ATS-12-1191

SECRETARY'S POTASH

Form 3160-3
(April 2004)

OCD Artesia

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM89819

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

8. Lease Name and Well No.: Patton 18 Federal #8H (30-4917)

2. Name of Operator: OXY USA Inc. 16696

9. API Well No.: 30-015- 41343

3a. Address: P.O. Box 50250, Midland, TX 79710

3b. Phone No. (include area code): 432-685-5717

10. Field and Pool, or Exploratory: Cotton Draw Bone Spring (13367)

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

At surface: 150 FSL 1700 FEL SWSE (O)

At proposed prod. zone: 330 FNL 1700 FEL NWNE (B)

11. Sec., T. R. M. or Blk. and Survey or Area: Sec 18 T24S R31E

14. Distance in miles and direction from nearest town or post office*: 17 miles SE from Loving NM

12. County or Parish: Eddy

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): S-150' PP-330' / BH-330'

16. No. of acres in lease: 647.88

17. Spacing Unit dedicated to this well: 160

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: S-700'PP-582'BH-433'

19. Proposed Depth: PH 11700'-14745'M 10249'V (Lateral)

20. BLM/BIA Bond No. on file: NMB000862 - ESB000226

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3503.2' GL

22. Approximate date work will start*: 04/01/2013

23. Estimated duration: 35 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall 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 shall 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 authorized officer.

25. Signature: [signature] Name (Printed/Typed): David Stewart Date: 12/18/12

Title: Regulatory Advisor david_stewart@oxy.com

Approved by (Signature): /s/ Jesse J. Juen Name (Printed/Typed): Date: APR 30 2013

Title: STATE DIRECTOR Office: NM STATE 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.

*(Instructions on page 2)

Carlsbad Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

RECEIVED
MAY 08 2013
NMOCD ARTESIA

SEE ATTACHED FOR CONDITIONS OF APPROVAL

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015- 41393	13367	Cotton Draw Bone Spring

Property Code	Property Name	Well Number
304917	PATTON "18" FED.	8H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	3503.2'

Surface Location

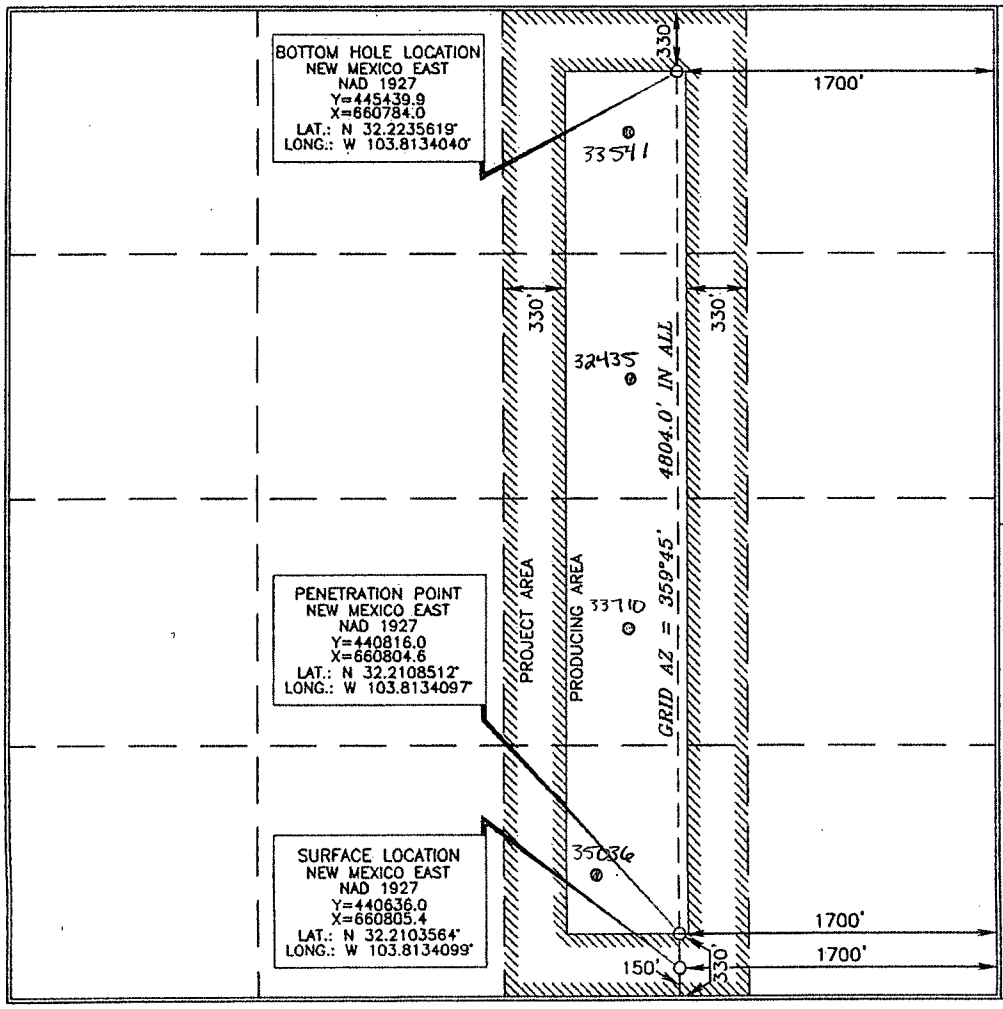
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	18	24 SOUTH	31 EAST, N.M.P.M.		150'	SOUTH	1700'	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	18	24 SOUTH	31 EAST, N.M.P.M.		330'	NORTH	1700'	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160	N		

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature 12/18/12 Date

David Stewart - Reg. Advi.
Printed Name

david_stewart@oxy.com
E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

OCTOBER 29, 2012
Date of Survey

Signature and Seal of Professional Surveyor:

Terry J. Asel 11/6/2012
Certificate Number 15079

WO# 121029WL-c (KA)

OPERATOR CERTIFICATION

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 18th day of December, 2012.

Name: Peter Lawrence

Position: Reservoir Management Team Leader

Address: 5 Greenway Plaza, Suite 110, Houston, TX 77046

Telephone: 713-215-7644

E-mail: (optional): peter_lawrence@oxy.com

Company: OXY USA Inc.

