

Operator Name/Number: OXY USA Inc. 16696
 Lease Name/Number: Copperhead 18 State #4H State Lease No. VO-5647
 Pool Name/Number: Triple X Bone Spring, West 96674
 Surface Location: 340 FNL 1980 FEL B Sec 18 T24S R33E
 Bottom Hole Location: 340 FSL 1980 FEL O Sec 18 T24S R33E

C-102 Plats: 8/27/13 9/11/13 10/15/13 Elevation: 3570' GL Objective: 2nd Bone Spring

Proposed TD: Horizontal Lateral 11148' TVD 15417' TMD
 SL - Lat: 32.2238836 Long: 103.6088098 X=724053.6 Y=445923.3 NAD - 1927
 BH - Lat: 32.2112366 Long: 103.6088000 X=724087.7 Y=441322.6 NAD - 1927

Casing Program:

Hole Size	Interval	OD Csg	Weight	Collar	Grade	Condition	Collapse Design Factor	Burst Design Factor	Tension Design Factor
14-3/4"	0-1200'	11-3/4"	47	BT&C	J55	New	3.16	1.42	4.97
				Hole filled with 8.5# Mud			1514#	3072#	
10-5/8"	0-5050'	8-5/8"	32	LT&C	J-55	New	1.52	1.23	1.78
				Hole filled with 10.2# Mud			2533#	3928#	
7-7/8"	0-15417'	5-1/2"	17	BT&C	P-110	New	2.11	1.22	1.47
				Hole filled with 9.2# Mud			7480#	10640#	

Collapse and burst loads calculated using Stress Check with anticipated loads

Cement Program:

- 11-3/4" Surface Circulate cement to surface w/ 510sx PPC cmt w/ 1% CaCl₂ + 4% Bentonite + .125#/sx Poly-E-Flake, 13.5ppg 1.73 yield 888# 24hr CS 125% Excess followed by 250sx PPC cmt w/ 1% CaCl₂, 14.8ppg 1.34 yield 1416# 24hr CS 125% Excess
- 8-5/8" Intermediate Circulate cement to surface w/ 950sx HES Light PPC cmt w/ 5% salt + .25% HR-800, 12.9ppg 1.85 yield 771# 24hr CS 125% Excess followed by 310sx PPC cmt, 14.8ppg 1.33 yield 1779# 24hr CS 125% Excess
- 5-1/2" Production Cement w/ 660sx PP cmt w/ 14.8#/sx Silicalite 50/50 Blend + 15#/sx Scotchlite HGS-6000 + 3#/sx Kol-Seal + .125#/sx Poly-E-Flake + .25#/sx HR-800, 10.2ppg 2.95 yield 947# 24hr CS 100% Excess followed by 800sx Super H cmt w/ 3#/sx salt + .4% CFR-3 + .5% Halad-344 + .3% HR-800 + .125#/sx Poly-E-Flake, 13.2ppg 1.66 yield 615# 24hr CS 40% Excess. Calc TOC-4000'

Description of Cement Additives: Calcium Chloride, Salt (Accelerator); Silicalite (Additive Material); CFR-3 (Dispersant); Bentonite, Scotchlite HGS-6000 (Light Weight Additive); Kol-Seal, Poly-E-Flake (Lost Circulation Additive); Halad-344 (Low Fluid Loss Control); HR-601, HR-800 (Retarder)
 The above cement volumes could be revised pending the caliper measurement.

Proposed Mud Circulation System:

Depth	Mud Wt. ppq	Visc sec	Fluid Loss	Type System
0 - 1200'	8.5	28-38	NC	Fresh Water/Spud Mud
1200 - 5050'	10.2	28-32	NC	Fresh water/NaCl Brine
5050-10400' - Vertical	9.2	28-34	NC	Cut Brine/Sweeps
10400' - 15417' - Curve-Lateral	9.2	32-50	<18	Duo Vis/Salt Gel/Starch/PAC

Pump high viscosity sweeps as needed for hole cleaning. The mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times.

BOP Program:

Surface None
 Intermediate/Production 13-5/8" 10M three ram stack w/ 5M annular preventer, 5M Choke Manifold

Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:

Geological Marker	Depth	Type
a. Rustler	1190'	Formation
b. Top Salt	1572'	Formation
c. Bottom Salt	5021'	Formation
d. Base Anhydrite	5031'	Formation
e. Delaware-Bell Canyon	5058'	Oil/Gas
f. Delaware-Cherry Canyon	5955'	Oil/Gas
g. Delaware-Brushy Canyon	7330'	Oil/Gas
h. 1st Bone Spring	9000'	Oil/Gas
i. 2nd Bone Spring	10362'	Oil/Gas

Fresh water may be present above the Rustler formation. Surface casing will be set below the top of the Rustler, which will cover potential fresh water sources.

A closed loop system will be utilized consisting of above ground steel tanks and haul-off bins.
 Disposal of liquids, drilling fluids and cuttings will be disposed of at an approved facility.

OCT 30 2013

[Signature]
 10/30/13

30-025-11462



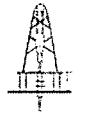
C18S 4H
Lea County, New Mexico
Northing: 445923.30
Easting: 724053.60
Design #1



