.8 Dry
SFj Bouyant = 244,000 lbs / [(858 ft x 24 lb/ft) (1 - 8.5/65.5)] = 244,000 lbs / [20592 lbs x 0.870] = 13.6 Buoyant
Production Casing:
SFj Dry = 338,000 lbs / (7279 ft x 17 lb/ft) = 338,000 lbs / 123743 lbs = 2.73 Dry
SFj Bouyant = 338,000 lbs / [(7279 ft x 17 lb/ft) (1 - 10.0/65.5)] = 338,000 lbs / [123743 lbs x 0.847] = 3.22 Buoyant

Collapse Design (Safety) Factors – BLM Criteria

Collapse Design (Safety) Factor: SFc
SFc = Pc / (MW x .052 x Ls)
Where

- Pc is the rated pipe Collapse Pressure in pounds per square inch (psi)
- MW is mud weight in pounds per gallon (ppg)
- Ls is the length of the string in feet (ft)

The Minimum Acceptable Collapse Design (Safety) Factor SFc = 1.125

Surface Casing:
SFc = 1370 psi / (8.5 ppg x .052 x 858 ft) = 1370 psi / 379 psi = 3.61
Production Casing:
SFc = 6290 psi / (10 ppg x .052 x 7279 ft) = 6290 psi / 3785 psi = 1.66

Burst Design (Safety) Factors – BLM Criteria

Burst Design (Safety) Factor: SFb
SFb = Pi / BHP
Where

- Pi is the rated pipe Burst (Minimum Internal Yield) Pressure in pounds per square inch (psi)
- BHP is bottom hole pressure in pounds per square inch (psi)

The Minimum Acceptable Burst Design (Safety) Factor SFb = 1.0

Surface Casing:
SFb = 2950 psi / (8.5 ppg x .052 x 858 ft) = 2950 psi / 379 psi = 7.78
Production Casing:
SFb = 7740 psi / (10 ppg x .052 x 7279 ft) = 7740 psi / 3785 psi = 2.04

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	513' – 558'	13.6	350	595	4%Bentonite 2%CaCl2 .125%Polyflake 0.2% antifoam Excess =230% based on gauge hole volume	1.70
Tail	Class C	513' – 558'	813' – 858'	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: 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'	7234' – 7279'	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 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.**

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	8.5 – 9.0	28 – 40	N.C.	N.C.	120 – 160
Surface Casing Point to TD	Brine (Saturated $NaCl_2$)	10	29	N.C.	10 – 11	400 – 750
Conversion to Mud at TD	Brine Based Mud ($NaCl_2$)	10	34 – 45	5 – 10	10 – 11	0 – 750

Drilling mud containing H2S shall be degassed in accordance with API RP-49, item 5.14. The gases shall be piped into the flare system. Gas detection equipment and pit level flow monitoring equipment will be on location. ConocoPhillips Company will maintain sufficient mud and weighting material on location at all times.

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. Also, we propose an option to not mud up leaving only brine in the hole.

Logging, Coring, and Testing Program: See COA

a. No drill stem tests will be done
b. No mud logging is planned
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)

6. 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

7. 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 early 2012 through the end 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: January 25, 2012

ConocoPhillips

ConocoPhillips MCBU

Buckeye
Emerald Federal
Emerald Federal 2

Original Hole

Plan: Plan #1

Standard Planning Report

23 January, 2012

Database:	EDM Central Planning	**Local Co-ordinate Reference:**	Well Emerald Federal 2
Company:	ConocoPhillips MCBU	**TVD Reference:**	RKB @ 4047.0ft (PD 194)
Project:	Buckeye	**MD Reference:**	RKB @ 4047.0ft (PD 194)
Site:	Emerald Federal	**North Reference:**	Grid
Well:	Emerald Federal 2	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan #1		

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		

Site Emerald Federal, New Mexico, East

Site Position:		**Northing:**	666,142.94 ft	**Latitude:**	32° 49' 48.382 N
From:	Lat/Long	**Easting:**	668,872.51 ft	**Longitude:**	103° 47' 0 841 W
Position Uncertainty:	3.5 ft	**Slot Radius:**	8"	**Grid Convergence:**	0.30 °

Well Emerald Federal 2, S-Shape Directional Well

Well Position	**+N/-S**	0.0 ft	**Northing:**	666,110.80 ft	**Latitude:**	32° 49' 48.034 N
	+E/-W	0.0 ft	**Easting:**	669,446.70 ft	**Longitude:**	103° 46' 54.114 W
Position Uncertainty		3.5 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,033.0 ft