Field Representative (if not above signatory): Dusty Weaver

Address (If different from above): P.O. Box 50250 Midland, TX 79710

Telephone (if different from above): 432-685-5723

E-mail (if different from above): calvin_weaver@oxy.com

United States Department of the Interior
Bureau of Land Management
Carlsbad Field Office
620 East Greene Street
Carlsbad, New Mexico 88220

Attention: David Stewart

RE: Patton 18 Federal #8H
Section 18, T24S-R31E
Eddy County, New Mexico

STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS

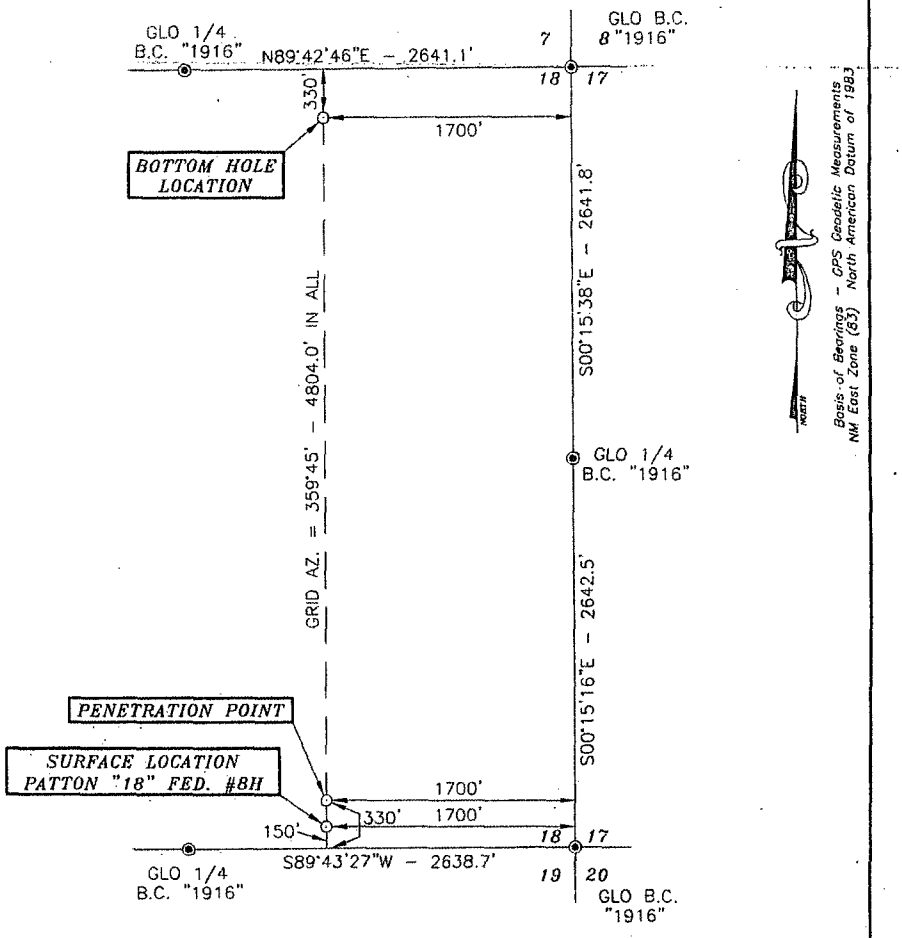
OPERATOR NAME:	OXY USA Inc.
ADDRESS:	P.O. Box 4294 Houston, Texas 77210-4294

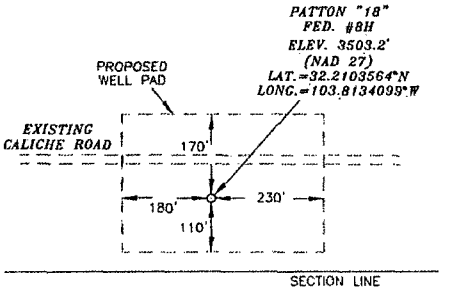
The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described below:

LEASE NO.:	NMNM 89819 (647.88 Acres)
LEGAL DESCRIPTION:	SL: 150' FSL & 1700' FEL SWSE PBHL: 330' FNL & 1700' FEL NWNE Section 18 T24S-R31E Eddy County, New Mexico
FORMATIONS:	2nd Bone Spring Sand
BOND COVERAGE:	Individual and Nationwide
BLM BOND FILE NO.:	NMB000862 (Individual), ESB000226 (Nationwide)
AUTHORIZED SIGNATURE:	OXY USA Inc. Chris Cañon
TITLE:	Land Negotiator
DATE:	December 12, 2012

600 x 600

SECTION 18, TOWNSHIP 24 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY NEW MEXICO





SCALE- 1"=300'

DRIVING DIRECTIONS:
BEGINNING AT THE INTERSECTION OF STATE HWY. #128 AND COUNTY ROAD #787 (TWIN WELLS ROAD), GO SOUTH ON COUNTY ROAD #787 FOR 5.6 MILES, TURN RIGHT AND GO WEST FOR 0.4 MILES, TURN LEFT ON CALICHE ROAD AND GO SOUTH FOR 0.6 MILES, TURN LEFT AND GO SOUTHEAST FOR 0.1 MILES, GO EAST FOR 0.1 MILES, GO SOUTH FOR 0.1 MILES, GO EAST FOR 0.1 MILES TO LOCATION.

TERRY J ASEL NEW MEXICO 15079 PROFESSIONAL LAND SURVEYOR

LEGEND

◉ - DENOTES FOUND MONUMENT AS NOTED

1000' 0 1000' 2000' FEET

SCALE: 1"=1000'