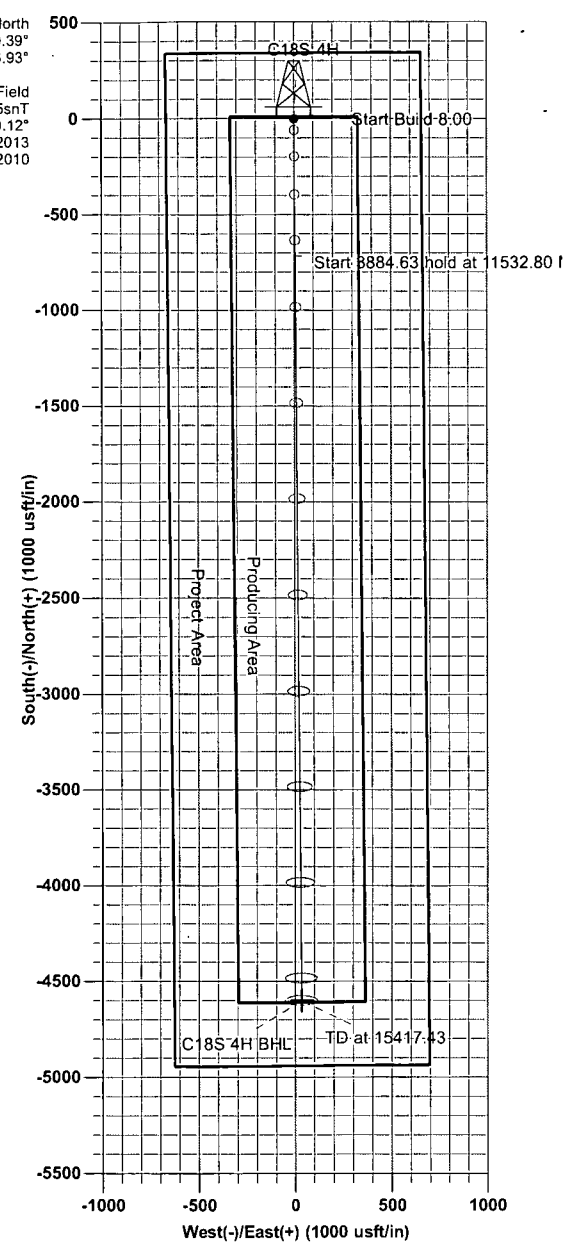
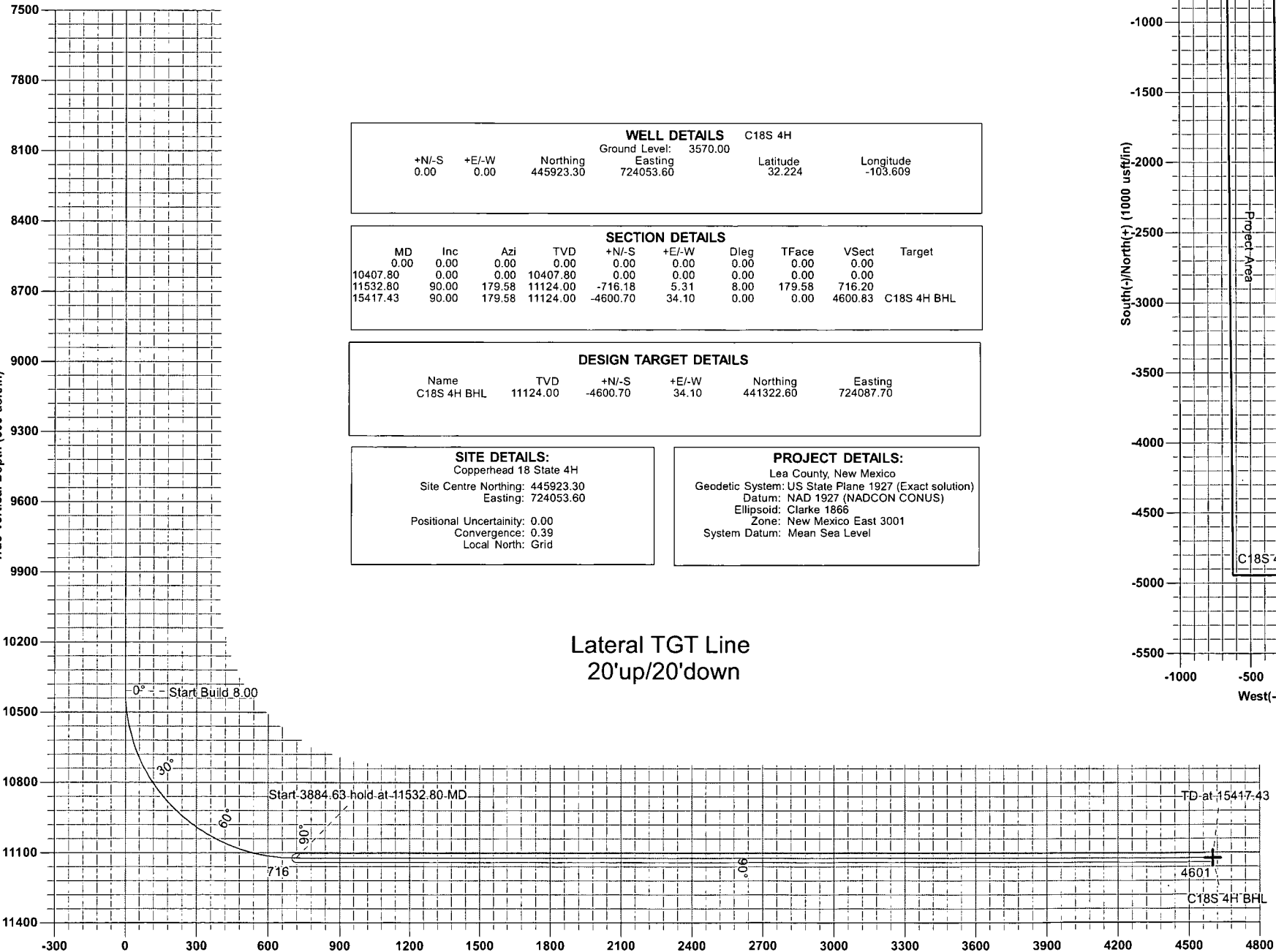
To convert a Magnetic Direction to a Grid Direction, Add 6.93°
To convert a True Direction to a Grid Direction, Subtract 0.39°

Azimuths to Grid North
True North: -0.39°
Magnetic North: 6.93°

Magnetic Field
Strength: 48379.5snT
Dip Angle: 60.12°
Date: 10/8/2013
Model: IGRF2010



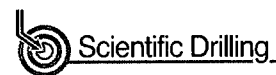
KB @ 3594.00usft
Gr @ 3570.00



Jody Barclay
15:54, October 08 2013
Scientific Drilling
2740 N. Highway 287
P.O. Box 30000



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Planning Report



Database:	CompassC	Local Co-ordinate Reference:	Well C18S 4H
Company:	OXY	TVD Reference:	KB @ 3594.00usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3594.00usft
Site:	Copperhead 18 State 4H	North Reference:	Grid
Well:	C18S 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Design #1		

Project:	Lea County, New Mexico		
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		Copperhead 18 State 4H			
Site Position:		Northing:	445,923.30 usft	Latitude:	32.224
From:	Map	Easting:	724,053.60 usft	Longitude:	-103.609
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.39

Well	C18S 4H					
Well Position	+N/-S	0.00 usft	Northing:	445,923.30 usft	Latitude:	32.224
	+E/-W	0.00 usft	Easting:	724,053.60 usft	Longitude:	-103.609
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,570.00 usft

Wellbore:	Original Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/8/2013	7.32	60.12	48,379

Design:	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.58

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10,407.80	0.00	0.00	10,407.80	0.00	0.00	0.00	0.00	0.00	0.00	
11,532.80	90.00	179.58	11,124.00	-716.18	5.31	8.00	8.00	0.00	179.58	
15,417.43	90.00	179.58	11,124.00	-4,600.70	34.10	0.00	0.00	0.00	0.00	C18S 4H BHL



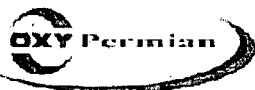
Scientific Drilling

Planning Report



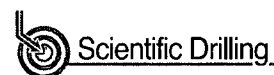
Database:	CompassC	Local/Co-ordinate Reference:	Well C18S 4H
Company:	OXY	TVD Reference:	KB @ 3594.00usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3594.00usft
Site:	Copperhead 18 State 4H	North Reference:	Grid
Well:	C18S 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00



