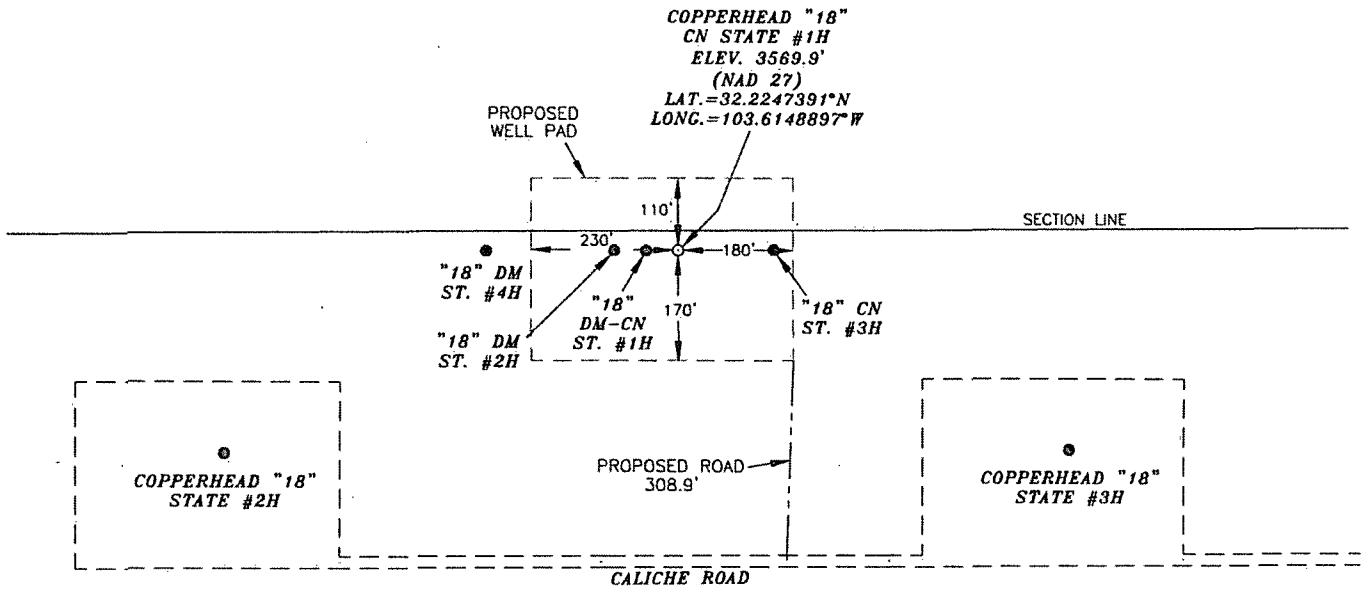


OXY USA INC.

COPPERHEAD "18" CN STATE #1H SITE PLAN

30-025-42345



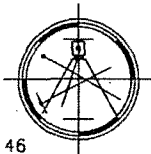
SURVEYORS CERTIFICATE

I, TERRY J. ASEL, NEW MEXICO PROFESSIONAL SURVEYOR NO. 15079, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND MEETS THE "MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO" AS ADOPTED BY THE NEW MEXICO STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND SURVEYORS.

Terry J. Asel 11/18/2014
Terry J. Asel, N.M. R.P.L.S. No. 15079

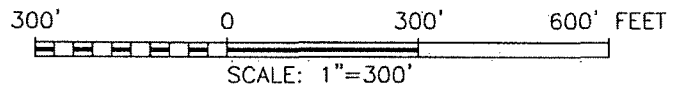
Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR
HOBBS, NEW MEXICO - 575-393-9146



LEGEND

- DENOTES PROPOSED WELL PAD
- DENOTES PROPOSED ROAD



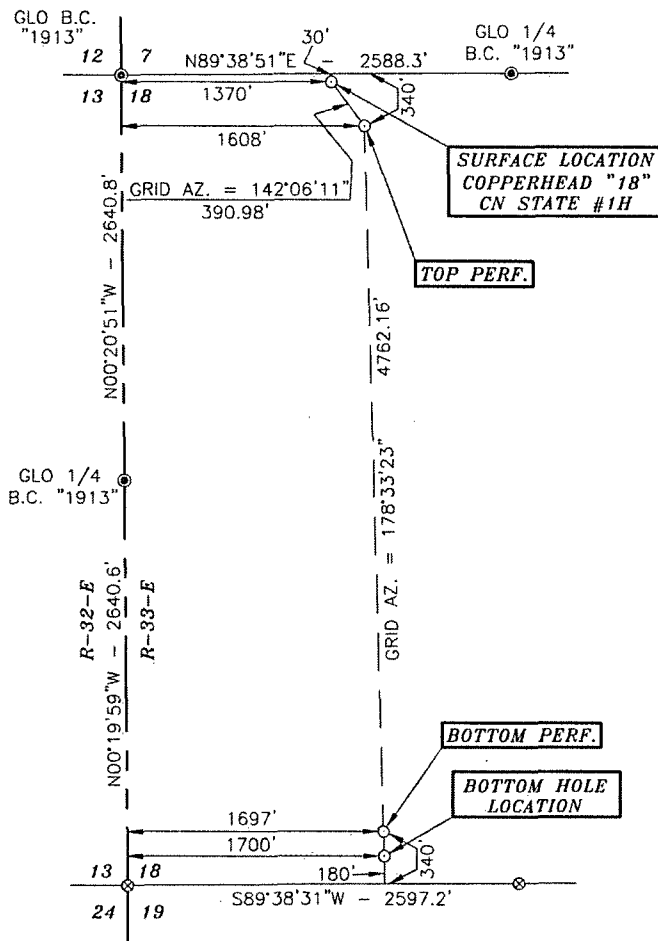
OXY USA INC.

COPPERHEAD "18" CN STATE #1H WELL PAD
LOCATED AT 30' FNL & 1370' FWL IN SECTION
18, TOWNSHIP 24 SOUTH, RANGE 33 EAST,
N.M.P.M., LEA COUNTY, NEW MEXICO

Survey Date: 10/28/14	Sheet 1 of 1 Sheets
W.O. Number: 141028WL-g	Drawn By: KA Rev:
Date: 11/18/14	141028WL-g Scale: 1"=300'

DEC 22 2014

SECTION 18, TOWNSHIP 24 SOUTH, RANGE 33 EAST, N.M.P.M.,
LEA COUNTY NEW MEXICO



DRIVING DIRECTIONS:
 BEGINNING IN JAL AT THE INTERSECTION
 OF N.M. STATE HWY. 18 AND N.M. STATE
 HWY. #128, GO WEST ON N.M. STATE
 HWY. #128 FOR 25.5 MILES, TURN
 RIGHT ON CALICHE ROAD AND GO
 NORTHWEST FOR 1.1 MILES, TURN LEFT
 AND GO WEST FOR 0.6 MILES, TURN
 RIGHT ON PROPOSED ROAD AND GO
 NORTH FOR 308.9 FEET TO LOCATION.



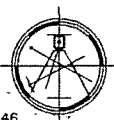
SURVEYORS CERTIFICATE

I, TERRY J. ASEL, NEW MEXICO PROFESSIONAL SURVEYOR
 NO. 15079, DO HEREBY CERTIFY THAT I CONDUCTED AND AM
 RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS
 TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND
 BELIEF, AND MEETS THE "MINIMUM STANDARDS FOR
 SURVEYING IN NEW MEXICO" AS ADOPTED BY THE NEW
 MEXICO STATE BOARD OF REGISTRATION FOR
 PROFESSIONAL ENGINEERS AND SURVEYORS.

Terry J. Asel 11/18/2014
 Terry J. Asel, N.M. R.P.L.S. No. 15079

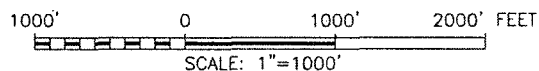
Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR
 HOBBS, NEW MEXICO - 775-393-9146