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 11/6/2012

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

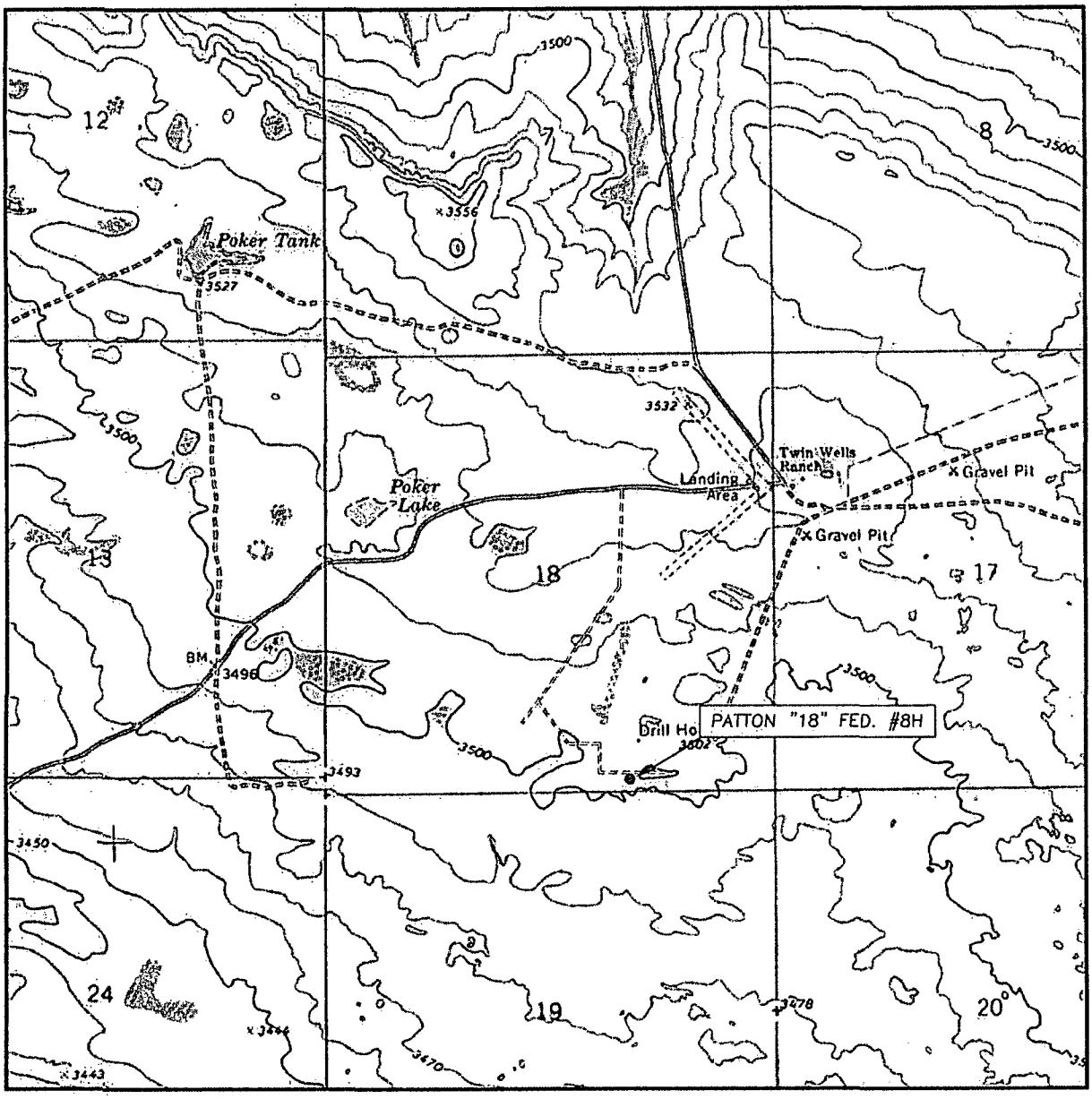
OXY USA INC.

PATTON "18" FED. #8H LOCATED AT 150' FSL & 1700' FEL IN SECTION 18, TOWNSHIP 24 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 10/29/12	Sheet 1 of 1 Sheets	
W.O. Number: 121029WL-c	Drawn By: KA	Rev:
Date: 11/01/12	121029WL-c	Scale:1"=1000'

LUM

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: 10'

SEC. 18 TWP. 24-S RGE. 31-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 150' FSL & 1700' FEL

ELEVATION 3503.2'

OPERATOR OXY USA INC.

LEASE PATTON "18" FED. #8H

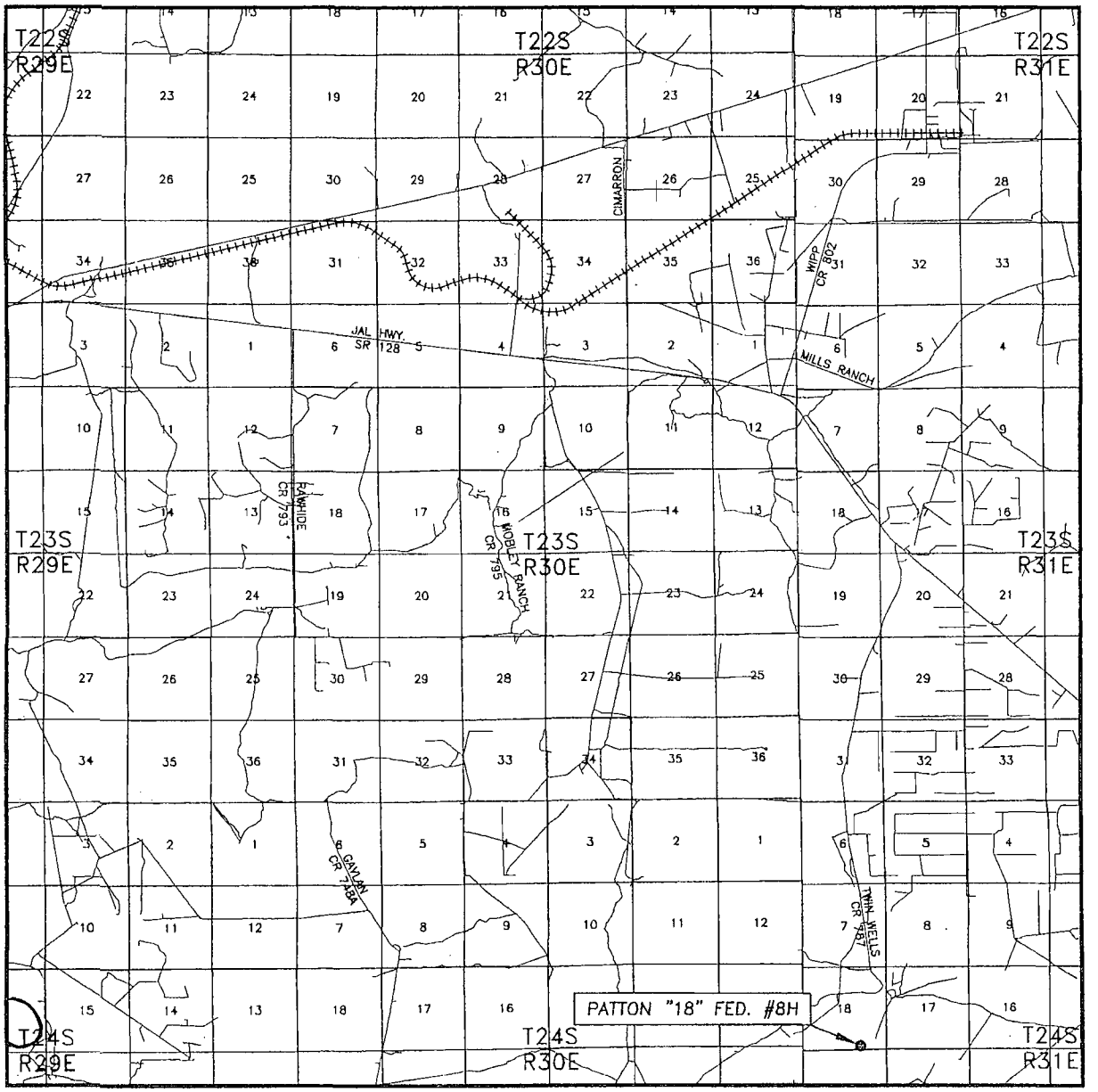
U.S.G.S. TOPOGRAPHIC MAP
BIG SINKS, N.M.