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Planning Report



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Well:	C18S 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00
9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	0.00	0.00
9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	0.00	0.00
9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	0.00	0.00
9,400.00	0.00	0.00	9,400.00	0.00	0.00	0.00	0.00	0.00	0.00
9,500.00	0.00	0.00	9,500.00	0.00	0.00	0.00	0.00	0.00	0.00
9,600.00	0.00	0.00	9,600.00	0.00	0.00	0.00	0.00	0.00	0.00
9,700.00	0.00	0.00	9,700.00	0.00	0.00	0.00	0.00	0.00	0.00
9,800.00	0.00	0.00	9,800.00	0.00	0.00	0.00	0.00	0.00	0.00
9,900.00	0.00	0.00	9,900.00	0.00	0.00	0.00	0.00	0.00	0.00
10,000.00	0.00	0.00	10,000.00	0.00	0.00	0.00	0.00	0.00	0.00
10,100.00	0.00	0.00	10,100.00	0.00	0.00	0.00	0.00	0.00	0.00
10,200.00	0.00	0.00	10,200.00	0.00	0.00	0.00	0.00	0.00	0.00
10,300.00	0.00	0.00	10,300.00	0.00	0.00	0.00	0.00	0.00	0.00
10,407.80	0.00	0.00	10,407.80	0.00	0.00	0.00	0.00	0.00	0.00
10,450.00	3.38	179.58	10,449.98	-1.24	0.01	1.24	8.00	8.00	0.00
10,500.00	7.38	179.58	10,499.75	-5.93	0.04	5.93	8.00	8.00	0.00
10,550.00	11.38	179.58	10,549.07	-14.07	0.10	14.07	8.00	8.00	0.00



Scientific Drilling
Planning Report



Database:	CompassC	Local Co-ordinate Reference:	Well C18S 4H
Company:	OXY	TVD Reference:	KB @ 3594.00usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3594.00usft
Site:	Copperhead 18 State 4H	North Reference:	Grid
Well:	C18S 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
10,600.00	15.38	179.58	10,597.70	-25.63	0.19	25.63	8.00	8.00	0.00	
10,650.00	19.38	179.58	10,645.41	-40.56	0.30	40.56	8.00	8.00	0.00	
10,700.00	23.38	179.58	10,691.96	-58.78	0.44	58.78	8.00	8.00	0.00	
10,750.00	27.38	179.58	10,737.13	-80.20	0.59	80.21	8.00	8.00	0.00	
10,800.00	31.38	179.58	10,780.69	-104.73	0.78	104.73	8.00	8.00	0.00	
10,850.00	35.38	179.58	10,822.44	-132.23	0.98	132.23	8.00	8.00	0.00	
10,900.00	39.38	179.58	10,862.16	-162.57	1.20	162.58	8.00	8.00	0.00	
10,950.00	43.38	179.58	10,899.67	-195.61	1.45	195.62	8.00	8.00	0.00	
11,000.00	47.38	179.58	10,934.79	-231.19	1.71	231.20	8.00	8.00	0.00	
11,050.00	51.38	179.58	10,967.34	-269.13	1.99	269.14	8.00	8.00	0.00	
11,100.00	55.38	179.58	10,997.16	-309.25	2.29	309.26	8.00	8.00	0.00	
11,150.00	59.38	179.58	11,024.11	-351.35	2.60	351.36	8.00	8.00	0.00	
11,200.00	63.38	179.58	11,048.06	-395.23	2.93	395.24	8.00	8.00	0.00	
11,250.00	67.38	179.58	11,068.89	-440.67	3.27	440.69	8.00	8.00	0.00	
11,300.00	71.38	179.58	11,086.50	-487.46	3.61	487.47	8.00	8.00	0.00	
11,350.00	75.38	179.58	11,100.80	-535.36	3.97	535.37	8.00	8.00	0.00	
11,400.00	79.38	179.58	11,111.72	-584.14	4.33	584.15	8.00	8.00	0.00	
11,450.00	83.38	179.58	11,119.22	-633.56	4.70	633.58	8.00	8.00	0.00	
11,500.00	87.38	179.58	11,123.25	-683.39	5.07	683.41	8.00	8.00	0.00	
11,532.80	90.00	179.58	11,124.00	-716.18	5.31	716.20	8.00	8.00	0.00	
11,600.00	90.00	179.58	11,124.00	-783.37	5.81	783.39	0.00	0.00	0.00	
11,700.00	90.00	179.58	11,124.00	-883.37	6.55	883.39	0.00	0.00	0.00	
11,800.00	90.00	179.58	11,124.00	-983.37	7.29	983.39	0.00	0.00	0.00	
11,900.00	90.00	179.58	11,124.00	-1,083.36	8.03	1,083.39	0.00	0.00	0.00	
12,000.00	90.00	179.58	11,124.00	-1,183.36	8.77	1,183.39	0.00	0.00	0.00	
12,100.00	90.00	179.58	11,124.00	-1,283.36	9.51	1,283.39	0.00	0.00	0.00	
12,200.00	90.00	179.58	11,124.00	-1,383.36	10.25	1,383.39	0.00	0.00	0.00	
12,300.00	90.00	179.58	11,124.00	-1,483.35	10.99	1,483.39	0.00	0.00	0.00	
12,400.00	90.00	179.58	11,124.00	-1,583.35	11.74	1,583.39	0.00	0.00	0.00	
12,500.00	90.00	179.58	11,124.00	-1,683.35	12.48	1,683.39	0.00	0.00	0.00	
12,600.00	90.00	179.58	11,124.00	-1,783.35	13.22	1,783.39	0.00	0.00	0.00	
12,700.00	90.00	179.58	11,124.00	-1,883.34	13.96	1,883.39	0.00	0.00	0.00	
12,800.00	90.00	179.58	11,124.00	-1,983.34	14.70	1,983.39	0.00	0.00	0.00	
12,900.00	90.00	179.58	11,124.00	-2,083.34	15.44	2,083.39	0.00	0.00	0.00	
13,000.00	90.00	179.58	11,124.00	-2,183.33	16.18	2,183.39	0.00	0.00	0.00	
13,100.00	90.00	179.58	11,124.00	-2,283.33	16.92	2,283.39	0.00	0.00	0.00	
13,200.00	90.00	179.58	11,124.00	-2,383.33	17.67	2,383.39	0.00	0.00	0.00	
13,300.00	90.00	179.58	11,124.00	-2,483.33	18.41	2,483.39	0.00	0.00	0.00	
13,400.00	90.00	179.58	11,124.00	-2,583.32	19.15	2,583.39	0.00	0.00	0.00	
13,500.00	90.00	179.58	11,124.00	-2,683.32	19.89	2,683.39	0.00	0.00	0.00	
13,600.00	90.00	179.58	11,124.00	-2,783.32	20.63	2,783.39	0.00	0.00	0.00	
13,700.00	90.00	179.58	11,124.00	-2,883.32	21.37	2,883.39	0.00	0.00	0.00	
13,800.00	90.00	179.58	11,124.00	-2,983.31	22.11	2,983.39	0.00	0.00	0.00	
13,900.00	90.00	179.58	11,124.00	-3,083.31	22.85	3,083.39	0.00	0.00	0.00	
14,000.00	90.00	179.58	11,124.00	-3,183.31	23.59	3,183.39	0.00	0.00	0.00	
14,100.00	90.00	179.58	11,124.00	-3,283.30	24.34	3,283.39	0.00	0.00	0.00	
14,200.00	90.00	179.58	11,124.00	-3,383.30	25.08	3,383.39	0.00	0.00	0.00	
14,300.00	90.00	179.58	11,124.00	-3,483.30	25.82	3,483.39	0.00	0.00	0.00	
14,400.00	90.00	179.58	11,124.00	-3,583.30	26.56	3,583.39	0.00	0.00	0.00	
14,500.00	90.00	179.58	11,124.00	-3,683.29	27.30	3,683.39	0.00	0.00	0.00	
14,600.00	90.00	179.58	11,124.00	-3,783.29	28.04	3,783.39	0.00	0.00	0.00	
14,700.00	90.00	179.58	11,124.00	-3,883.29	28.78	3,883.39	0.00	0.00	0.00	
14,800.00	90.00	179.58	11,124.00	-3,983.29	29.52	3,983.39	0.00	0.00	0.00	
14,900.00	90.00	179.58	11,124.00	-4,083.28	30.26	4,083.39	0.00	0.00	0.00	