LEGEND

- ⊙ - DENOTES FOUND MONUMENT AS NOTED
- ⊗ - DENOTES CALCULATED CORNER

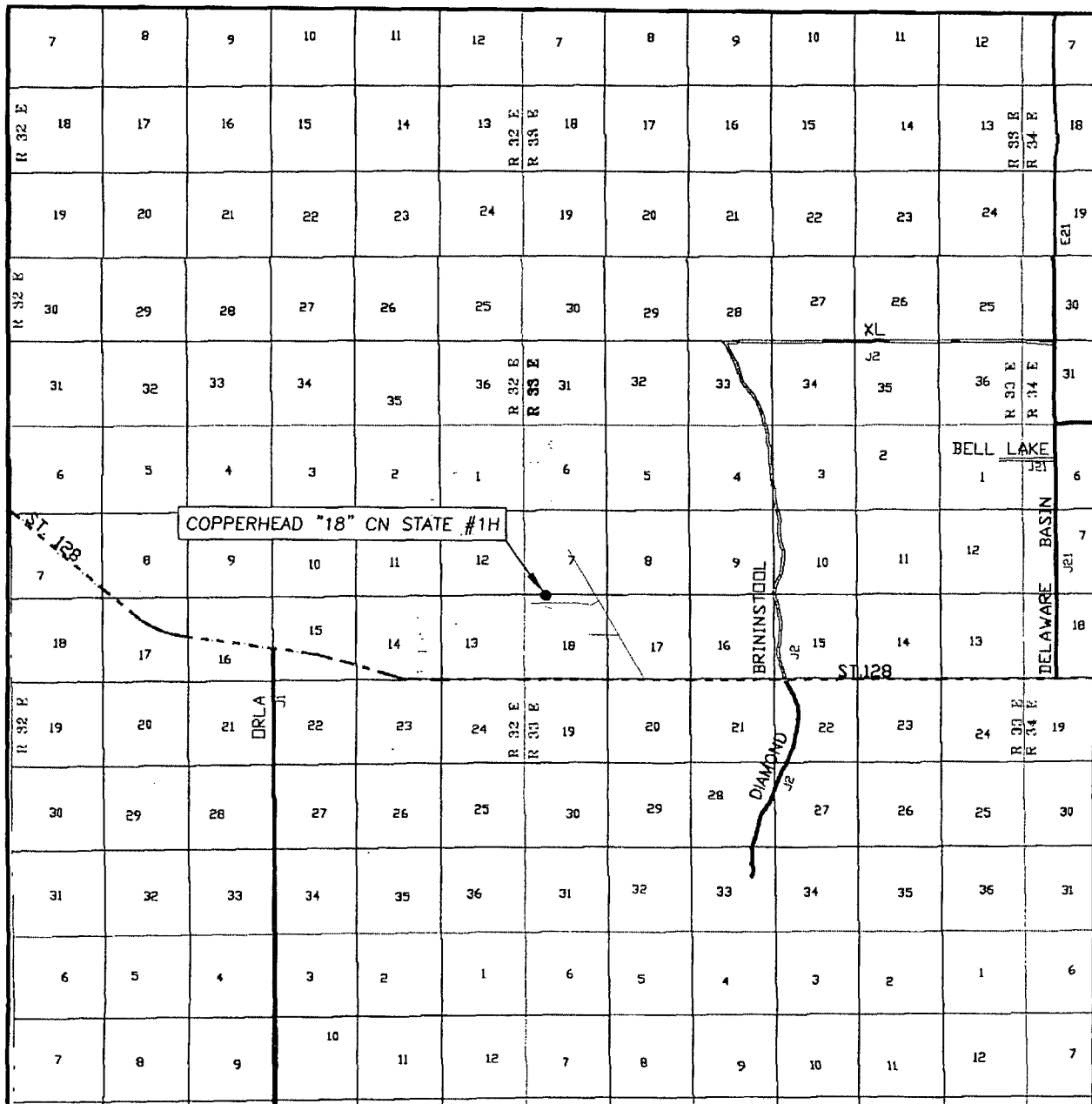


OXY USA INC.

COPPERHEAD "18" CN STATE #1H LOCATED
 AT 30' FNL & 1370' FWL IN SECTION 18,
 TOWNSHIP 24 SOUTH, RANGE 33 EAST,
 N.M.P.M., LEA COUNTY, NEW MEXICO

Survey Date: 10/28/14	Sheet 1 of 1 Sheets
W.O. Number: 141028WL-g	Drawn By: KA Rev:
Date: 11/18/14	141028WL-g Scale: 1"=1000'

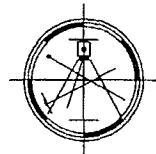
VICINITY MAP



SEC. 18 TWP. 24-S RGE. 33-E
 SURVEY N.M.P.M.
 COUNTY LEA
 DESCRIPTION 30' FNL & 1370' FWL
 ELEVATION 3569.9'
 OPERATOR OXY USA INC.

SCALE: 1" = 2 MILES

Asel Surveying

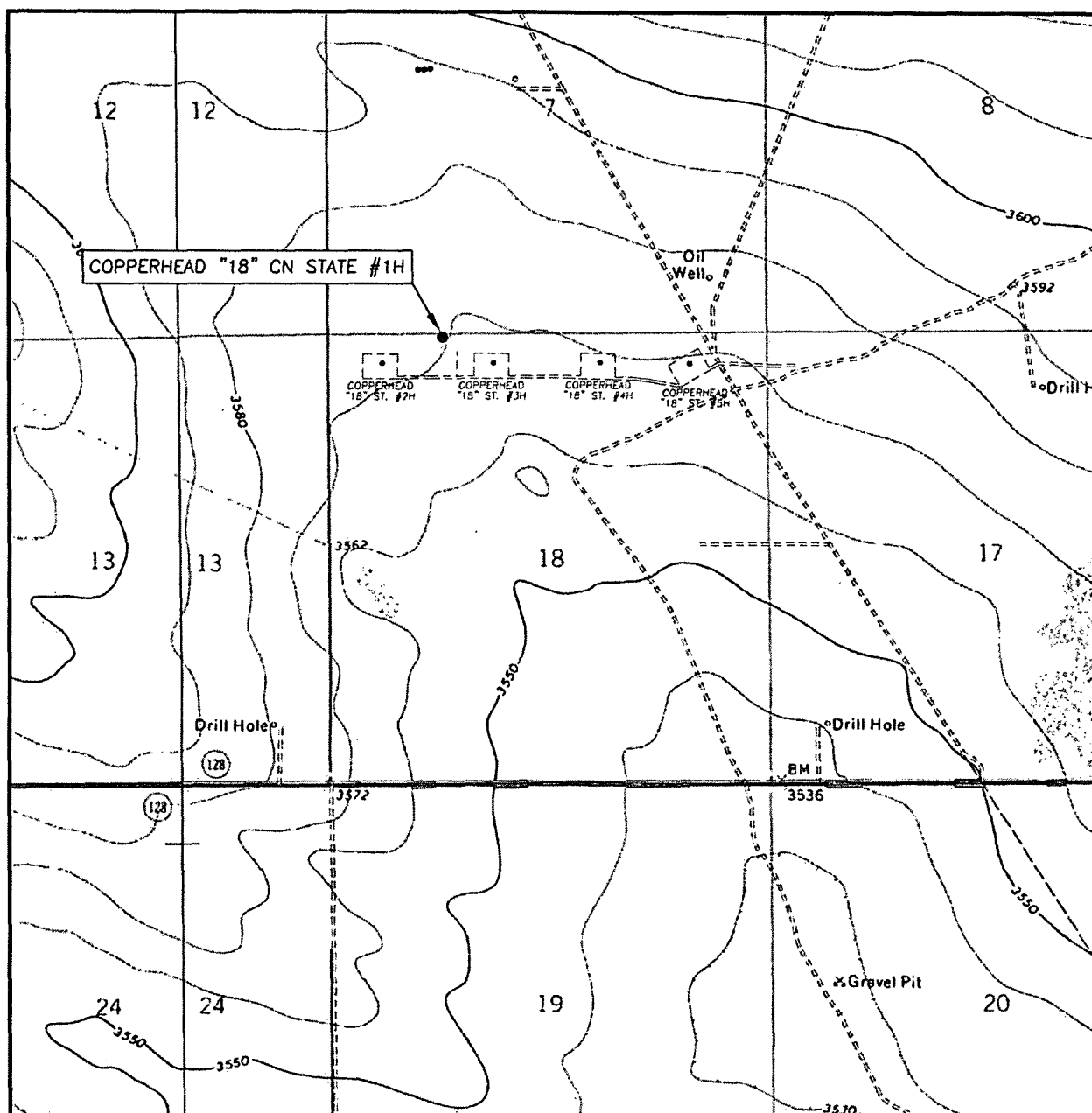


P.O. BOX 393 - 310 W. TAYLOR
 HOBBS, NEW MEXICO - 575-393-9146

LEASE COPPERHEAD "18" CN STATE #1H

DIRECTIONS BEGINNING IN JAL AT THE INTERSECTION OF N.M. STATE HWY. #18 AND N.M. STATE HWY. #128, GO WEST ON N.M. STATE HWY. #128 FOR 25.5 MILES, TURN RIGHT ON CALICHE ROAD AND GO NORTHWEST FOR 1.1 MILES, TURN LEFT AND GO WEST FOR 0.6 MILES, TURN RIGHT ON PROPOSED ROAD AND GO NORTH FOR 308.9 FEET TO LOCATION.

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: 10'

SEC. 18 TWP. 24-S RGE. 33-E

SURVEY N.M.P.M.

COUNTY LEA

DESCRIPTION 30' FNL & 1370' FWL

ELEVATION 3569.9'

OPERATOR OXY USA INC.

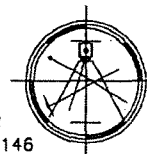
LEASE COPPERHEAD "18" CN STATE #1H

U.S.G.S. TOPOGRAPHIC MAP

BELL LAKE, N.M.

Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR
HOBBS, NEW MEXICO - 575-393-9146





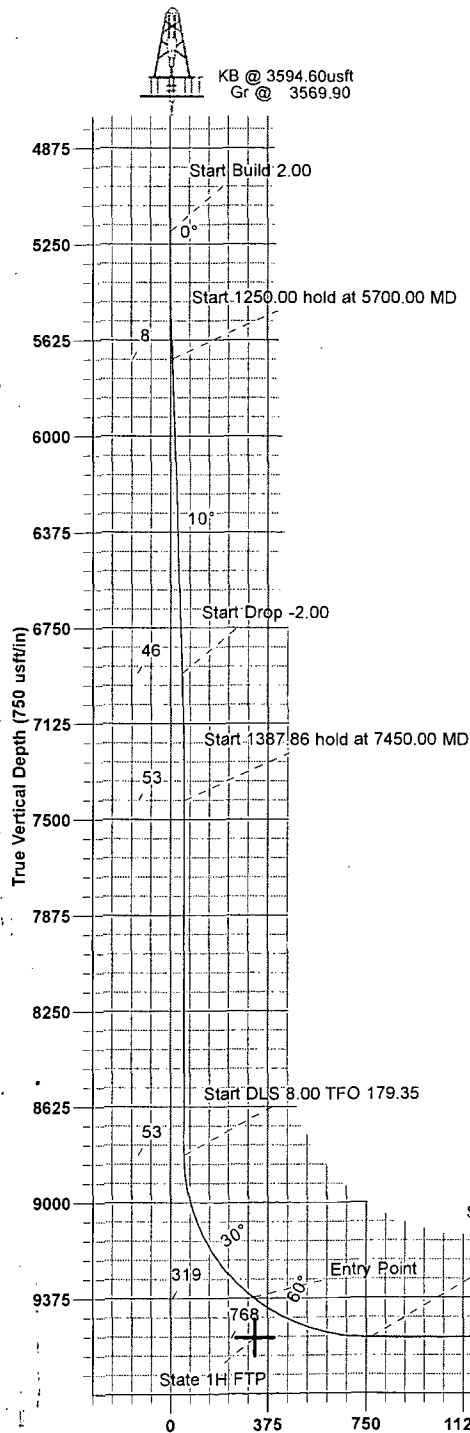
C18 CN S 1H
Lea County, New Mexico
Northing: 446221.89
Easting: 722171.30
Plan #2



Azimuths to Grid North
True North: -0.38°
Magnetic North: 6.80°

Magnetic Field
Strength: 48266.4nT
Dip Angle: 60.09°
Date: 11/24/2014
Model: IGRF2010

To convert Magnetic North to Grid, Add 6.80°
To convert True North to Grid, Subtract 0.38°



WELL DETAILS C18 CN S 1H						
Ground Level: 3569.90						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	446221.89	722171.30	32° 13' 29.061 N	103° 36' 53.603 W	

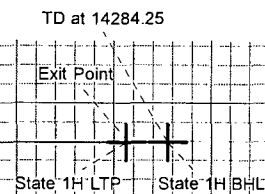
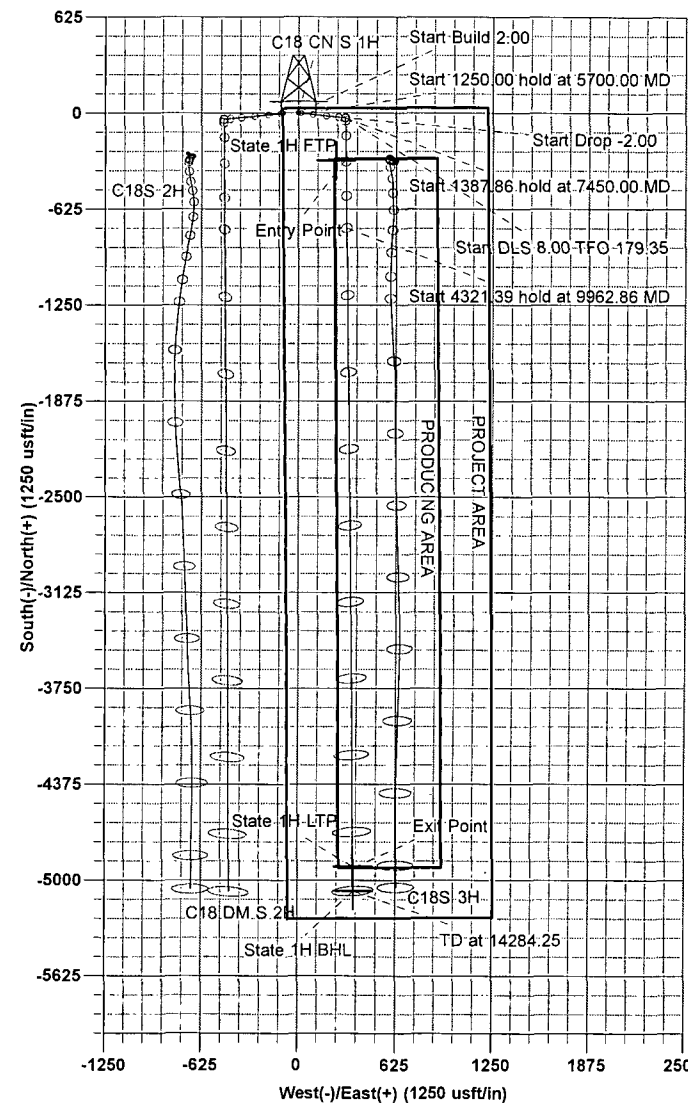
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5200.00	0.00	0.00	5200.00	0.00	0.00	0.00	0.00	0.00	
5700.00	10.00	96.00	5697.47	-4.55	43.28	2.00	96.00	7.60	
6950.00	10.00	96.00	6928.48	-27.24	259.16	0.00	0.00	45.52	
7450.00	0.00	0.00	7425.94	-31.79	302.44	2.00	180.00	53.13	
8837.86	0.00	0.00	8813.80	-31.79	302.44	0.00	0.00	53.13	
9962.86	90.00	179.35	9530.00	-747.94	310.61	8.00	179.35	768.06	
14284.25	90.00	179.35	9530.00	-5069.05	359.90	0.00	0.00	5081.81	State 1H BHL

DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	
State 1H BHL	9530.00	-5069.05	359.90	441152.84	722531.20	
State 1H FTP	9530.00	-308.52	240.15	445913.37	722411.45	
State 1H LTP	9530.00	-4909.07	355.87	441312.82	722527.17	

SITE DETAILS:
Copperhead 18 CN State 1H
Site Centre Northing: 446221.89
Easting: 722171.30

Positional Uncertainty: 0.00
Convergence: 0.38
Local North: Grid

PROJECT DETAILS:
Lea County, New Mexico
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level



Planning Report

Database:	Midland District	Local Co-ordinate Reference:	Well C18, CN S. 1H
Company:	OXY	TVD Reference:	KB @ 3594.60usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3594.60usft
Site:	Copperhead 18' CN State 1H	North Reference:	Grid
Well:	C18, CN S. 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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' CN State 1H		
Site Position:		Northing:	446,221.89 usft
From:	Map	Easting:	722,171.30 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 13' 29.061 N
		Longitude:	103° 36' 53.603 W
		Grid Convergence:	0.38 °

Well	C18, CN, S. 1H					
Well Position	+N/-S	0.00 usft	Northing:	446,221.89 usft	Latitude:	32° 13' 29.061 N
	+E/-W	0.00 usft	Easting:	722,171.30 usft	Longitude:	103° 36' 53.603 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,569.90 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/24/2014	7.18	60.09	48,266

Design:	Plan #2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (bearing)
	0.00	0.00	0.00	175.94

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(bearing)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	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	
5,700.00	10.00	96.00	5,697.47	-4.55	43.28	2.00	2.00	0.00	96.00	
6,950.00	10.00	96.00	6,928.48	-27.24	259.16	0.00	0.00	0.00	0.00	
7,450.00	0.00	0.00	7,425.94	-31.79	302.44	2.00	-2.00	0.00	180.00	
8,837.86	0.00	0.00	8,813.80	-31.79	302.44	0.00	0.00	0.00	0.00	
9,962.86	90.00	179.35	9,530.00	-747.94	310.61	8.00	8.00	15.94	179.35	
14,284.25	90.00	179.35	9,530.00	-5,069.05	359.90	0.00	0.00	0.00	0.00	State 1H BHL

Planning Report

Database:	Midland District	Local Co-ordinate Reference:	Well C18 CN S 1H
Company:	OXY	TVD Reference:	KB @ 3594.60usft.
Project:	Lea County, New Mexico	MD Reference:	KB @ 3594.60usft
Site:	Copperhead 18 CN State 1H	North Reference:	Grid
Well:	C18 CN S 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
Start Build 2.00									