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2011	12/20/2011	7.75	60.67	48,913

Design Plan #1

Audit Notes:

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

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	270.00

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0 0	0.00	0.00	0.00	0 00	
2,659.0	0.00	0.00	2,659.0	0.0	0 0	0.00	0.00	0.00	0.00	
3,059.0	6.00	270.00	3,058 3	0.0	-20.9	1.50	1 50	0.00	270.00	
5,050.4	6.00	270.00	5,038.7	0.0	-229.1	0.00	0.00	0.00	0.00	
5,450.4	0.00	0.00	5,438.0	0.0	-250.0	1.50	-1.50	0.00	180.00	Emerald Federal 2 (T
7,289.4	0.00	0.00	7,277.0	0.0	-250 0	0.00	0.00	0.00	0.00	Emerald Federal 2 (BI

Database:	EDM Central Planning	**Local Co-ordinate Reference:**	Well Emerald Federal 2
Company:	ConocoPhillips MCBU	**TVD Reference:**	RKB @ 4047.0ft (PD 194)
Project:	Buckeye	**MD Reference:**	RKB @ 4047.0ft (PD 194)
Site:	Emerald Federal	**North Reference:**	Grid
Well:	Emerald Federal 2	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
788.0	0.00	0.00	788.0	0.0	0.0	0.0	0.00	0.00	0.00
Rustler									
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
813.0	0.00	0.00	813.0	0.0	0.0	0.0	0.00	0.00	0.00
Surface									
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
971.0	0.00	0.00	971.0	0.0	0.0	0.0	0.00	0.00	0.00
Salado									
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,982.0	0.00	0.00	1,982.0	0.0	0.0	0.0	0.00	0.00	0.00
Tansill									
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,118.0	0.00	0.00	2,118.0	0.0	0.0	0.0	0.00	0.00	0.00
Yates									
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,453.0	0.00	0.00	2,453.0	0.0	0.0	0.0	0.00	0.00	0.00
Seven Rivers									
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,659.0	0.00	0.00	2,659.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.61	270.00	2,700.0	0.0	-0.2	0.2	1.50	1.50	0.00
2,800.0	2.11	270.00	2,800.0	0.0	-2.6	2.6	1.50	1.50	0.00
2,900.0	3.61	270.00	2,899.8	0.0	-7.6	7.6	1.50	1.50	0.00
3,000.0	5.11	270.00	2,999.5	0.0	-15.2	15.2	1.50	1.50	0.00
3,059.0	6.00	270.00	3,058.3	0.0	-20.9	20.9	1.50	1.50	0.00
3,081.9	6.00	270.00	3,081.0	0.0	-23.3	23.3	0.00	0.00	0.00
Queen									
3,100.0	6.00	270.00	3,099.0	0.0	-25.2	25.2	0.00	0.00	0.00
3,200.0	6.00	270.00	3,198.5	0.0	-35.7	35.7	0.00	0.00	0.00
3,300.0	6.00	270.00	3,297.9	0.0	-46.1	46.1	0.00	0.00	0.00
3,400.0	6.00	270.00	3,397.4	0.0	-56.6	56.6	0.00	0.00	0.00
3,500.0	6.00	270.00	3,496.9	0.0	-67.0	67.0	0.00	0.00	0.00
3,502.2	6.00	270.00	3,499.0	0.0	-67.2	67.2	0.00	0.00	0.00