Asel Surveying

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

VM

VICINITY MAP



SCALE: 1" = 2 MILES

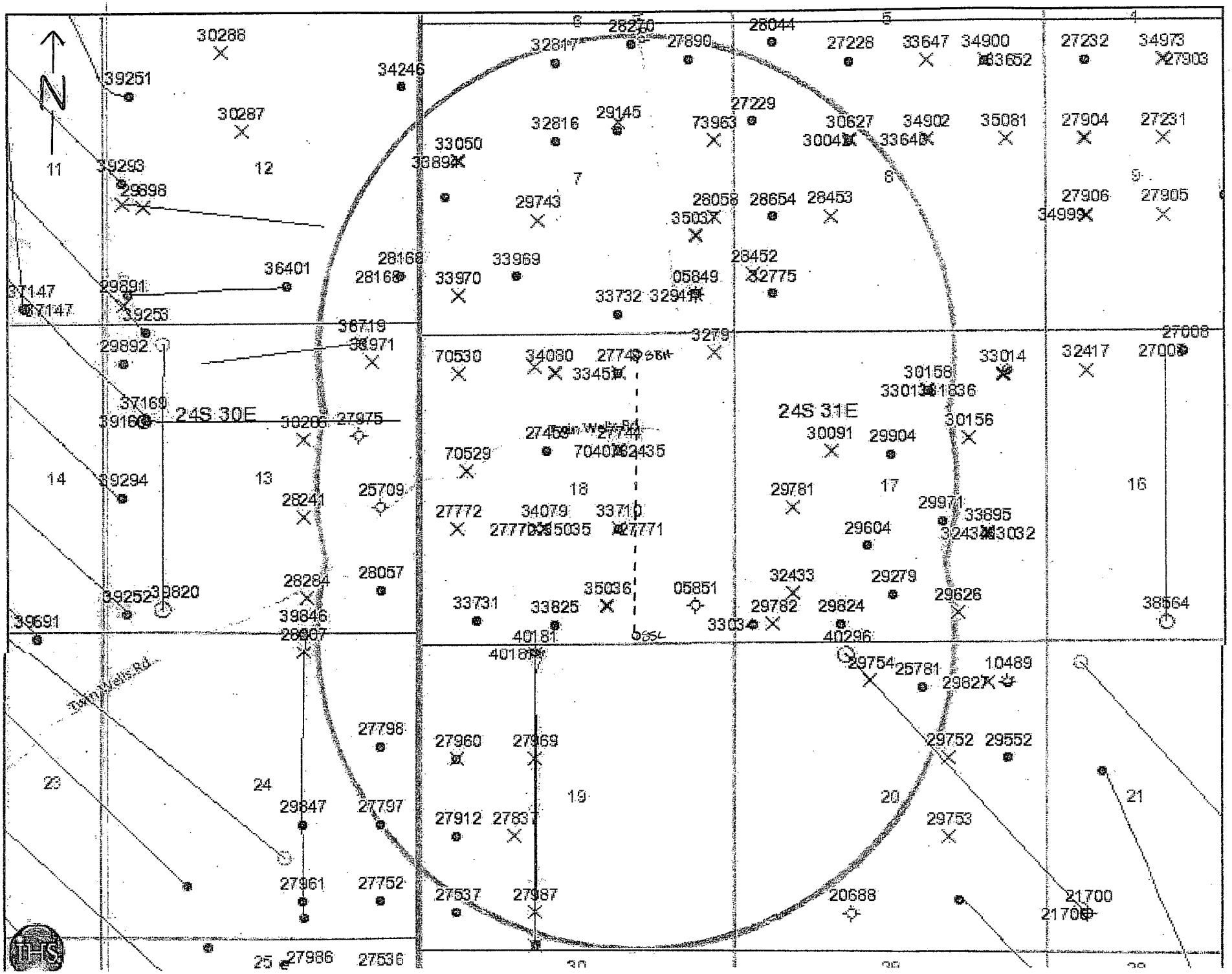
SEC. 18 TWP. 24-S RGE. 31-E
SURVEY N.M.P.M.
COUNTY EDDY
DESCRIPTION 150' FSL & 1700' FEL
ELEVATION 3503.2'
OPERATOR OXY USA INC.
LEASE PATTON "18" FED. #8H

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

DIRECTIONS BEGINNING AT THE INTERSECTION OF STATE HWY. #128 AND COUNTY ROAD #787 (TWIN WELLS ROAD), GO SOUTH ON COUNTY ROAD #787 FOR 5.6 MILES, TURN RIGHT AND GO WEST FOR 0.4 MILES, TURN LEFT ON CALICHE ROAD AND GO SOUTH FOR 0.6 MILES, TURN LEFT AND GO SOUTHEAST FOR 0.1 MILES, GO EAST FOR 0.1 MILES, GO SOUTH FOR 0.1 MILES, GO EAST FOR 0.1 MILES TO LOCATION.