Planning Report

Database:	Midland District	Local Co-ordinate Reference:	Well C18 CN S 1H
Company:	OXY	TVD Reference:	KB @ 3594.60usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3594.60usft
Site:	Copperhead 18 CN State 1H	North Reference:	Grid
Well:	C18 CN S 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,300.00	2.00	96.00	5,299.98	-0.18	1.74	0.30	2.00	2.00	0.00	
5,400.00	4.00	96.00	5,399.84	-0.73	6.94	1.22	2.00	2.00	0.00	
5,500.00	6.00	96.00	5,499.45	-1.64	15.61	2.74	2.00	2.00	0.00	
5,600.00	8.00	96.00	5,598.70	-2.91	27.73	4.87	2.00	2.00	0.00	
5,700.00	10.00	96.00	5,697.47	-4.55	43.28	7.60	2.00	2.00	0.00	
Start 1250.00 hold at 5700.00 MD										
5,800.00	10.00	96.00	5,795.95	-6.36	60.55	10.64	0.00	0.00	0.00	
5,900.00	10.00	96.00	5,894.43	-8.18	77.82	13.67	0.00	0.00	0.00	
6,000.00	10.00	96.00	5,992.91	-9.99	95.09	16.70	0.00	0.00	0.00	
6,100.00	10.00	96.00	6,091.39	-11.81	112.36	19.74	0.00	0.00	0.00	
6,200.00	10.00	96.00	6,189.87	-13.62	129.63	22.77	0.00	0.00	0.00	
6,300.00	10.00	96.00	6,288.35	-15.44	146.90	25.81	0.00	0.00	0.00	
6,400.00	10.00	96.00	6,386.83	-17.26	164.17	28.84	0.00	0.00	0.00	
6,500.00	10.00	96.00	6,485.31	-19.07	181.44	31.87	0.00	0.00	0.00	
6,600.00	10.00	96.00	6,583.79	-20.89	198.71	34.91	0.00	0.00	0.00	
6,700.00	10.00	96.00	6,682.27	-22.70	215.98	37.94	0.00	0.00	0.00	
6,800.00	10.00	96.00	6,780.75	-24.52	233.25	40.97	0.00	0.00	0.00	
6,900.00	10.00	96.00	6,879.23	-26.33	250.52	44.01	0.00	0.00	0.00	
6,950.00	10.00	96.00	6,928.48	-27.24	259.16	45.52	0.00	0.00	0.00	
Start Drop -2.00										
7,000.00	9.00	96.00	6,977.79	-28.10	267.36	46.97	2.00	-2.00	0.00	
7,100.00	7.00	96.00	7,076.81	-29.56	281.20	49.40	2.00	-2.00	0.00	
7,200.00	5.00	96.00	7,176.26	-30.65	291.60	51.22	2.00	-2.00	0.00	
7,300.00	3.00	96.00	7,276.01	-31.38	298.53	52.44	2.00	-2.00	0.00	
7,400.00	1.00	96.00	7,375.94	-31.74	302.01	53.05	2.00	-2.00	0.00	
7,450.00	0.00	0.00	7,425.94	-31.79	302.44	53.13	2.00	-2.00	0.00	
Start 1387.86 hold at 7450.00 MD										
7,500.00	0.00	0.00	7,475.94	-31.79	302.44	53.13	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,575.94	-31.79	302.44	53.13	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,675.94	-31.79	302.44	53.13	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,775.94	-31.79	302.44	53.13	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,875.94	-31.79	302.44	53.13	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,975.94	-31.79	302.44	53.13	0.00	0.00	0.00	
8,100.00	0.00	0.00	8,075.94	-31.79	302.44	53.13	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,175.94	-31.79	302.44	53.13	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,275.94	-31.79	302.44	53.13	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,375.94	-31.79	302.44	53.13	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,475.94	-31.79	302.44	53.13	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,575.94	-31.79	302.44	53.13	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,675.94	-31.79	302.44	53.13	0.00	0.00	0.00	
8,800.00	0.00	0.00	8,775.94	-31.79	302.44	53.13	0.00	0.00	0.00	
8,837.86	0.00	0.00	8,813.80	-31.79	302.44	53.13	0.00	0.00	0.00	
Start DLS 8.00 TFO 179.35										
8,850.00	0.97	179.35	8,825.94	-31.89	302.44	53.23	8.00	8.00	0.00	
8,900.00	4.97	179.35	8,875.86	-34.48	302.47	55.82	8.00	8.00	0.00	
8,950.00	8.97	179.35	8,925.48	-40.55	302.54	61.87	8.00	8.00	0.00	
9,000.00	12.97	179.35	8,974.56	-50.06	302.65	71.37	8.00	8.00	0.00	
9,050.00	16.97	179.35	9,022.85	-62.98	302.80	84.26	8.00	8.00	0.00	
9,100.00	20.97	179.35	9,070.13	-79.23	302.98	100.48	8.00	8.00	0.00	
9,150.00	24.97	179.35	9,116.15	-98.73	303.20	119.96	8.00	8.00	0.00	
9,200.00	28.97	179.35	9,160.71	-121.40	303.46	142.59	8.00	8.00	0.00	
9,250.00	32.97	179.35	9,203.57	-147.13	303.76	168.27	8.00	8.00	0.00	
9,300.00	36.97	179.35	9,244.53	-175.78	304.08	196.87	8.00	8.00	0.00	

Planning Report

Database:	Midland District	Local Co-ordinate Reference:	Well C18 CN S 1H
Company:	OXY	TVD Reference:	KB @ 3594.60usft
Project:	Lea County New Mexico	MD Reference:	KB @ 3594.60usft
Site:	Copperhead 18 CN State 1H	North Reference:	Grid
Well:	C18 CN S 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,350.00	40.97	179.35	9,283.40	-207.22	304.44	228.26	8.00	8.00	0.00
9,400.00	44.97	179.35	9,319.97	-241.29	304.83	262.27	8.00	8.00	0.00
9,450.00	48.97	179.35	9,354.09	-277.83	305.25	298.75	8.00	8.00	0.00
9,476.49	51.09	179.35	9,371.10	-298.13	305.48	319.01	8.00	8.00	0.00
Entry Point									
9,500.00	52.97	179.35	9,385.56	-316.66	305.69	337.52	8.00	8.00	0.00
9,550.00	56.97	179.35	9,414.26	-357.59	306.16	378.38	8.00	8.00	0.00
9,600.00	60.97	179.35	9,440.03	-400.43	306.64	421.14	8.00	8.00	0.00
9,650.00	64.97	179.35	9,462.74	-444.95	307.15	465.59	8.00	8.00	0.00
9,700.00	68.97	179.35	9,482.30	-490.96	307.68	511.51	8.00	8.00	0.00
9,750.00	72.97	179.35	9,498.60	-538.21	308.22	558.69	8.00	8.00	0.00
9,800.00	76.97	179.35	9,511.56	-586.49	308.77	606.88	8.00	8.00	0.00
9,850.00	80.97	179.35	9,521.12	-635.55	309.33	655.86	8.00	8.00	0.00
9,900.00	84.97	179.35	9,527.24	-685.16	309.89	705.39	8.00	8.00	0.00
9,950.00	88.97	179.35	9,529.88	-735.08	310.46	755.22	8.00	8.00	0.00
9,962.86	90.00	179.35	9,530.00	-747.94	310.61	768.06	8.00	8.00	0.00
Start 4321.39' hold at 9962.86 MD									
10,000.00	90.00	179.35	9,530.00	-785.08	311.03	805.13	0.00	0.00	0.00
10,100.00	90.00	179.35	9,530.00	-885.07	312.17	904.96	0.00	0.00	0.00
10,200.00	90.00	179.35	9,530.00	-985.06	313.31	1,004.78	0.00	0.00	0.00
10,300.00	90.00	179.35	9,530.00	-1,085.06	314.45	1,104.60	0.00	0.00	0.00
10,400.00	90.00	179.35	9,530.00	-1,185.05	315.59	1,204.43	0.00	0.00	0.00
10,500.00	90.00	179.35	9,530.00	-1,285.04	316.74	1,304.25	0.00	0.00	0.00
10,600.00	90.00	179.35	9,530.00	-1,385.04	317.88	1,404.07	0.00	0.00	0.00
10,700.00	90.00	179.35	9,530.00	-1,485.03	319.02	1,503.90	0.00	0.00	0.00
10,800.00	90.00	179.35	9,530.00	-1,585.02	320.16	1,603.72	0.00	0.00	0.00
10,900.00	90.00	179.35	9,530.00	-1,685.02	321.30	1,703.54	0.00	0.00	0.00
11,000.00	90.00	179.35	9,530.00	-1,785.01	322.44	1,803.36	0.00	0.00	0.00
11,100.00	90.00	179.35	9,530.00	-1,885.00	323.58	1,903.19	0.00	0.00	0.00
11,200.00	90.00	179.35	9,530.00	-1,985.00	324.72	2,003.01	0.00	0.00	0.00
11,300.00	90.00	179.35	9,530.00	-2,084.99	325.86	2,102.83	0.00	0.00	0.00
11,400.00	90.00	179.35	9,530.00	-2,184.99	327.00	2,202.66	0.00	0.00	0.00
11,500.00	90.00	179.35	9,530.00	-2,284.98	328.14	2,302.48	0.00	0.00	0.00
11,600.00	90.00	179.35	9,530.00	-2,384.97	329.28	2,402.30	0.00	0.00	0.00
11,700.00	90.00	179.35	9,530.00	-2,484.97	330.42	2,502.13	0.00	0.00	0.00
11,800.00	90.00	179.35	9,530.00	-2,584.96	331.56	2,601.95	0.00	0.00	0.00
11,900.00	90.00	179.35	9,530.00	-2,684.95	332.70	2,701.77	0.00	0.00	0.00
12,000.00	90.00	179.35	9,530.00	-2,784.95	333.85	2,801.60	0.00	0.00	0.00
12,100.00	90.00	179.35	9,530.00	-2,884.94	334.99	2,901.42	0.00	0.00	0.00
12,200.00	90.00	179.35	9,530.00	-2,984.93	336.13	3,001.24	0.00	0.00	0.00
12,300.00	90.00	179.35	9,530.00	-3,084.93	337.27	3,101.07	0.00	0.00	0.00
12,400.00	90.00	179.35	9,530.00	-3,184.92	338.41	3,200.89	0.00	0.00	0.00
12,500.00	90.00	179.35	9,530.00	-3,284.91	339.55	3,300.71	0.00	0.00	0.00
12,600.00	90.00	179.35	9,530.00	-3,384.91	340.69	3,400.54	0.00	0.00	0.00
12,700.00	90.00	179.35	9,530.00	-3,484.90	341.83	3,500.36	0.00	0.00	0.00
12,800.00	90.00	179.35	9,530.00	-3,584.89	342.97	3,600.18	0.00	0.00	0.00
12,900.00	90.00	179.35	9,530.00	-3,684.89	344.11	3,700.01	0.00	0.00	0.00
13,000.00	90.00	179.35	9,530.00	-3,784.88	345.25	3,799.83	0.00	0.00	0.00
13,100.00	90.00	179.35	9,530.00	-3,884.87	346.39	3,899.65	0.00	0.00	0.00
13,200.00	90.00	179.35	9,530.00	-3,984.87	347.53	3,999.48	0.00	0.00	0.00
13,300.00	90.00	179.35	9,530.00	-4,084.86	348.67	4,099.30	0.00	0.00	0.00
13,400.00	90.00	179.35	9,530.00	-4,184.86	349.81	4,199.12	0.00	0.00	0.00
13,500.00	90.00	179.35	9,530.00	-4,284.85	350.95	4,298.94	0.00	0.00	0.00
13,600.00	90.00	179.35	9,530.00	-4,384.84	352.10	4,398.77	0.00	0.00	0.00