Database:	EDM Central Planning	**Local Co-ordinate Reference:**	Well Emerald Federal 2
Company:	ConocoPhillips MCBU	**TVD Reference:**	RKB @ 4047.0ft (PD 194)
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Site:	Emerald Federal	**North Reference:**	Grid
Well:	Emerald Federal 2	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Grayburg									
3,600.0	6.00	270.00	3,596.3	0.0	-77.5	77.5	0.00	0.00	0.00
3,700.0	6.00	270.00	3,695.8	0.0	-87.9	87.9	0.00	0.00	0.00
3,800.0	6.00	270.00	3,795.2	0.0	-98.4	98.4	0.00	0.00	0.00
3,885.3	6.00	270.00	3,880.0	0.0	-107.3	107.3	0.00	0.00	0.00
San Andres									
3,900.0	6.00	270.00	3,894.7	0.0	-108.8	108.8	0.00	0.00	0.00
4,000.0	6.00	270.00	3,994.1	0.0	-119.3	119.3	0.00	0.00	0.00
4,100.0	6.00	270.00	4,093.6	0.0	-129 7	129.7	0.00	0.00	0.00
4,200.0	6.00	270.00	4,193.0	0.0	-140.2	140.2	0.00	0.00	0.00
4,300.0	6.00	270.00	4,292.5	0.0	-150 6	150.6	0.00	0.00	0.00
4,400.0	6.00	270.00	4,391.9	0.0	-161.1	161.1	0.00	0.00	0.00
4,500.0	6.00	270.00	4,491.4	0.0	-171.5	171.5	0.00	0.00	0.00
4,600.0	6.00	270.00	4,590.8	0.0	-182.0	182.0	0.00	0.00	0.00
4,700.0	6.00	270.00	4,690.3	0.0	-192.5	192.5	0.00	0.00	0.00
4,800.0	6.00	270.00	4,789.7	0.0	-202.9	202.9	0.00	0.00	0.00
4,900.0	6.00	270.00	4,889.2	0.0	-213.4	213.4	0.00	0.00	0 00
5,000.0	6 00	270.00	4,988.6	0.0	-223.8	223.8	0.00	0.00	0.00
5,050.4	6.00	270.00	5,038.7	0.0	-229.1	229.1	0.00	0.00	0.00
5,100.0	5.26	270.00	5,088.1	0.0	-233.9	233.9	1.50	-1.50	0.00
5,200.0	3.76	270 00	5,187.8	0.0	-241.8	241.8	1.50	-1.50	0.00
5,300.0	2.26	270.00	5,287.7	0.0	-247.0	247.0	1.50	-1.50	0.00
5,369.4	1.22	270.00	5,357.0	0.0	-249.1	249.1	1.50	-1.50	0.00
Glorieta									
5,400.0	0.76	270.00	5,387.6	0.0	-249.7	249.7	1.50	-1.50	0.00
5,450.4	0.00	0.00	5,438.0	0.0	-250.0	250.0	1.50	-1.50	0.00
Paddock - Emerald Federal 2 (Top of Target)									
5,500.0	0.00	0.00	5,487.6	0.0	-250.0	250.0	0.00	0.00	0.00
5,600.0	0.00	0 00	5,587.6	0.0	-250.0	250 0	0.00	0 00	0.00
5,700.0	0.00	0 00	5,687.6	0.0	-250.0	250.0	0.00	0.00	0.00
5,796.4	0.00	0.00	5,784.0	0.0	-250.0	250.0	0.00	0.00	0.00
Blinebry									
5,800.0	0.00	0.00	5,787.6	0.0	-250 0	250.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,887.6	0.0	-250.0	250.0	0.00	0.00	0.00
6,000.0	0.00	0.00	5,987.6	0.0	-250.0	250.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,087.6	0.0	-250 0	250.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,187 6	0.0	-250.0	250.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,287.6	0.0	-250.0	250.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,387.6	0.0	-250.0	250.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,487.6	0.0	-250 0	250.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,587.6	0.0	-250.0	250.0	0 00	0.00	0.00
6,700.0	0.00	0.00	6,687.6	0.0	-250.0	250.0	0.00	0.00	0 00
6,800.0	0.00	0 00	6,787.6	0.0	-250 0	250.0	0 00	0.00	0.00
6,829.4	0.00	0.00	6,817.0	0.0	-250.0	250.0	0.00	0.00	0.00
Tubb									
6,900.0	0 00	0.00	6,887.6	0.0	-250.0	250.0	0.00	0 00	0.00
7,000.0	0.00	0.00	6,987.6	0.0	-250.0	250.0	0.00	0.00	0.00
7,089.4	0.00	0.00	7,077.0	0.0	-250.0	250.0	0.00	0.00	0 00
Drinkard									
7,100.0	0.00	0.00	7,087.6	0.0	-250.0	250.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,187.6	0.0	-250.0	250.0	0.00	0.00	0.00
7,279.0	0 00	0 00	7,266.6	0.0	-250.0	250 0	0.00	0 00	0.00

Database:	EDM Central Planning	**Local Co-ordinate Reference:**	Well Emerald Federal 2
Company:	ConocoPhillips MCBU	**TVD Reference:**	RKB @ 4047 0ft (PD 194)
Project:	Buckeye	**MD Reference:**	RKB @ 4047.0ft (PD 194)
Site:	Emerald Federal	**North Reference:**	Grid
Well:	Emerald Federal 2	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Production									
7,289.4	0.00	0.00	7,277.0	0.0	-250.0	250.0	0.00	0 00	0 00
Emerald Federal 2 (BHL)									