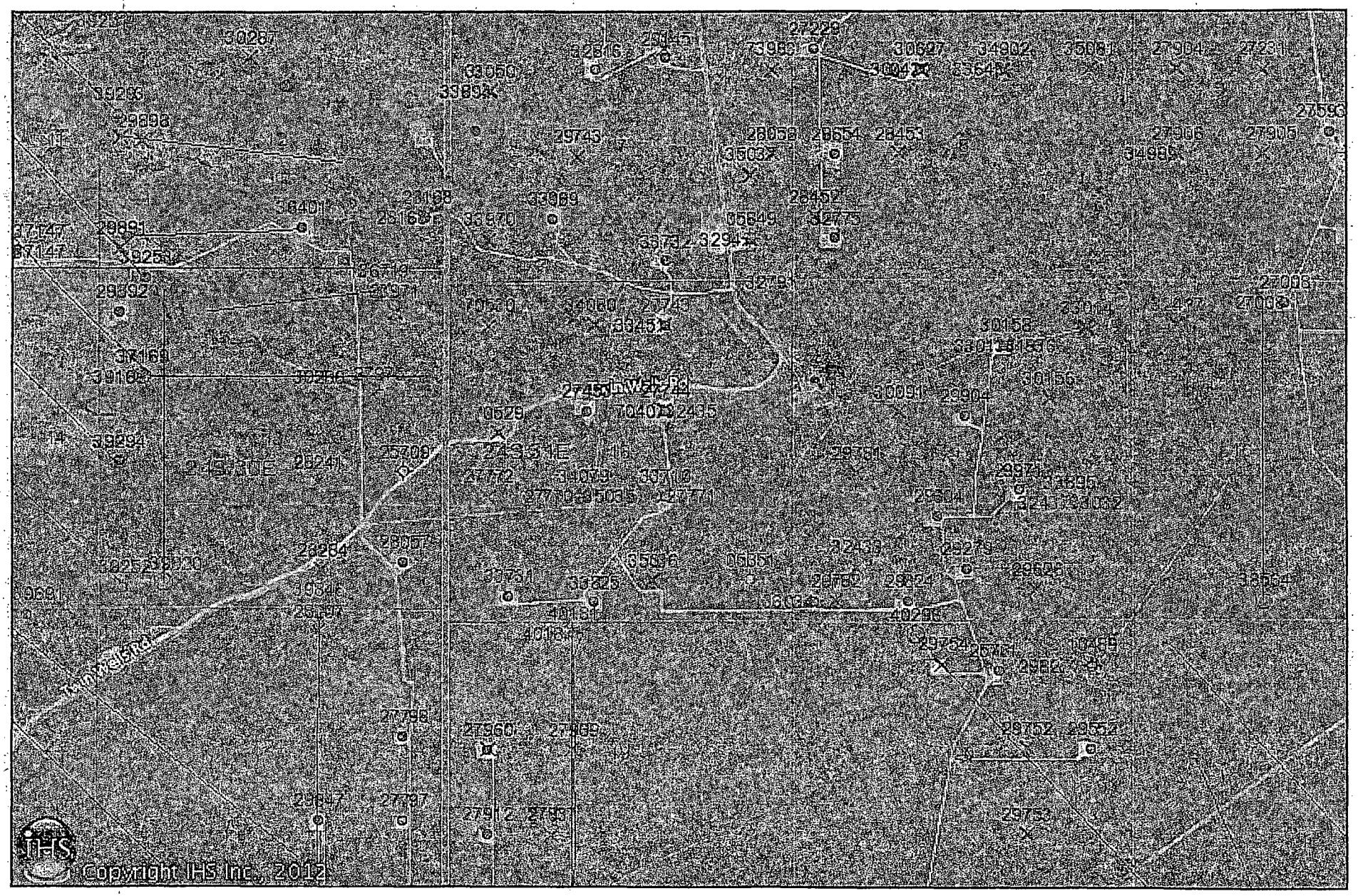
Patton 18 Federal #8H - 1 Mile AOR

1 mi AOR Plat



1 mi AOR Plat 2

Patton 18 Federal #8H



APD Deficiency Letter
OXY USA Inc.
Patton 18 Federal #8H
150 FSL 1700 FEL SWSE(O) Sec 18 T24S R31E

OXY is having Halliburton do an analysis on the production casing lead cementing program that was originally proposed in the APD. When this is complete, OXY should be able to answer your question "will this cement hold up for the life of the well". At that time OXY will discuss the results with you and we can determine how to proceed. This is going to take some time, so we are proposing to amend the production casing cementing program back to a three stage job, please see attached for the proposed changes highlighted in yellow.

Also attached are the amended well site & facility layout diagrams with the requested changes.

AMENDED DRILLING PROGRAM

Operator Name/Number:	**OXY USA Inc.**	**16696**
Lease Name/Number:	**Patton 18 Federal #8H**	**304917**
Pool Name/Number:	**Cotton Draw Bone Spring**	**13367**
Surface Location:	**150 FSL 1700 FEL SWSE(O) Sec 18 T24S R31E**	**Federal Lease No:NMNM89819**
Penetration Point:	**330 FSL 1700 FEL SWSE(O) Sec 18 T24S R31E**	
Bottom Hole Location:	**330 FNL 1700 FEL NWNE(B) Sec 18 T24S R31E**	

Proposed TD: **Pilot Hole 11700' TVD** **Horizontal Lateral 10249' TVD** **14745' TMD**
SL - Lat: 32.2103564 **Long: 103.8134099** **X= 660805.4** **Y= 440636.0** **NAD - 1927**
BH - Lat: 32.2235619 **Long: 103.8134040** **X= 660784.0** **Y= 445439.9** **NAD - 1927**
Elevation: **3503.2' GL**

1. Geologic Name of Surface Formation:

a. Permian

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

Geological Marker	Depth	Type
a. Rustler	558'	Formation
b. Top Salt	923'	Formation
c. Base Salt	4023'	Formation
d. Anhydrite	4278'	Oil
e. Delaware	4308'	Oil
f. Bone Spring	8083'	Oil
g. 1st Bone Spring	8873'	Oil
h. 2nd Bone Spring	9413'	Oil
i. 3rd Bone Spring	11700'	Oil

Per NMSEO website, no fresh water wells were found in a 9 section search.

3. Casing Program:

Hole Size	Interval	OD Csg	Weight	Collar	Grade	Condition	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17-1/2"	0-898'	13-3/8"	48	ST&C	H-40	New	2.2	12.53	2.36
				Hole filled with 8.4# Mud			740#	1730#	
12-1/4"	0-~~4400~~ 4200	9-5/8"	40	LT&C	L-80	New	2.11	1.27	2.93
				Hole filled with 10.2# Mud			3087#	5745#	
8-3/4"	0-14745'	5-1/2"	20	BT&C	L-80	New	1.77	1.4	1.98
DVT @ 6300' POST @ 4450'				Hole filled with 9.6# Mud			8831#	9189#	

See COA

Collapse and burst loads calculated using Stress Check with anticipated loads

4. Cement Program

a. 13-3/8" Surface — Circulate cement to surface w/ 640sx PP cmt w/ 4% Bentonite + 1% CaCl2 + .125#/sx Poly-E-Flake, 13.5ppg 1.73 yield 1006# 24hr CS 165% Excess followed by 440sx PP cmt w/ 2% CaCl2, 14.8ppg 1.35 yield 1326# 24hr CS 165% Excess.

b. 9-5/8" Intermediate — Circulate cement to surface w/ 1180sx HES light PP cmt w/ 5% Salt + .125#/sx Po;y-E-Flake + 5#/sx Kol Seal + .35% HR-800, 12.9ppg 1.88 yield 500# 24hs CS 105% Excess followed by 320sx PP cmt w/ .5% WellLife-734, 14.8ppg 1.33 yield 1586# 24hr CS 105% Exc.