Scientific Drilling

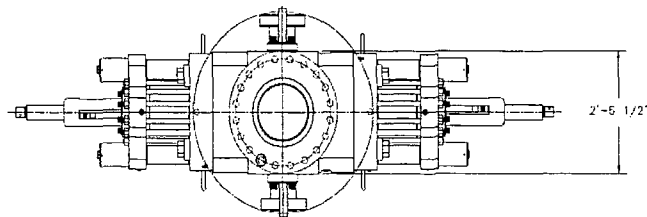
Planning Report



Database:	CompassC	Local Co-ordinate Reference:	Well C18S 4H
Company:	OXY	TVD Reference:	KB @ 3594.00usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3594.00usft
Site:	Copperhead 18 State 4H	North Reference:	Grid
Well:	C18S 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,000.00	90.00	179.58	11,124.00	-4,183.28	31.01	4,183.39	0.00	0.00	0.00	
15,100.00	90.00	179.58	11,124.00	-4,283.28	31.75	4,283.39	0.00	0.00	0.00	
15,200.00	90.00	179.58	11,124.00	-4,383.27	32.49	4,383.39	0.00	0.00	0.00	
15,300.00	90.00	179.58	11,124.00	-4,483.27	33.23	4,483.39	0.00	0.00	0.00	
15,400.00	90.00	179.58	11,124.00	-4,583.27	33.97	4,583.39	0.00	0.00	0.00	
15,417.43	90.00	179.58	11,124.00	-4,600.70	34.10	4,600.83	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle	Dip Dir	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
- Shape										
C18S 4H BHL	0.00	0.00	11,124.00	-4,600.70	34.10	441,322.60	724,087.70	32.211	-103.609	
- plan hits target center										
- Point										



- LEGEND**
- ① - 4 1/16"-10M FLANGED END GATE VALVE
 - ② - 4 1/16"-10M FLANGED END GATE VALVE WITH DOUBLE ACTING HYDRAULIC ACTUATOR
 - ③ - 2 1/16"-10M FLANGED END GATE VALVE
 - ④ - 2 1/16"-10M FLANGED END CHECK VALVE
 - ⑤ - DOUBLE STUDDED ADAPTER

SHAFFER BOLTED-COVER SPHERICAL ANNULAR PREVENTER, (API 16A MONOGRAMMED, 13 5/8"-5M WP), 10M BOTTOM FLANGE x 5M STUDDED TOP (WEIGHT = 14,500 LBS WITH SHAFFER API 16A HOT OIL RESISTANT ACRYLONITRILE ELEMENT)

CAVERON UM DOUBLE RAM-TYPE PREVENTER (API 16A MONOGRAMMED, 13 5/8"-10M WP), WITH 5" CAMERON PIPE RAMS (CAMRAM FRONT PACKERS & TOP SEALS) IN TOP CAVITY AND CAMERON DS SHEARING BLIND RAMS IN BOTTOM CAVITY, BOTTOM FLANGE x STUDDED TOP (WEIGHT = 21,100 LBS WITH RAMS)

13 5/8"-10M WP CAMERON DRILLING SPOOL (API 16A MONOGRAMMED), STUDDED TOP x FLANGED BOTTOM, WITH 4 1/16"-10M WP FLANGED OUTLETS (WEIGHT APPROXIMATELY 6,000 LBS)

CAVERON UM SINGLE RAM-TYPE PREVENTER (API 16A MONOGRAMMED, 13 5/8"-10M WP), WITH 5" CAMERON PIPE RAMS (CAMRAM FRONT PACKERS & TOP SEALS) BOTTOM FLANGE x STUDDED TOP (WEIGHT = 10,900 LBS)

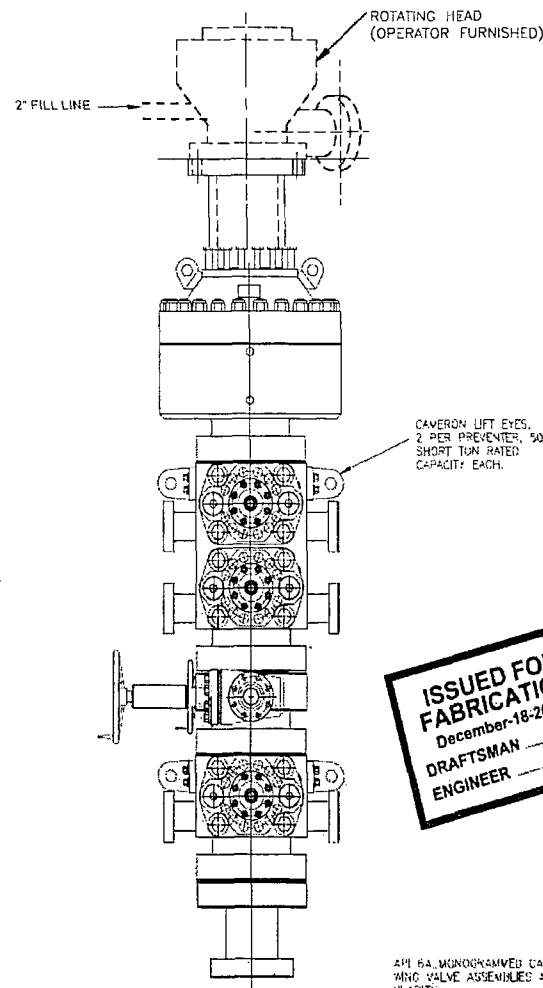
H&P FURNISHED
13 5/8"-10M x 13 5/8"-5M
ADAPTER SPOOL 2'-0" LONG