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Emerald Federal 2 (Top - plan hits target center - Circle (radius 75.0)	0.00	0.00	5,438.0	0.0	-250.0	666,110.80	669,196.70	32° 49' 48.047 N	103° 46' 57.044 W
Emerald Federal 2 (BHL - plan hits target center - Circle (radius 75.0)	0.00	0.00	7,277.0	0.0	-250.0	666,110.80	669,196 70	32° 49' 48.047 N	103° 46' 57.044 W

Casing Points

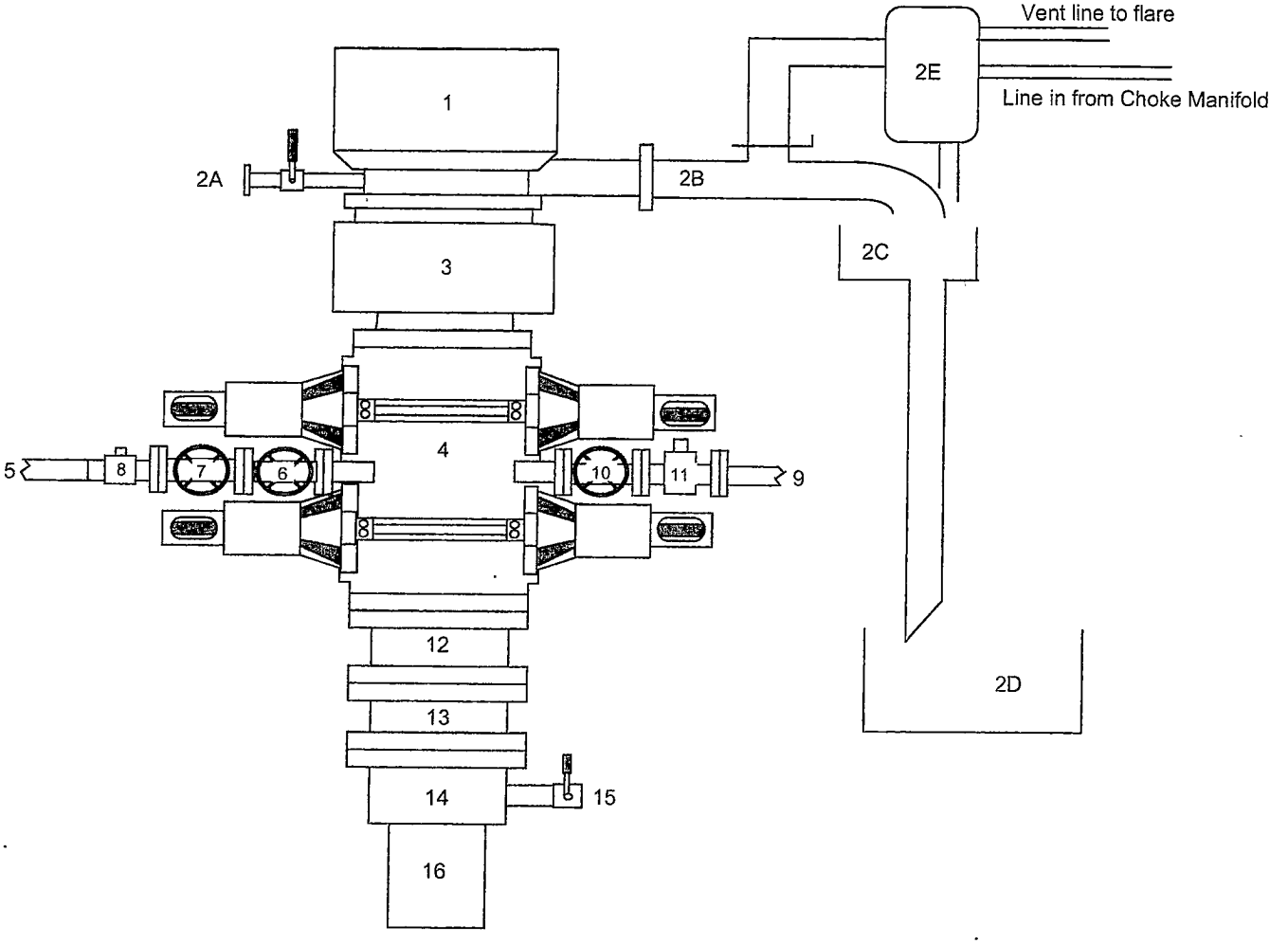
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,279.0	7,266.6	Production	5-1/2	7-7/8
813.0	813 0	Surface	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,982.0	1,982.0	Tansill		0.00	
5,369.4	5,357.0	Glorieta		0.00	
5,796.4	5,784.0	Blinebry		0.00	
2,453.0	2,453.0	Seven Rivers		0 00	
2,118.0	2,118.0	Yates		0.00	
6,829.4	6,817.0	Tubb		0.00	
3,885 3	3,880.0	San Andres		0 00	
788.0	788.0	Rustler		0.00	
3,081.9	3,081.0	Queen		0.00	
7,089.4	7,077.0	Drinkard		0.00	
5,450.4	5,438.0	Paddock		0.00	
3,502 2	3,499.0	Grayburg		0.00	
971.0	971.0	Salado		0.00	