c. Pilot Hole Plug — Plug #1 cement w/ 368sx 50/50 Poz/Premium cmt w/ .3% CFR-3 + .3% HR-601, 14.4ppg 1.23 yield >1500# 24hr CS 35% excess from 11700' to +/-10900'.
Plug #2 cement w/ 461sx 50/50 Poz/Premium cmt w/ .3% CFR-3 + .2% HR-601, 14.4ppg 1.22 yield >1500# 24hr CS 35% excess from 10900' to +/-9900'.
Plug #3 cement w/ 358sx PP cmt w/ .5% CFR-3 + .2% HR-800, 17.5ppg .95 yield >1500# 24hr CS 35% Excess from 9900' to +/-9300'

d. 5-1/2" Production — Cement 1st stage w/ 730sx HES light PP cmt w/ 3#/sx Salt + .4% HR-601 + 3#/sx Kol-Seal, 12.4ppg 2.09 yield 500# 24hr CS 85% Excess followed by 1200sx Super H w/ .5% Halad-344 - .4% CFR-3 + 3#/sx Kol-Seal + .20% HR-601 + .125#/sx Poly-E-Flake + 3#/sx salt, 13.2ppg 1.66 yield 1673# 24hr CS 85% Excess Calc TOC-6295'
Cement 2nd stage w/ 390sx HES light PP cmt w/ 3#/sx Salt + 3#/sx Kol-Seal,12.4ppg 2.07 yield 500# 24hr CS 100% Excess followed by 100sx PP cmt w/ 315% HR-602, 14.8ppg 1.33 yield 1920# 24hr CS 100% Excess, Calc TOC-4445'
Cement 3rd stage w/ 570sx HES Light PP cmt w/ 3#/sx Salt, 12.4ppg 2.05 yield 548# 24hr CS 10% Excess followed by 100sx PP cmt w/ 2% CaCl2, 14.8ppg 1.33 yield 1943# 24hr CS 200% Excess, Circ Surface

Description of Cement Additives: Calcium Chloride, Salt (Accelerator); CFR-3 (Dispersant); Bentonite (Light Weight Additive); Kol-Seal, Poly-E-Flake (Lost Circulation Additive); Halad R-344 (Low Fluid Loss Control); HR-601 (Retarder)

The above cement volumes could be revised pending the caliper measurement.

5. Pressure Control Equipment:

Surface: None

Intermediate/Production: 13-5/8" 10M three ram stack w/ 5M annular preventer, 5M Choke Manifold

The 13-5/8" 5000psi blowout prevention equipment will be installed and operational after setting the 13-3/8" surface casing; the rotating head body will be installed but the rubber will be installed when it becomes operationally necessary.

The BOP and ancillary BOPE will be tested by a third party upon installation of the surface casing. All equipment will be tested to 250/5000psi for 10 minutes and charted, except the annular, which will be tested to 70% of working pressure. This is to be in compliance with the Onshore Order # 2.

The pipe rams will be functionally tested during each 24 hour period; the blind rams will be functionally tested on each trip out of the hole. These functional tests will be documented on the Daily Driller's Log. Other accessory equipment (BOPE) will include a safety valve and subs as needed to fit all drill strings, and a 2" kill line and 3 " choke line having a 5000psi WP rating. Oxy requests that the system be tested at 5000psi WP.

OXY also requests a variance to connect the BOP choke outlet to the choke manifold using a co-flex hose that is manufactured by Contitech Rubber Industrial KFT. It is a 3" ID X 35' flexible hose rated to 10000psi working pressure. It has been tested to15000psi and is built to API Spec 16C. Once the flex line is installed, it will be tied down with safety clamps, see attached for certifications.

6. **Proposed Mud Circulation System**

Depth	Mud Wt. ppg	Visc sec	Fluid Loss	Type System
0 - 898'	8.5-9.0	28-38	NC	Fresh Water/Spud Mud
898 - ~~4400'~~ 4200	9.8-10.2	28-32	NC	Fresh Water/NaCl Brine
~~4400~~ - 11700'	8.8-9.7	28-34	NC	Cut Brine/Sweeps
9300 - TD'	9.2-9.7	32-50	<10	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. Appropriately weighted mud will be used to isolate potential gas, oil, and water zones until such time as casing can be cemented into place for zonal isolation.

7. **Auxiliary Well Control and Monitoring Equipment:**

a. A Kelly cock will be in the drill string at all times.
b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor unobstructed and readily accessible at all times.
c. Hydrogen Sulfide detection equipment will be in operation after drilling out the surface casing shoe until the production casing is cemented. Breathing equipment will be on location upon drilling the surface casing shoe until total depth is reached. If Hydrogen Sulfide is encountered, measured amounts and formations will be reported to the BLM.

8. **Logging, Coring and Testing Program:** See COA

a. Drill stem tests are not anticipated but if done will be based on geological sample shows.
b. The logging program will consist of a Triple Combo: GR/Den/Neu/Res from Pilot TD to base of intermediate, GR/Neu from TD to surface. MWD-GR from KOP to TD. .
c. Rotary sidewall cores - 30 samples in the 2nd Bone Spring Sands
d. Mud logging will be initiated from the base of intermediate casing to TD.

9. **Potential Hazards:**

No abnormal pressures or temperatures are anticipated. The highest anticipated pressure gradient would be 0.468 psi/ft. Maximum anticipated bottomhole pressure is 5475psi.
If H2S is encountered the operator will comply with the provisions of Onshore Oil & Gas Order No.6.
All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well.
Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

10. **Anticipated Starting Date and Duration of Operations:**

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 35 days. If production casing is run, then an additional 30 days will be needed to complete the well and construct surface facilities and/or lay flow lines in order to place well on production.

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

No records found.

PLSS Search:

Section(s): 7, 8, 17, 18, 19, 20 **Township:** 24S **Range:** 31E

No records found.

PLSS Search:

Section(s): 12, 13, 24 **Township:** 24S **Range:** 30E

DP-1

Patton 18 Fed #8H
Eddy Co, New Mexico

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	11700.00	0.00	0.00	11700.00	0.00	0.00	0.00	0.00	0.00	PBHL Pilot

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Patton 18 Fed #8H	0.00	0.00	440636.00	660805.40	32°12'37.283N	103°48'48.276W	N/A

TARGET DETAILS

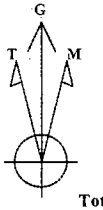
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL Pilot	11700.00	0.00	0.00	440636.00	660805.40	Point