11'-1 5/8" CLOSED

12'-5 3/8" OPERATING

18'-5" OPENED

13 5/8 - 10M BOP STACK WITH 13 5/8 - 5M ANNULAR



**ISSUED FOR
FABRICATION**
December-18-2007
DRAFTSMAN
ENGINEER

API 16A MONOGRAMMED CAMERON CHOKER AND KILL MING VALVE ASSEMBLIES ARE NOT SHOWN FOR CLARITY

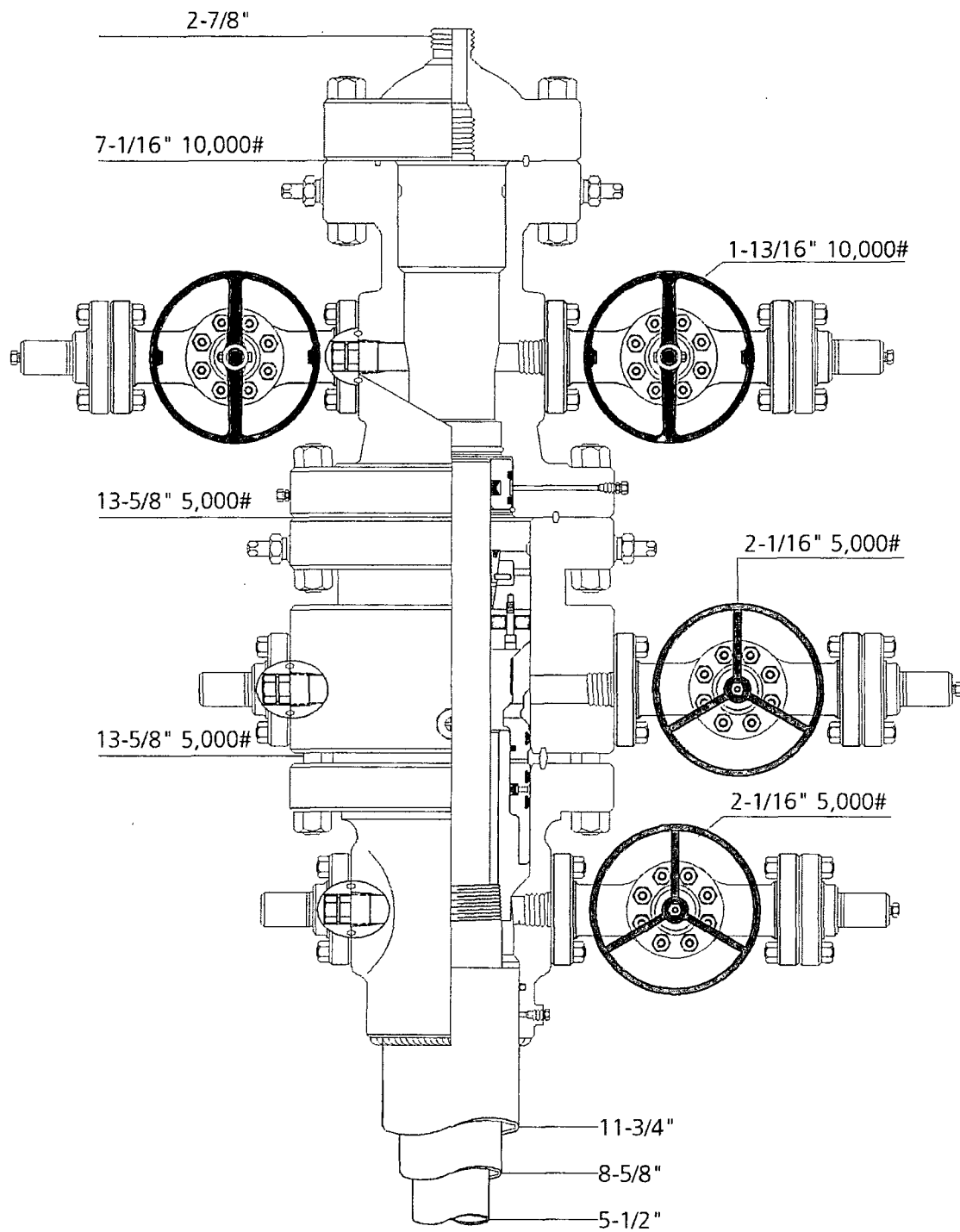
WEIGHTS DO NOT INCLUDE HOSES, ADAPTER SPOOLS OR QUICK CONNECT FITTINGS

PROPRIETARY

THIS DRAWING AND THE IDEAS AND INFORMATION INCLUDED IN THIS DRAWING ARE PROPRIETARY AND ARE NOT TO BE REPRODUCED, DISTRIBUTED OR DISCLOSED IN ANY MANNER WITHOUT THE PRIOR WRITTEN CONSENT OF A DULY AUTHORIZED OFFICER OF HELMERICH & PAYNE INTERNATIONAL DRILLING CO.

**HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.**

ENGINEERING APPROVAL	DATE	TITLE
12/13/07	ADDED SHEET D3	13 5/8"-10M BOP 3 RAM STACK
4-10-07	DRUMMER: ADDED DOUBLE STUDDED ADAPTER	FLEXRIG3
4-04-07	ADDED TO SPACER/NEAPTER SPOOL	CUSTOMER: H&P
02-07-07	ADDED ADAPTER SPOOL	PROJECT: FLEXRIG3
06-13-02	CONVERTED BOP STACK	DRAMAN
REV	DATE	DESCRIPTION
1	12/13/07	ADDED SHEET D3
2	4-10-07	DRUMMER: ADDED DOUBLE STUDDED ADAPTER
3	4-04-07	ADDED TO SPACER/NEAPTER SPOOL
4	02-07-07	ADDED ADAPTER SPOOL
5	06-13-02	CONVERTED BOP STACK
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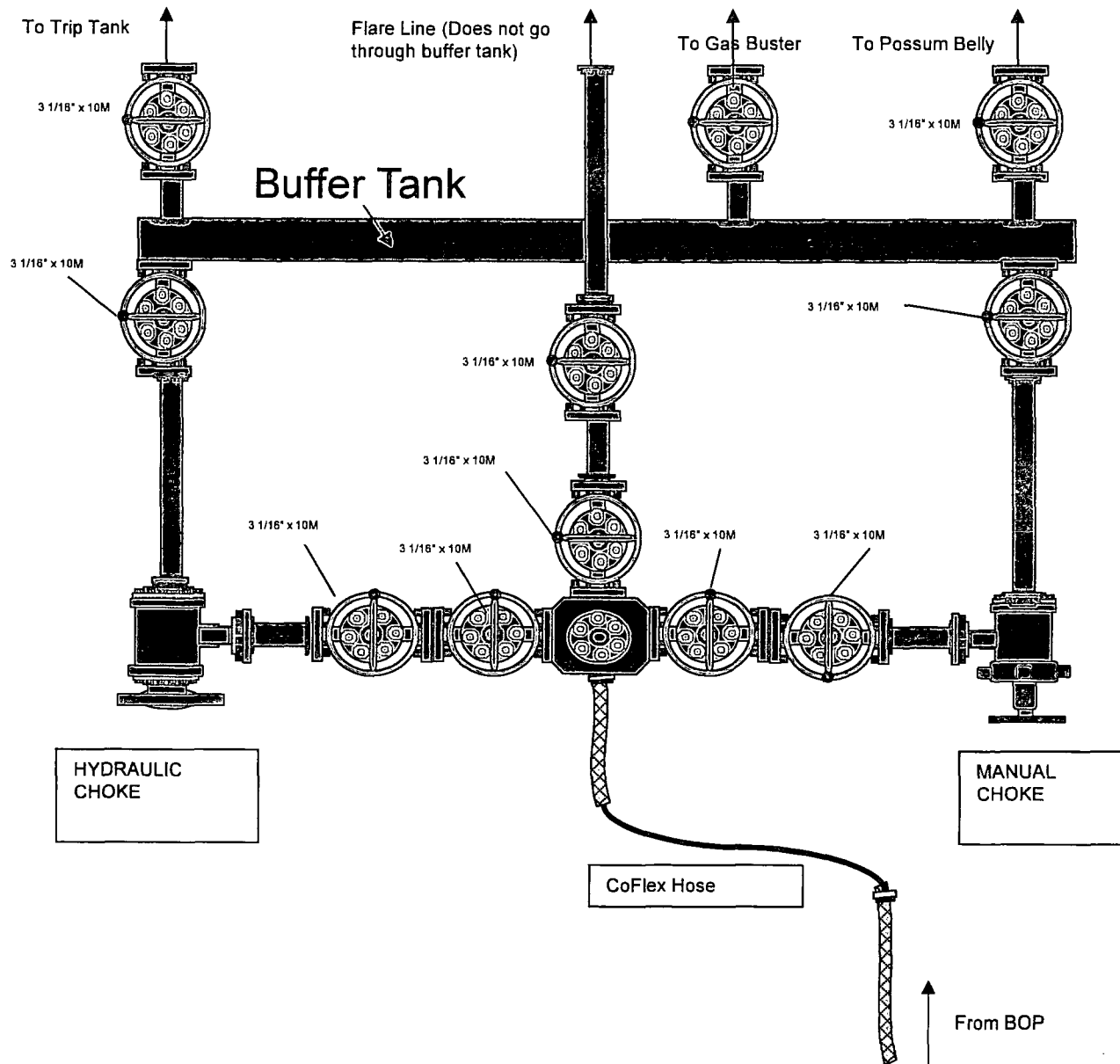