Planning Report

Database:	Midland District	Local Co-ordinate Reference:	Well: C18 CN S 1H
Company:	OXY	TVD Reference:	KB @ 3594.60usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3594.60usft
Site:	Copperhead 18' CN State 1H	North Reference:	Grid
Well:	C18 CN S 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey

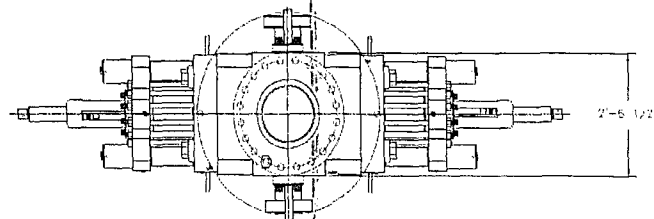
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,700.00	90.00	179.35	9,530.00	-4,484.84	353.24	4,498.59	0.00	0.00	0.00
13,800.00	90.00	179.35	9,530.00	-4,584.83	354.38	4,598.41	0.00	0.00	0.00
13,900.00	90.00	179.35	9,530.00	-4,684.82	355.52	4,698.24	0.00	0.00	0.00
14,000.00	90.00	179.35	9,530.00	-4,784.82	356.66	4,798.06	0.00	0.00	0.00
14,100.00	90.00	179.35	9,530.00	-4,884.81	357.80	4,897.88	0.00	0.00	0.00
14,134.24	90.00	179.35	9,530.00	-4,919.05	358.19	4,932.06	0.00	0.00	0.00
Exit Point									
14,200.00	90.00	179.35	9,530.00	-4,984.80	358.94	4,997.71	0.00	0.00	0.00
14,284.25	90.00	179.35	9,530.00	-5,069.05	359.90	5,081.81	0.00	0.00	0.00
TD at 14284.25									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (bearing)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
State 1H BHL	0.00	0.00	9,530.00	-5,069.05	359.90	441,152.84	722,531.20	32° 12' 38.876 N	103° 36' 49.809 W
- plan hits target center									
- Point									
State 1H FTP	0.00	0.00	9,530.00	-308.52	240.15	445,913.37	722,411.45	32° 13' 25.992 N	103° 36' 50.832 W
- plan misses target center by 140.63usft at 9566.97usft MD (9423.34 TVD, -371.93 N, 306.32 E)									
- Point									
State 1H LTP	0.00	0.00	9,530.00	-4,909.07	355.87	441,312.82	722,527.17	32° 12' 40.459 N	103° 36' 49.843 W
- plan misses target center by 2.20usft at 14124.24usft MD (9530.00 TVD, -4909.04 N, 358.07 E)									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,200.00	5,200.00	0.00	0.00	Start Build 2.00
5,700.00	5,697.47	-4.55	43.28	Start 1250.00 hold at 5700.00 MD
6,950.00	6,928.48	-27.24	259.16	Start Drop -2.00
7,450.00	7,425.94	-31.79	302.44	Start 1387.86 hold at 7450.00 MD
8,837.86	8,813.80	-31.79	302.44	Start DLS 8.00 TFO 179.35
9,476.49	9,371.10	-298.13	305.48	Entry Point
9,962.86	9,530.00	-747.94	310.61	Start 4321.39 hold at 9962.86 MD
14,134.24	9,530.00	-4,919.05	358.19	Exit Point
14,284.25	9,530.00	-5,069.05	359.90	TD at 14284.25



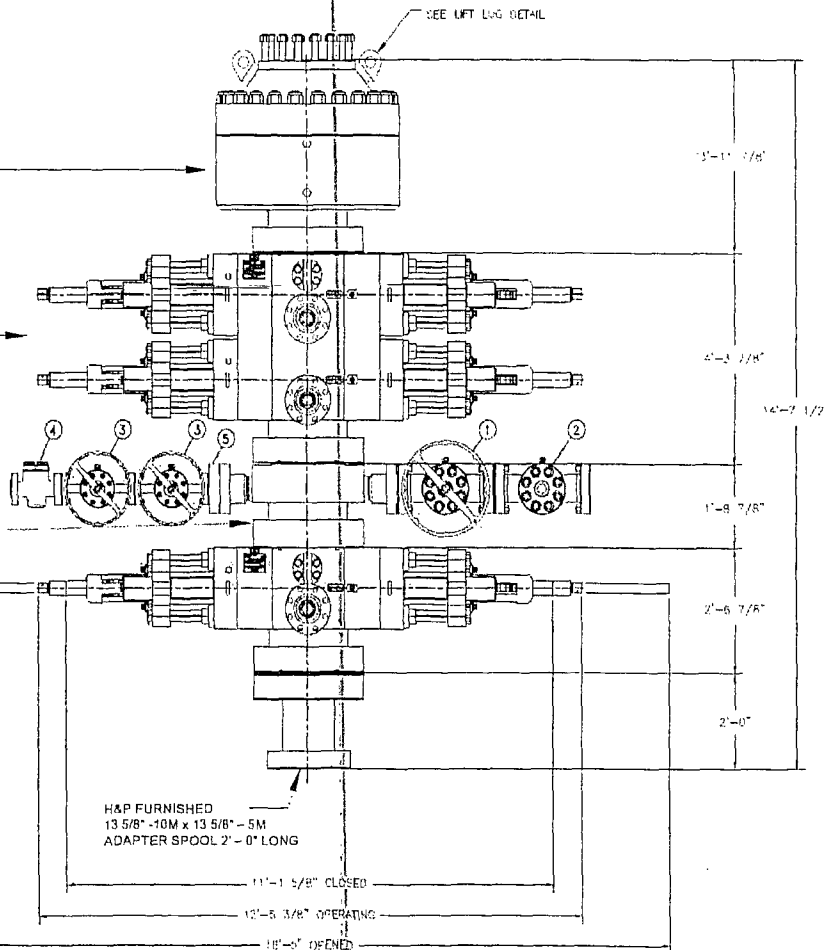
- LEGEND
- ① - 4 1/16"-10M FLANGED END GATE VALVE
 - ② - 4 1/16"-10M FLANGED END GATE VALVE WITH DOUBLE ACTING HYDRAULIC ACTUATOR
 - ③ - 2 1/16"-10M FLANGED END GATE VALVE
 - ④ - 2 1/16"-10M FLANGED END CHECK VALVE
 - ⑤ - DOUBLE STUDDED ADAPTER

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

CAMERON 10M 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 UN-SHEARING BLIND RAMS IN BOTTOM CAVITY. BOTTOM FLANGE & STUDDED TOP (WEIGHT = 21,100 LBS, WITH RAMS)

13 5/8"-10M WP CAMERON DRILLING SPWHL (API 16A MONOGRAMMED), STUDDED TOP & FLANGED BOTTOM, WITH 4 1/16"-10M WP FLANGED OUTLETS (WEIGHT APPROXIMATELY 6000 LBS)

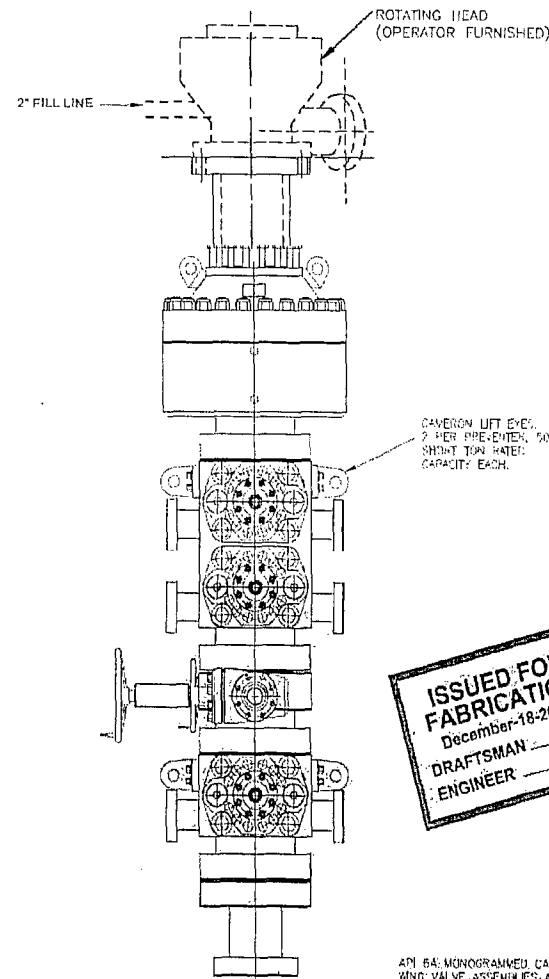
CAMERON 10M SINGLE RAM-TYPE PREVENTER (API 16A MONOGRAMMED, 13 5/8"-10M WP), WITH 5" CAMERON PIPE RAMS (CAMRAM FRONT PACKERS & TOP SEALS) BOTTOM FLANGE, STUDDED TOP (WEIGHT = 10,900 LBS)



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
13'-0" 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 CHOKES AND KILLING 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, DISSEMINATED OR DISCLOSED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF A DULY AUTHORIZED OFFICER OF HELMERICH & PAYNE INTL. DRILLING CO.