SITE DETAILS

Patton 18 Fed #8H

Site Centre Northing: 440636.00
Easting: 660805.40

Ground Level: 3503.20
Positional Uncertainty: 0.00
Convergence: 0.28

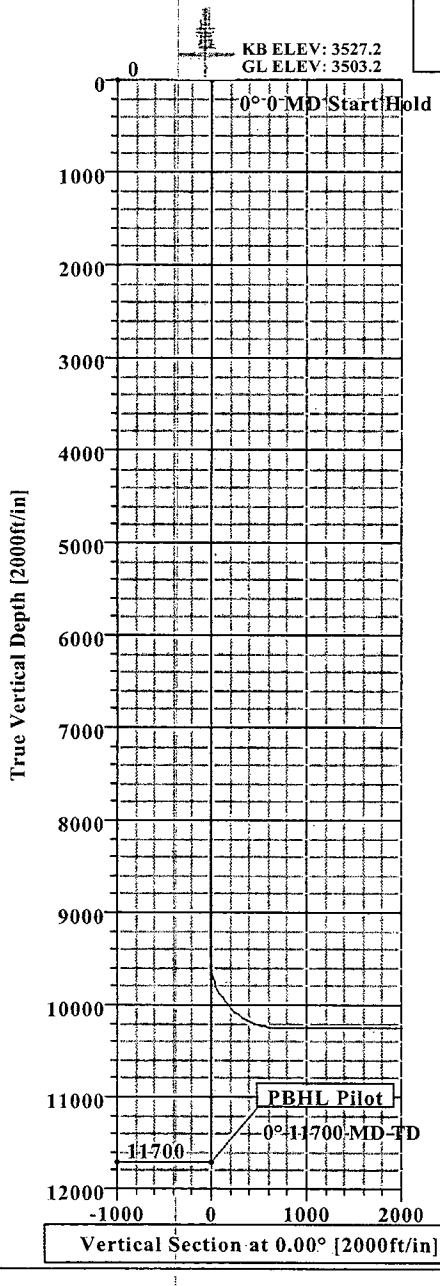


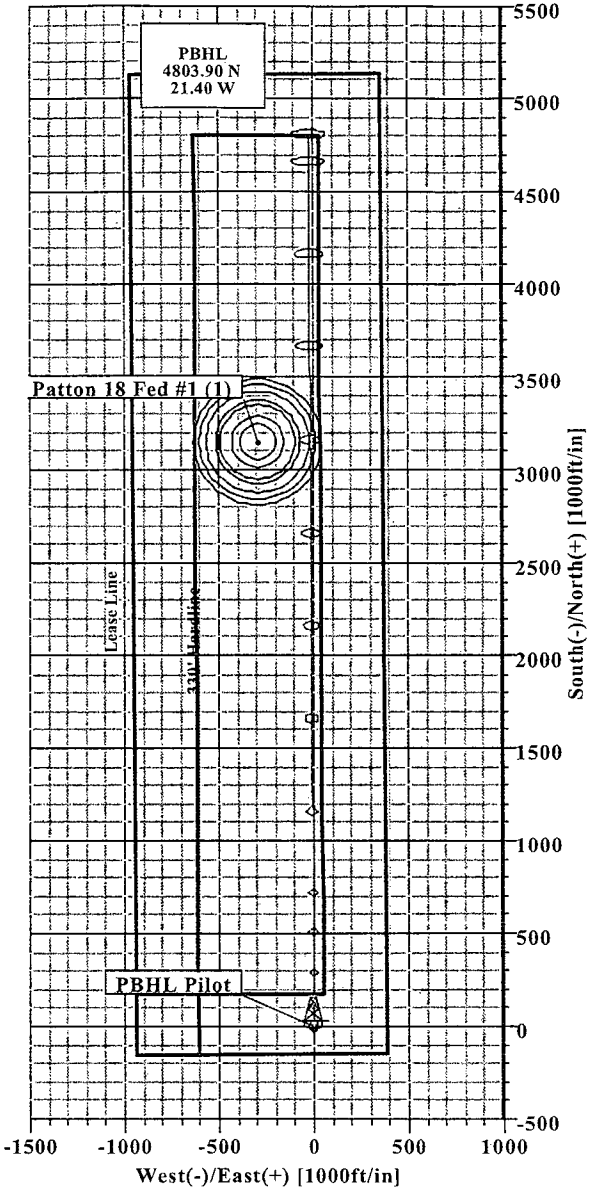
Azimuths to Grid North
Mag. Dec. 7.57
Grid Conv .28
Total Correction 7.29
BGGM2012

Total Correction to Grid North: 7.29°

LEGEND

- Patton 18 Fed #1 (1)
- Patton 18 Fed #8H (Lateral)
- Pilot
- Plan #1





Weatherford®

Plan: Plan #1 (Patton 18 Fed #8H/Pilot)

Created By: Patrick Rudolph Date: 11/15/2012

DP-2

Weatherford International Ltd.

WFT Plan Report - X & Y's

Company:	Occidental Permian Ltd.	**Date:**	11/15/2012	**Time:** 14:23:51	**Page:** 1
Field:	Eddy Co. NM (Nad 27)	**Co-ordinate(NE) Reference:**	Well: Patton 18 Fed #8H, Grid North		
Site:	Patton 18 Fed #8H	**Vertical (TVD) Reference:**	SITE 3527.2		
Well:	Patton 18 Fed #8H	**Section (VS) Reference:**	Well (0.00N,0.00E,0.00Azi)		
Wellpath:	Pilot	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Sybase

Plan:	Plan #1	**Date Composed:**	11/15/2012
		Version:	1
Principal:	Yes	**Tied-to:**	From Surface

Site:	Patton 18 Fed #8H						
Site Position:		**Northing:**	440636.00 ft	**Latitude:**	32 12 37.283	N	
From:	Map	**Easting:**	660805.40 ft	**Longitude:**	103 48 48.276	W	
Position Uncertainty:	0.00 ft			**North Reference:**	Grid		
Ground Level:	3503.20 ft			**Grid Convergence:**	0.28	deg	

Well:	Patton 18 Fed #8H				**Slot Name:**		
Well Position:	+N/-S 0.00 ft	**Northing:**	440636.00 ft	**Latitude:**	32 12 37.283	N	
	+E/-W 0.00 ft	**Easting :**	660805.40 ft	**Longitude:**	103 48 48.276	W	
Position Uncertainty:	0.00 ft						

Wellpath:	Pilot			**Drilled From:**	Surface
				Tie-on Depth:	0.00 ft
Current Datum:	SITE	**Height**	3527.20 ft	**Above System Datum:**	Mean Sea Level
Magnetic Data:	5/1/2013			**Declination:**	7.47 deg
Field Strength:	48419 nT			**Mag Dip Angle:**	60.09 deg

Vertical Section:	**Depth From (TVD)** ft	**+N/-S** ft	**+E/-W** ft	**Direction** deg
	0.00	0.00	0.00	0.00

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11700.00	0.00	0.00	11700.00	0.00	0.00	0.00	0.00	0.00	0.00	PBHL Pilot

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
1400.00	0.00	0.00	1400.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
1700.00	0.00	0.00	1700.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
1800.00	0.00	0.00	1800.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
1900.00	0.00	0.00	1900.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
2100.00	0.00	0.00	2100.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
2400.00	0.00	0.00	2400.00	0.00	0.00	0.00	0.00	440636.00	660805.40	

JP-3

Weatherford International Ltd.