Permian Basin
MBS

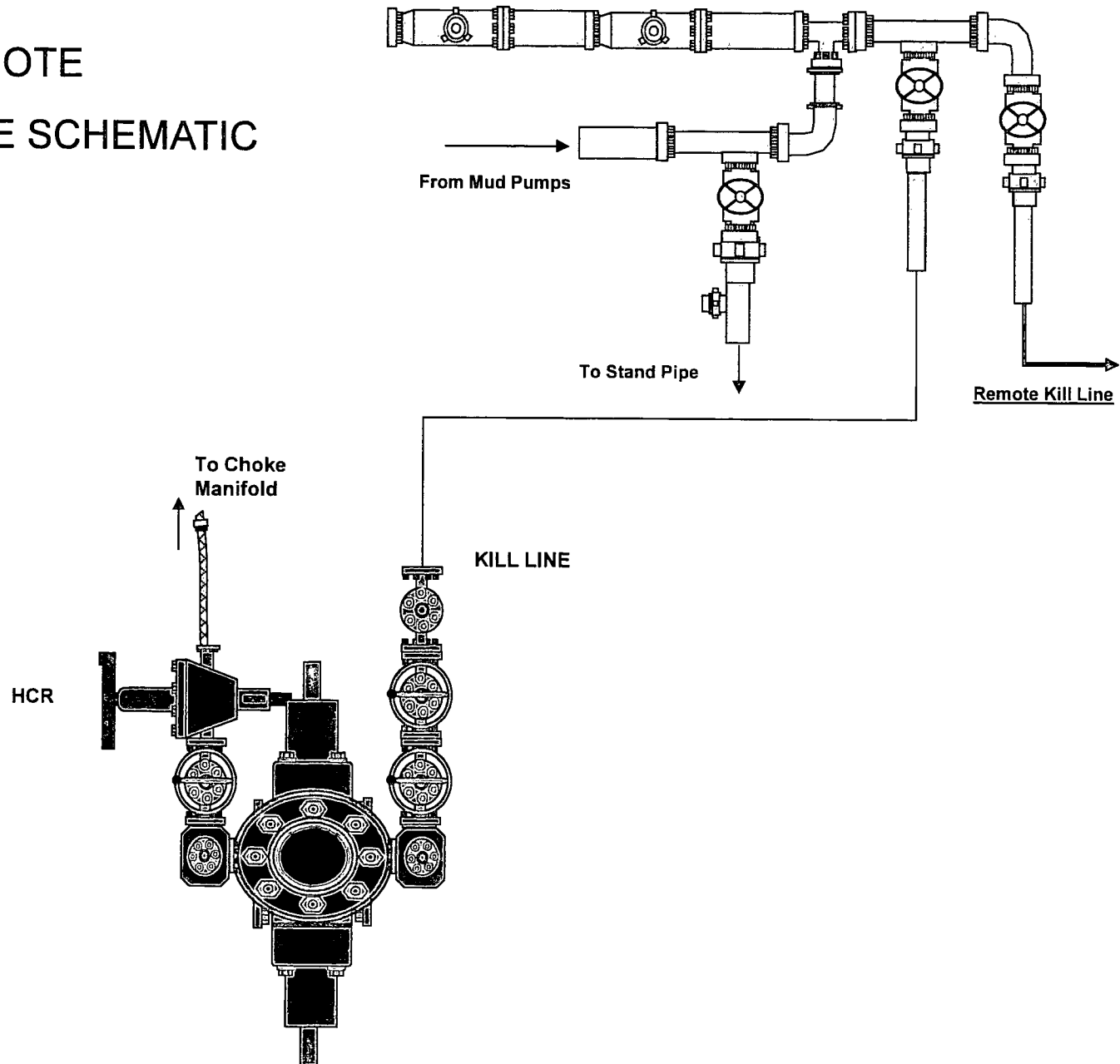


Name: Jeanette	Date: 1-31-13	Working Pressure:	# 21073221
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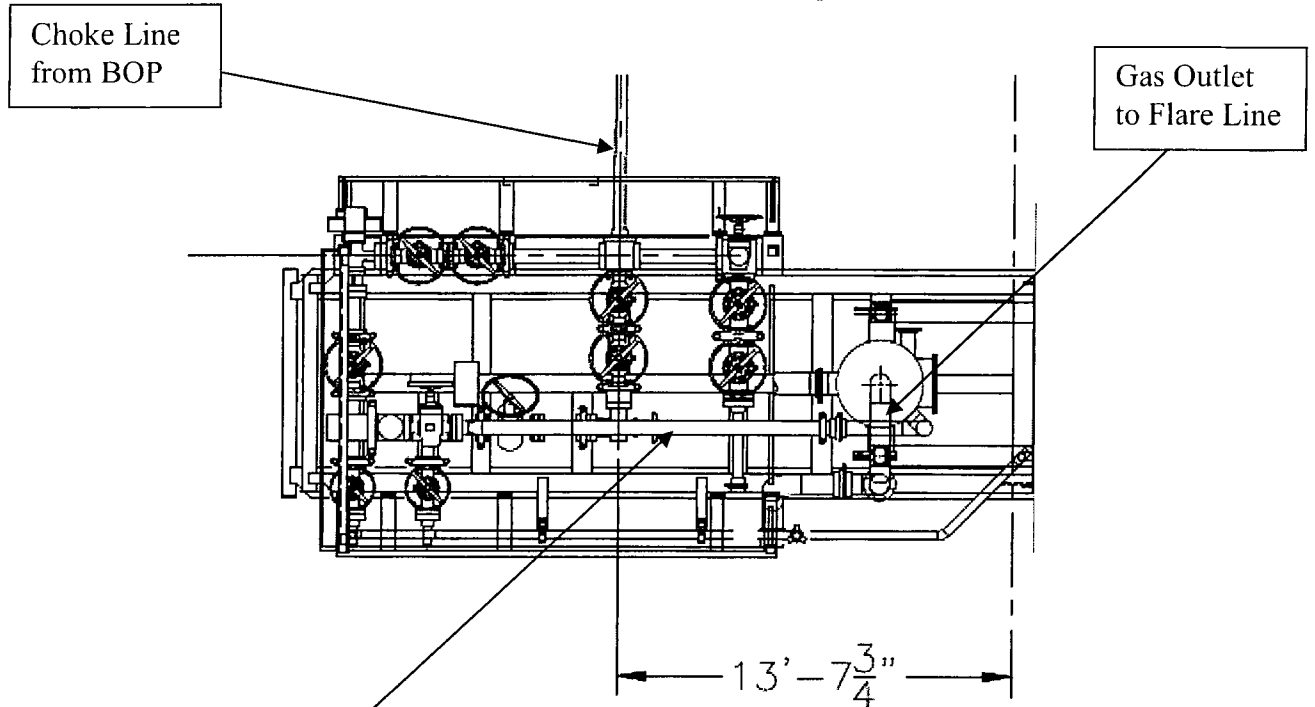
FLEX3 STD CHOKE MANIFOLD (COMPREHENSIVE)