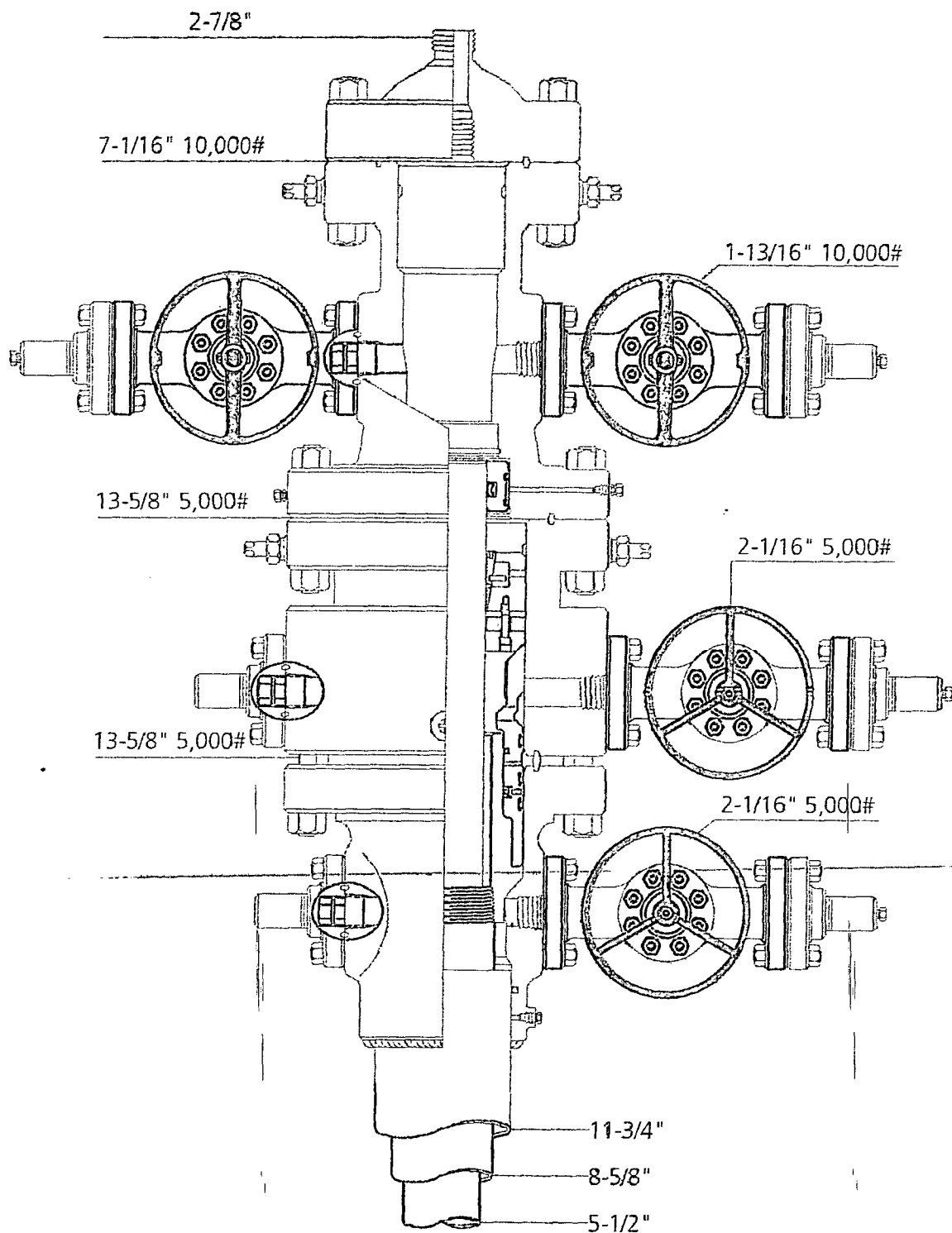
HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.

TITLE:
13 5/8"-10M BOP 3 RAM STACK
"FLEXRIG3"

CUSTOMER: H&P
PROJECT: FLEXRIG3
DRAWN: MTS
DATE: 08-05-07
SCALE: 3/4" = 1'
SHEET: 1 OF 3
REV. NO. 210-P1-07 E

REV	DATE	DESCRIPTION	BY
1	12/18/07	ADDED SHEET 01	RAY
2	4-10-07	CHOKES AND KILLING VALVE ASSEMBLIES	JNG
3	4-20-07	ADDED TO SPIDER ADAPTER SPOOL	JNG
4	02-07-02	ADDED ADAPTER SPOOL	WML
5	06-13-02	CONNECTED BOP STACK	WML