BLOWOUT PREVENTER ARRANGEMENT

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



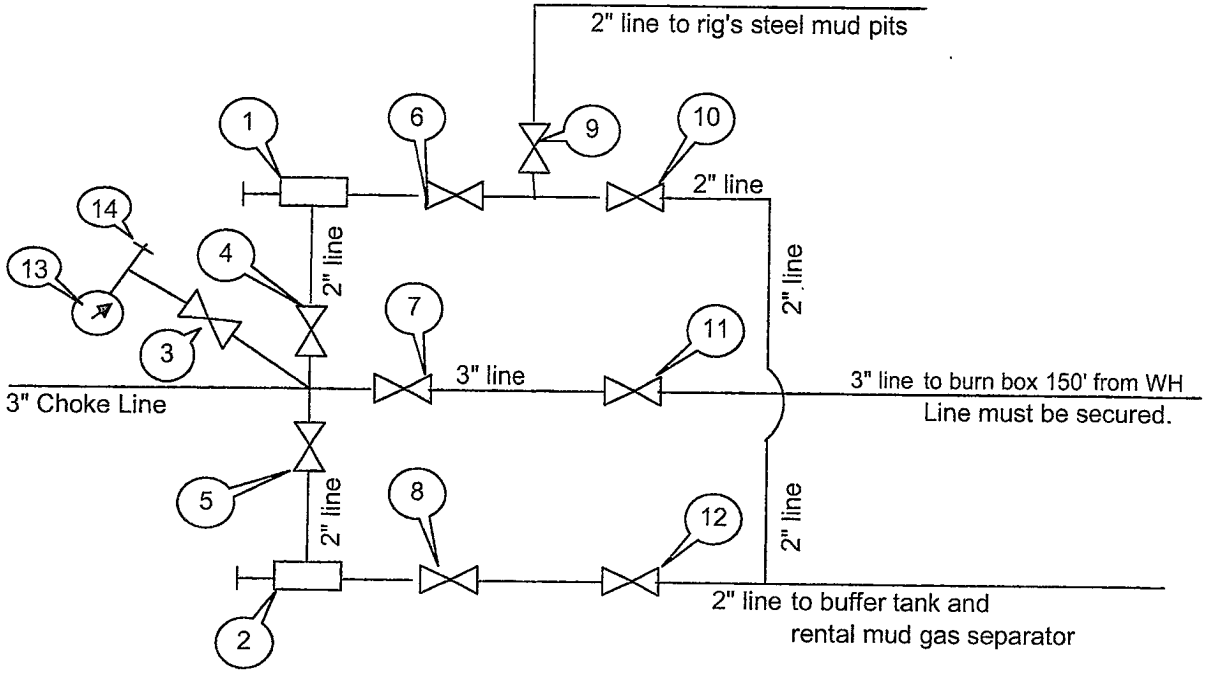
Item	Description
1	Rotating Head (11")
2A	Fill up Line and Valve
2B	Flow Line (8")
2C	Shale Shakers and Solids Settling Tank
2D	Cuttings Bins for Zero Discharge
2E	Rental Mud Gas Separator with vent line to flare and return line to mud system
3	Annular BOP (11", 3000 psi)
4	Double Ram BOP (11", 3000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

Inserted per COP email. Tmm 2/7/2012

Drawn by: Steven O. Moore, Chief Drilling Engineer, Mid-Continent Business Unit, ConocoPhillips Company, 07-Feb-2012

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	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