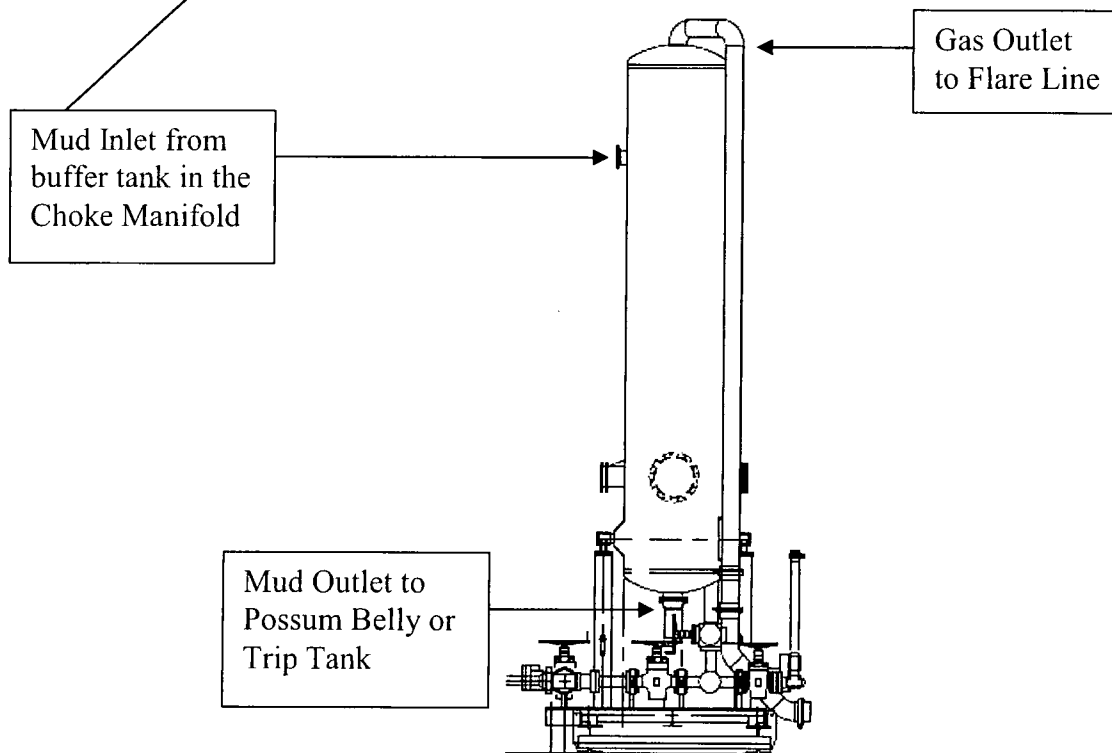
10M REMOTE KILL LINE SCHEMATIC



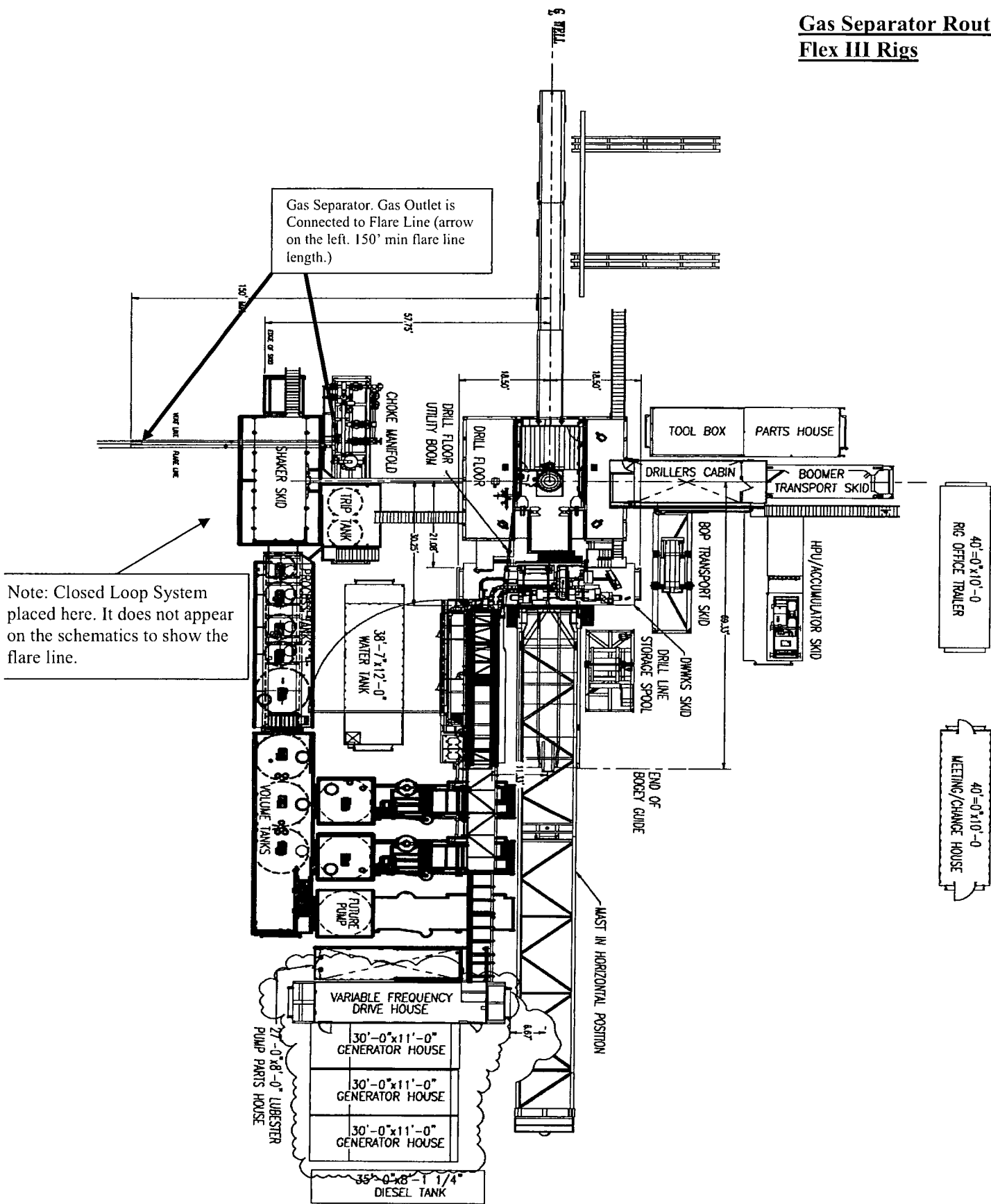
Choke Manifold – Gas Separator (Top View)