210-1

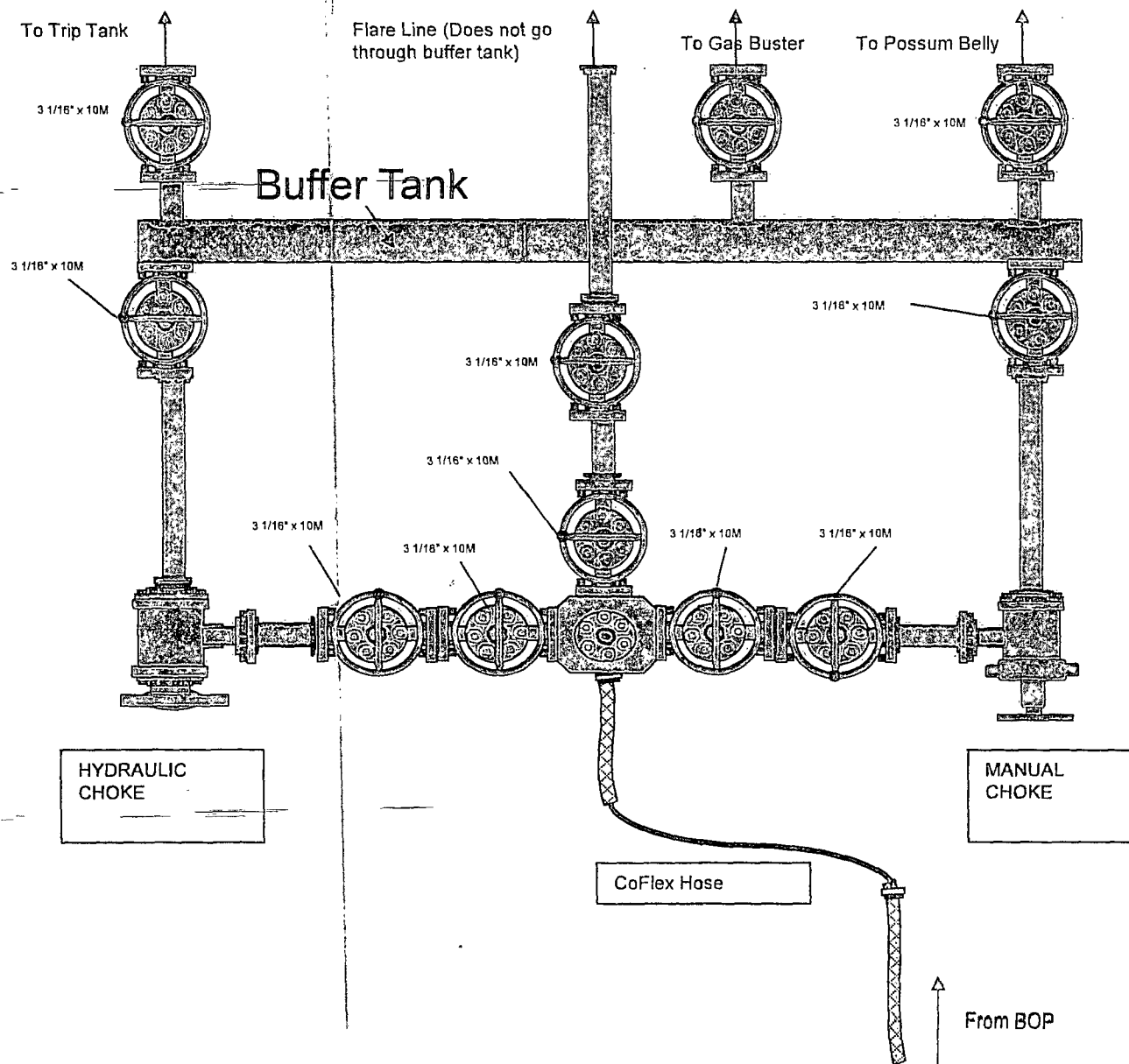


Permian Basin
MBS



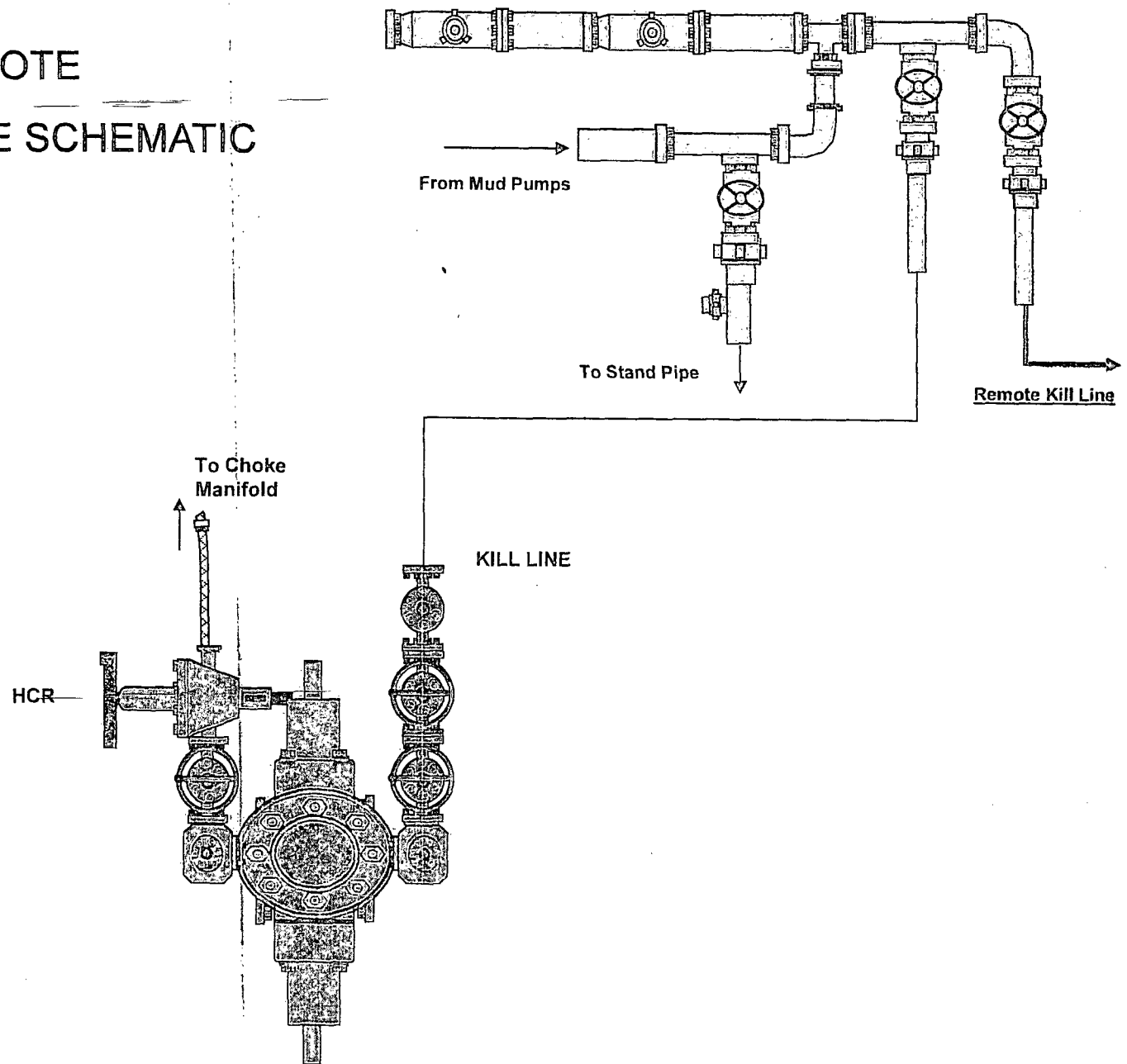
Name: Jeanette	Date: 1-31-13	Working Pressure:	# 21073221
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FLEX3 STD CHOKE MANIFOLD (COMPREHENSIVE)