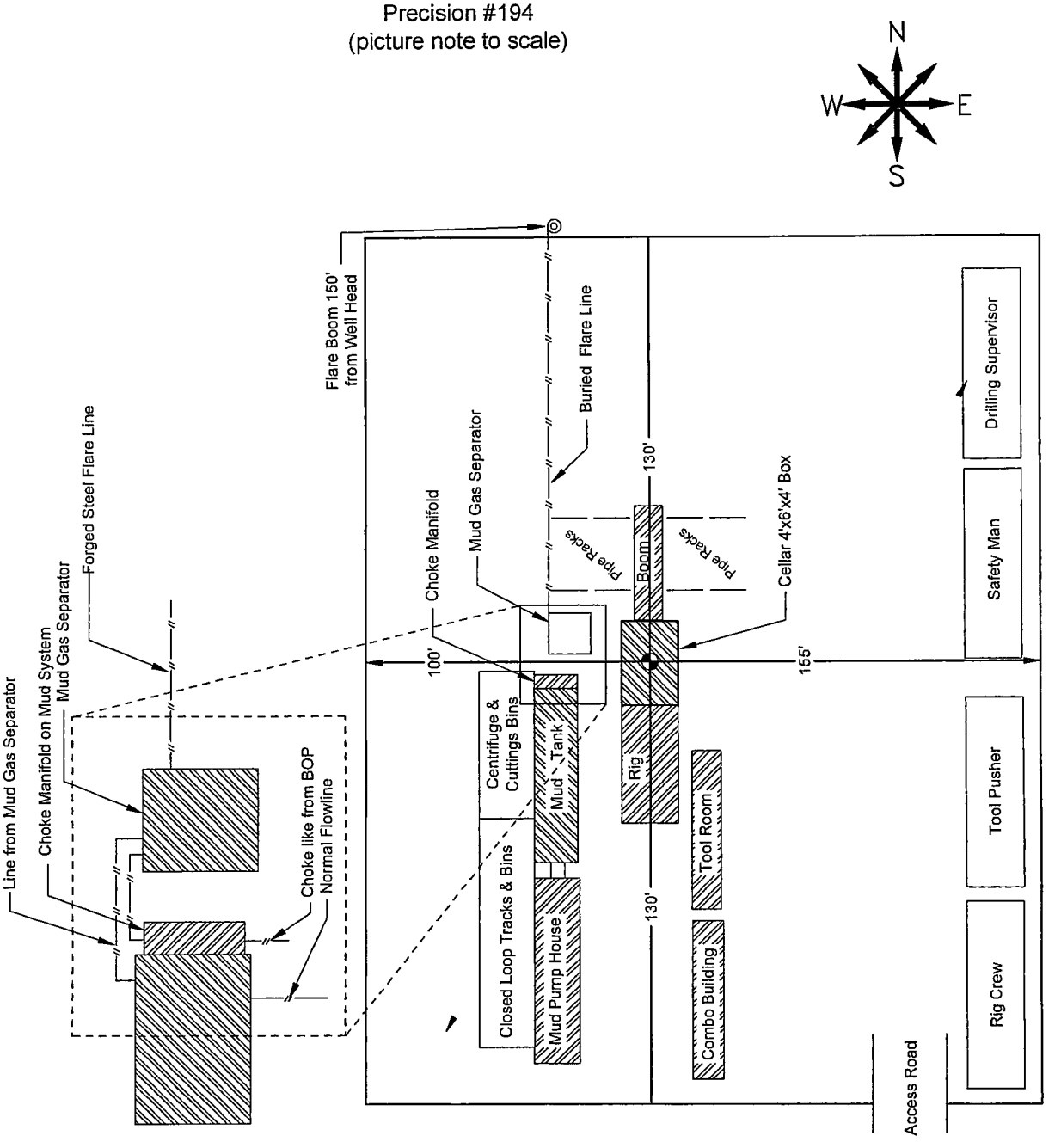
We will test each valve to 3000 psi from the upstream side.

Drawn by:
Steven O. Moore
Chief Drilling Engineer, Mid-Continent Business Unit, ConocoPhillips Company
Date: 07-Feb-2012

Inserted - per COP email TMM 2/17/2012

RIG LAYOUT

Locaton Schematic and Rig Layout
for Closed Loop System
Precision #194
(picture note to scale)



EMERALD FEDERAL #2
Located 990' FSL and 665' FEL
Section 17, Township 17 South, Range 32 East,
N.M.P.M., Lea County, New Mexico.

basin surveys
focused on excellence in the oilfield
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(575) 392-2206 - Fax
basinsurveys.com

W.O. Number: JMS 25584
Survey Date: 01-18-2012
Scale: 1" = NONE
Date: 01-19-2012

ConocoPhillips