Choke Manifold – Gas Separator (Side View)

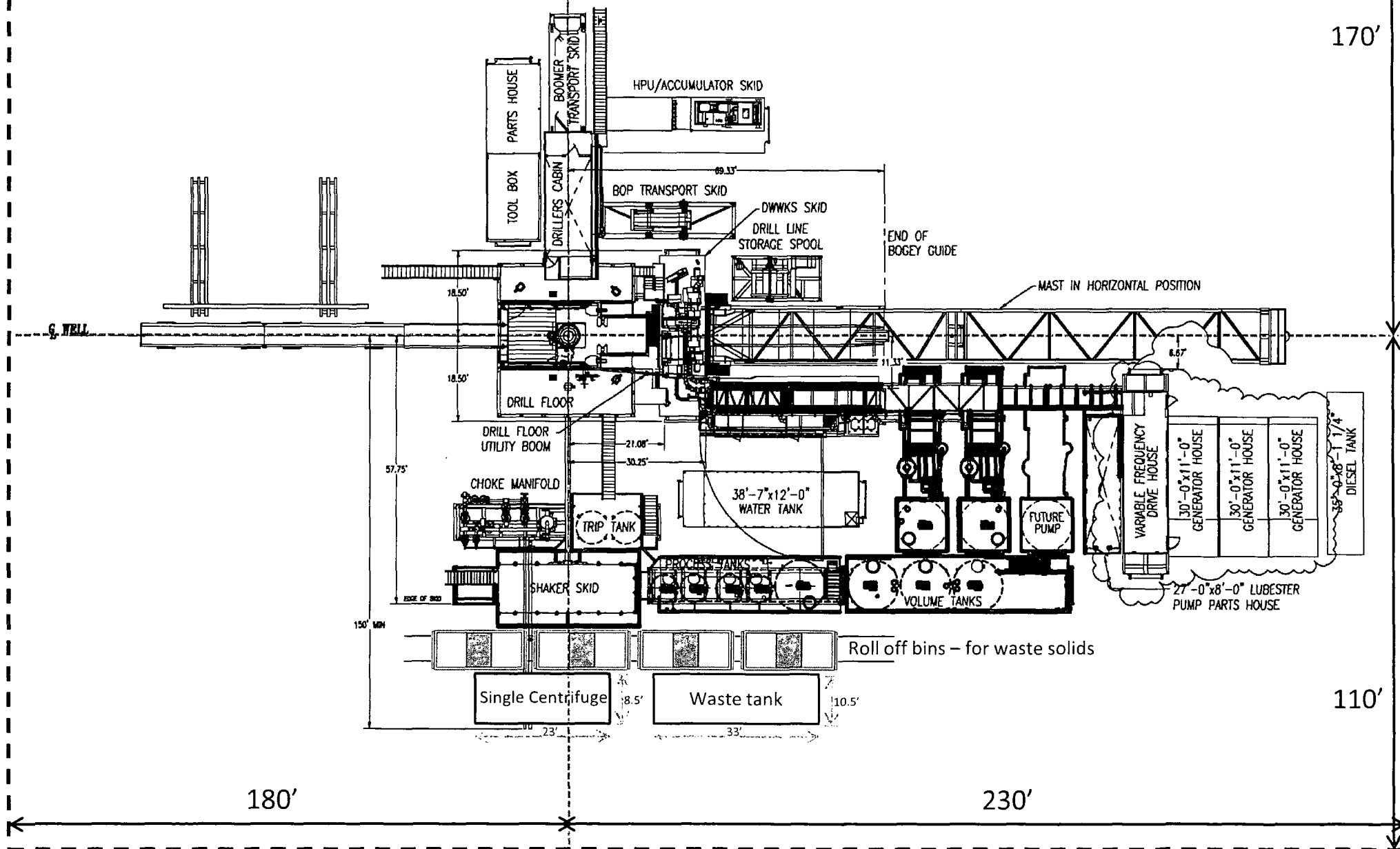


Gas Separator Routing **Flex III Rigs**

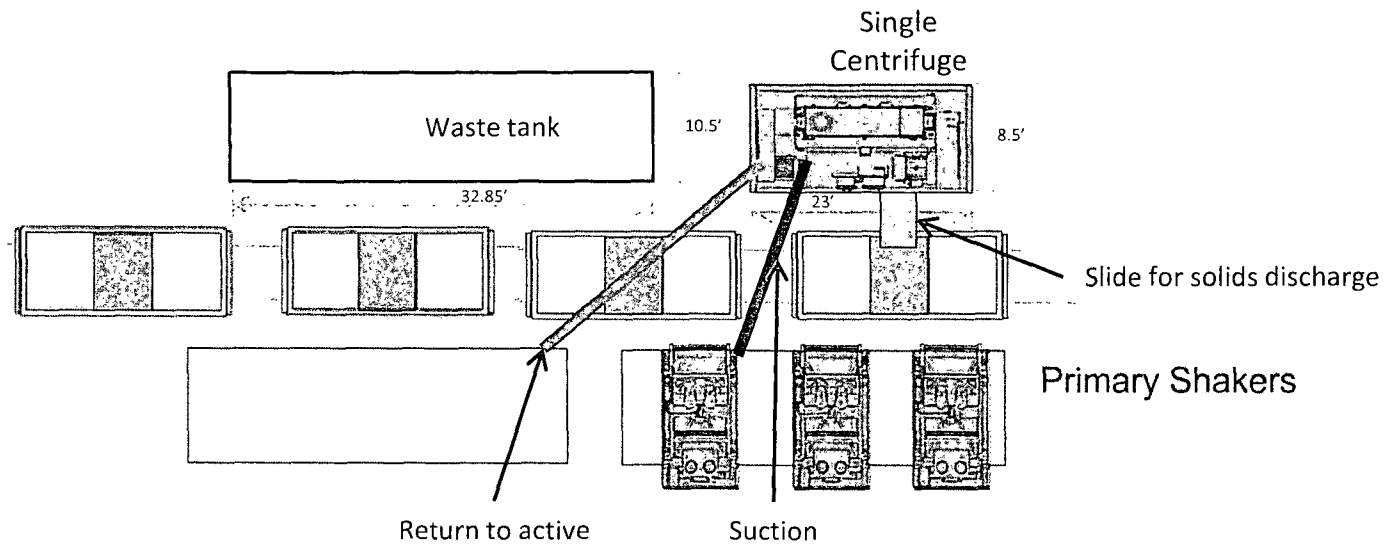


Oxy Single Centrifuge Closed Loop System – New Mexico Flex III

May 28, 2013



Oxy



Oxy Single Centrifuge
Closed Loop System – New
Mexico Flex III

May 28, 2013