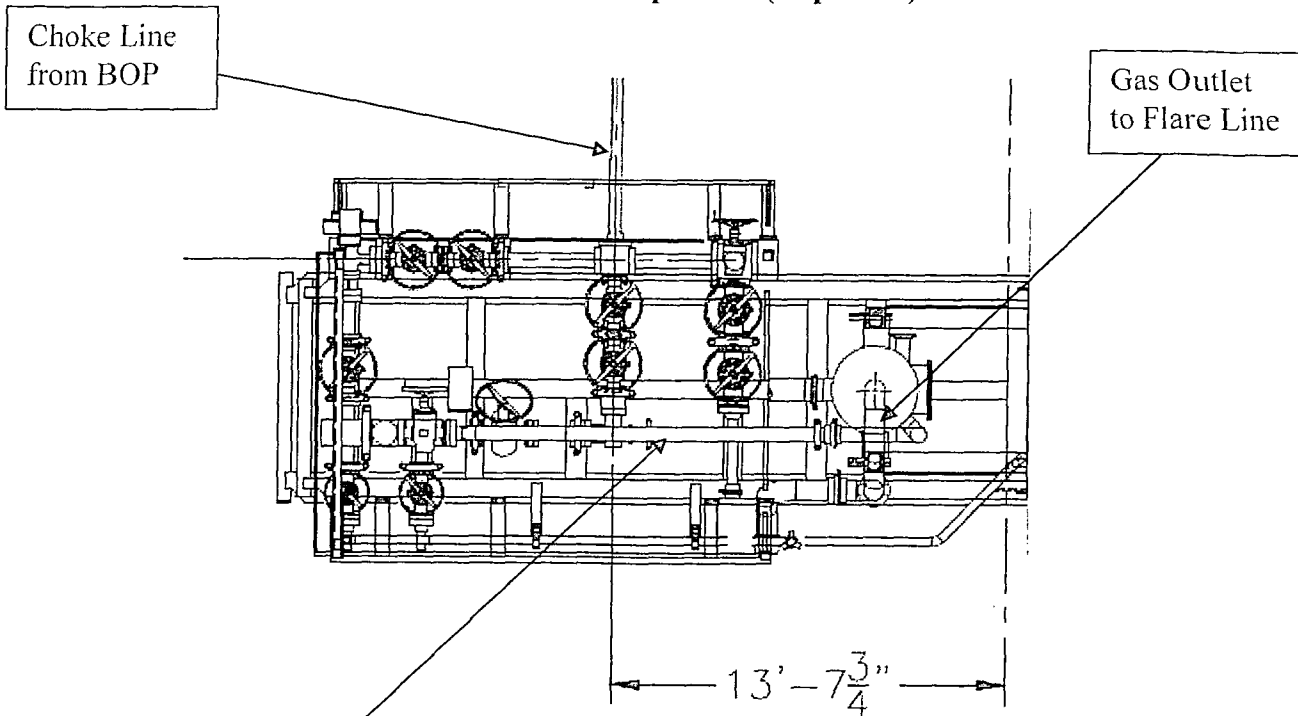


CM-1

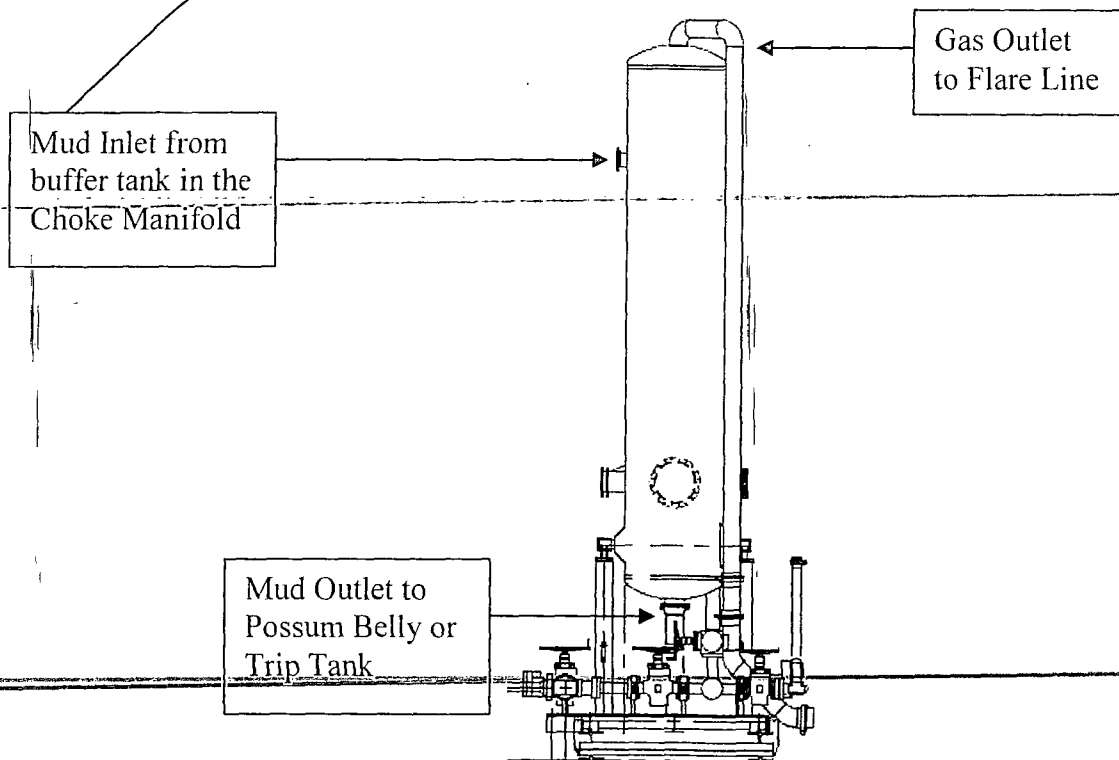
10M REMOTE KILL LINE SCHEMATIC



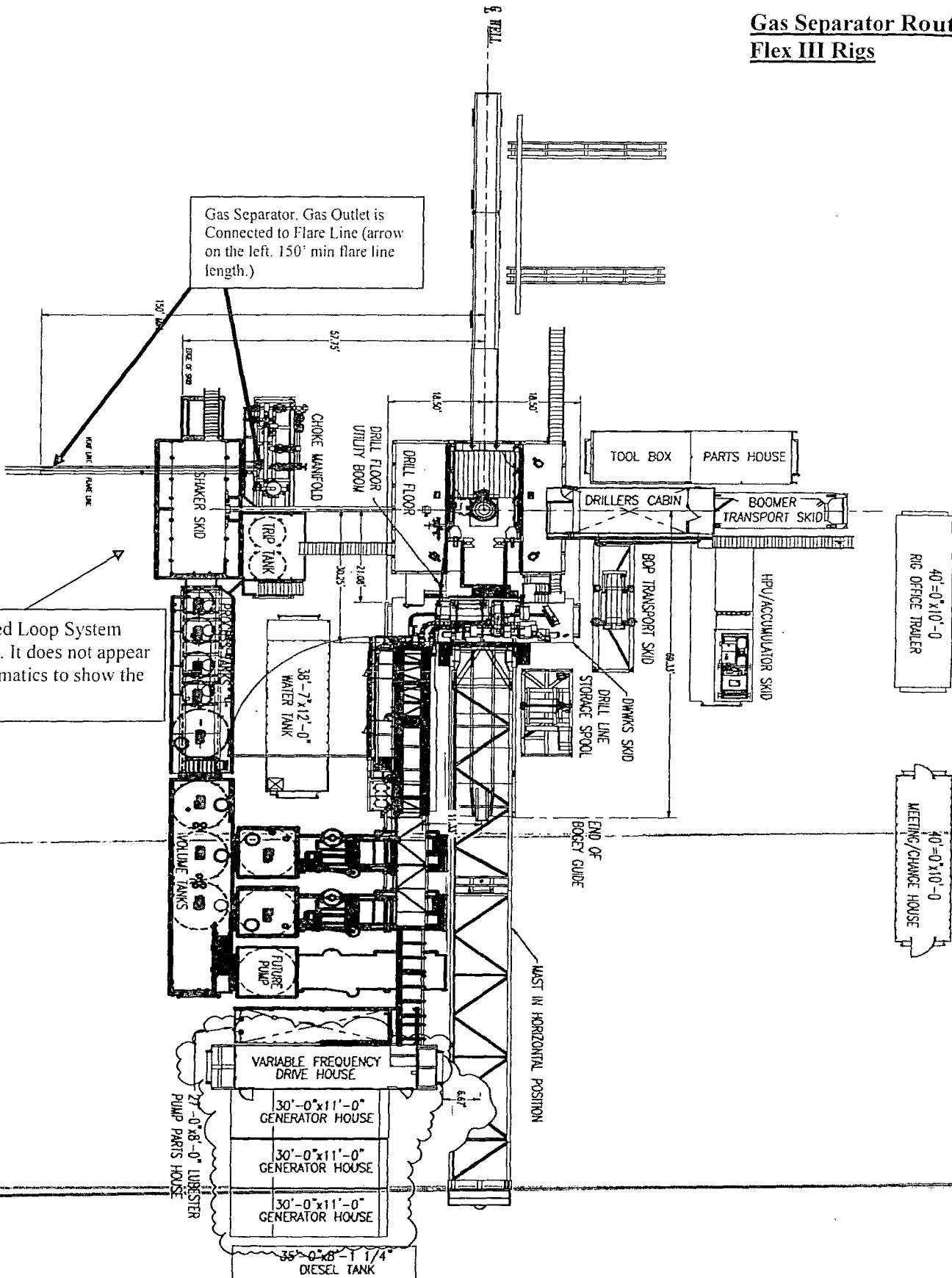
Choke Manifold – Gas Separator (Top View)



Choke Manifold – Gas Separator (Side View)

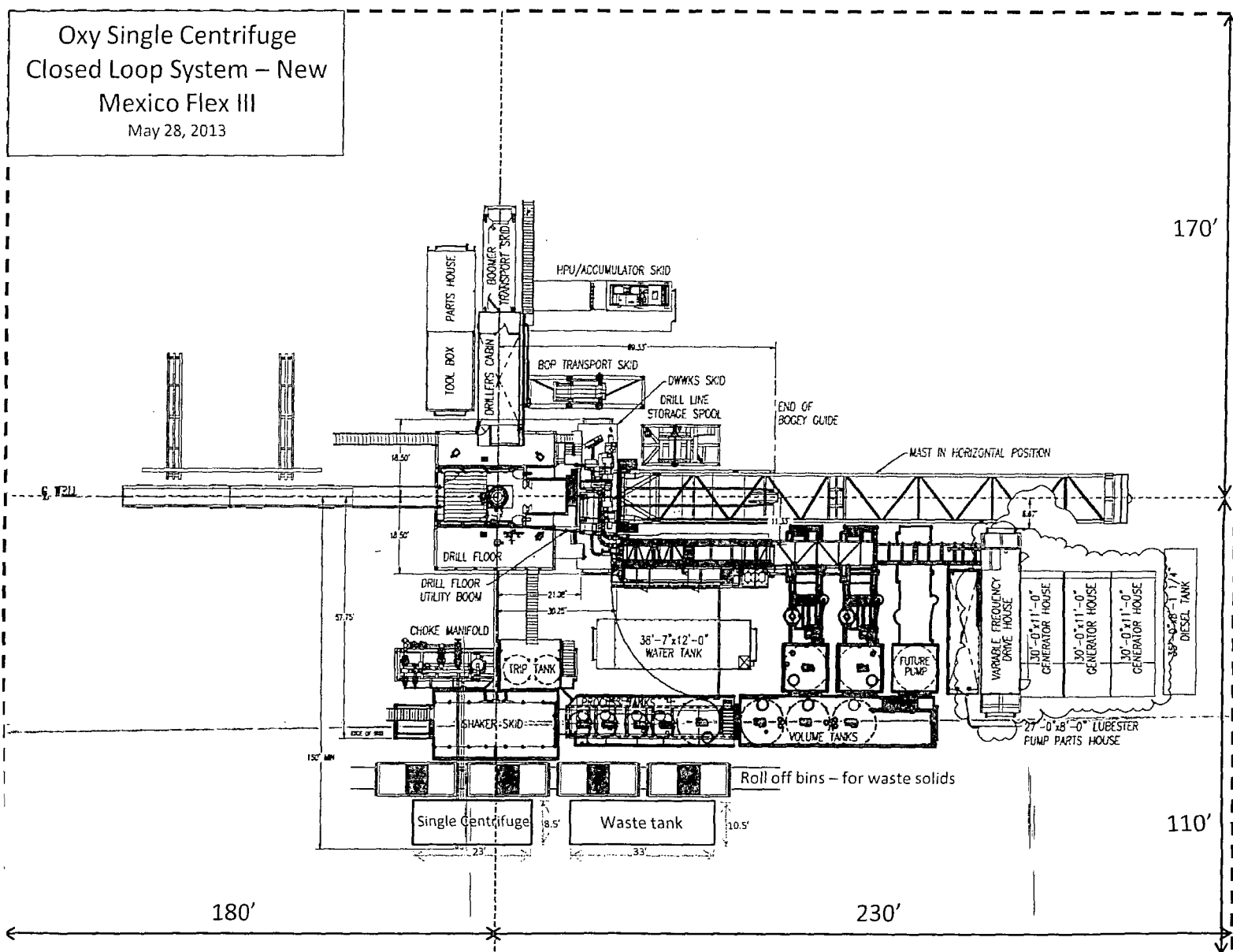


Gas Separator Routing Flex III Rigs

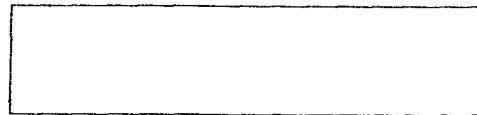
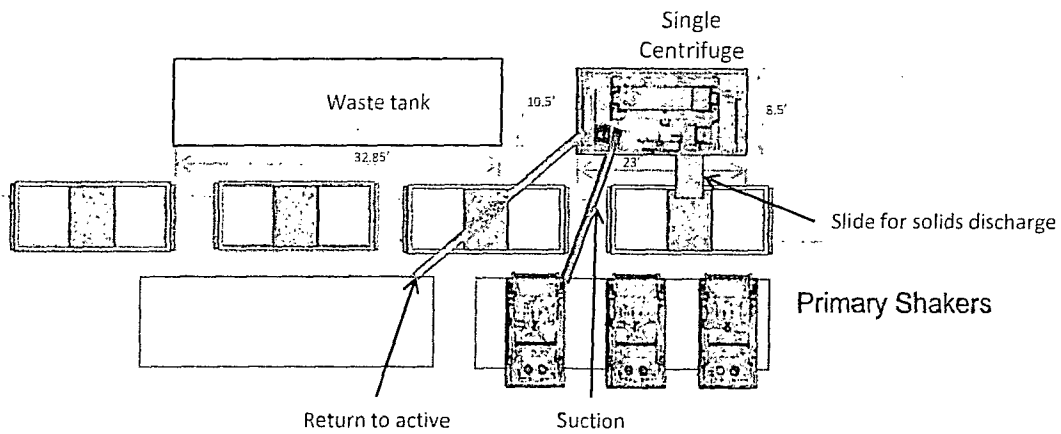


Note: Closed Loop System placed here. It does not appear on the schematics to show the flare line.

Oxy Single Centrifuge
Closed Loop System – New
Mexico Flex III
May 28, 2013



Oxy



Well Head



Oxy Single Centrifuge
Closed Loop System – New
Mexico Flex III
May 28, 2013