WFT Plan Report - X & Y's

Company:	Occidental Permian Ltd.	Date:	11/15/2012	Time:	14:23:51	Page:	2
Field:	Eddy Co. NM (Nad 27)	Co-ordinate(NE) Reference:	Well: Patton 18 Fed #8H, Grid North				
Site:	Patton 18 Fed #8H	Vertical (TVD) Reference:	SITE 3527.2				
Well:	Patton 18 Fed #8H	Section (VS) Reference:	Well (0.00N,0.00E,0.00Azi)				
Wellpath:	Pilot	Survey Calculation Method:	Minimum Curvature			Db:	Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
2700.00	0.00	0.00	2700.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
2800.00	0.00	0.00	2800.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
2900.00	0.00	0.00	2900.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
3100.00	0.00	0.00	3100.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
3300.00	0.00	0.00	3300.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
3400.00	0.00	0.00	3400.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
3600.00	0.00	0.00	3600.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
3700.00	0.00	0.00	3700.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
3800.00	0.00	0.00	3800.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
3900.00	0.00	0.00	3900.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
4100.00	0.00	0.00	4100.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
4200.00	0.00	0.00	4200.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
4300.00	0.00	0.00	4300.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
4400.00	0.00	0.00	4400.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
4500.00	0.00	0.00	4500.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
4600.00	0.00	0.00	4600.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
4700.00	0.00	0.00	4700.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
4800.00	0.00	0.00	4800.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
4900.00	0.00	0.00	4900.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
5100.00	0.00	0.00	5100.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
5200.00	0.00	0.00	5200.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
5300.00	0.00	0.00	5300.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
5400.00	0.00	0.00	5400.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
5500.00	0.00	0.00	5500.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
5700.00	0.00	0.00	5700.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
5800.00	0.00	0.00	5800.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
5900.00	0.00	0.00	5900.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
6000.00	0.00	0.00	6000.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
6100.00	0.00	0.00	6100.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
6200.00	0.00	0.00	6200.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
6300.00	0.00	0.00	6300.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
6400.00	0.00	0.00	6400.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
6500.00	0.00	0.00	6500.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
6600.00	0.00	0.00	6600.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
6700.00	0.00	0.00	6700.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
6800.00	0.00	0.00	6800.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
6900.00	0.00	0.00	6900.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
7000.00	0.00	0.00	7000.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
7100.00	0.00	0.00	7100.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
7200.00	0.00	0.00	7200.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
7300.00	0.00	0.00	7300.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
7400.00	0.00	0.00	7400.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
7500.00	0.00	0.00	7500.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
7600.00	0.00	0.00	7600.00	0.00	0.00	0.00	0.00	440636.00	660805.40	

DP-4

Weatherford International Ltd.

WFT Plan Report - X & Y's

Weatherford

Company:	Occidental Permian Ltd.	Date:	11/15/2012	Time:	14:23:51	Page:	3
Field:	Eddy Co, NM (Nad 27)	Co-ordinate(NE) Reference:	Well: Patton 18 Fed #8H, Grid North				
Site:	Patton 18 Fed #8H	Vertical (TVD) Reference:	SITE 3527.2				
Well:	Patton 18 Fed #8H	Section (VS) Reference:	Well (0.00N,0.00E,0.00Azi)				
Wellpath:	Pilot	Survey Calculation Method:	Minimum Curvature			Db:	Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
7700.00	0.00	0.00	7700.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
7800.00	0.00	0.00	7800.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
7900.00	0.00	0.00	7900.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
8000.00	0.00	0.00	8000.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
8100.00	0.00	0.00	8100.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
8200.00	0.00	0.00	8200.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
8300.00	0.00	0.00	8300.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
8400.00	0.00	0.00	8400.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
8500.00	0.00	0.00	8500.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
8600.00	0.00	0.00	8600.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
8700.00	0.00	0.00	8700.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
8800.00	0.00	0.00	8800.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
8900.00	0.00	0.00	8900.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
9000.00	0.00	0.00	9000.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
9100.00	0.00	0.00	9100.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
9200.00	0.00	0.00	9200.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
9300.00	0.00	0.00	9300.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
9400.00	0.00	0.00	9400.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
9500.00	0.00	0.00	9500.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
9600.00	0.00	0.00	9600.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
9700.00	0.00	0.00	9700.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
9800.00	0.00	0.00	9800.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
9900.00	0.00	0.00	9900.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
10000.00	0.00	0.00	10000.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
10100.00	0.00	0.00	10100.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
10200.00	0.00	0.00	10200.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
10300.00	0.00	0.00	10300.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
10400.00	0.00	0.00	10400.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
10500.00	0.00	0.00	10500.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
10600.00	0.00	0.00	10600.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
10700.00	0.00	0.00	10700.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
10800.00	0.00	0.00	10800.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
10900.00	0.00	0.00	10900.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
11000.00	0.00	0.00	11000.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
11100.00	0.00	0.00	11100.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
11200.00	0.00	0.00	11200.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
11300.00	0.00	0.00	11300.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
11400.00	0.00	0.00	11400.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
11500.00	0.00	0.00	11500.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
11600.00	0.00	0.00	11600.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
11700.00	0.00	0.00	11700.00	0.00	0.00	0.00	0.00	440636.00	660805.40	PBHL Pilot

Targets

Name	Description	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ----> Deg	Min	Sec	<---- Longitude ----> Deg	Min	Sec
	Dip Dir											
PBHL Pilot		11700.00	0.00	0.00	440636.00	660805.40	32	12	37.283 N	103	48	48.276 W
-Plan hit target												

DP-5

Occidental Permian Ltd.

Patton 18 Fed #8H
Eddy Co, New Mexico

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	359.74	0.00	0.00	0.00	0.00	0.00	0.00	
2	9532.80	0.00	359.74	9532.80	0.00	0.00	0.00	0.00	0.00	
3	10657.80	90.00	359.74	10249.00	716.19	-3.19	8.00	359.74	716.20	
4	14745.55	90.00	359.74	10249.00	4803.90	-21.40	0.00	0.00	4803.95	PBHL Lateral

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Patton 18 Fed #8H	0.00	0.00	440636.00	660805.40	32°12'37.283N	103°48'48.276W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL Lateral	10249.00	4803.90	-21.40	445439.90	660784.00	Point

SITE DETAILS

Patton 18 Fed #8H

Site Centre Northing: 440636.00
Easting: 660805.40

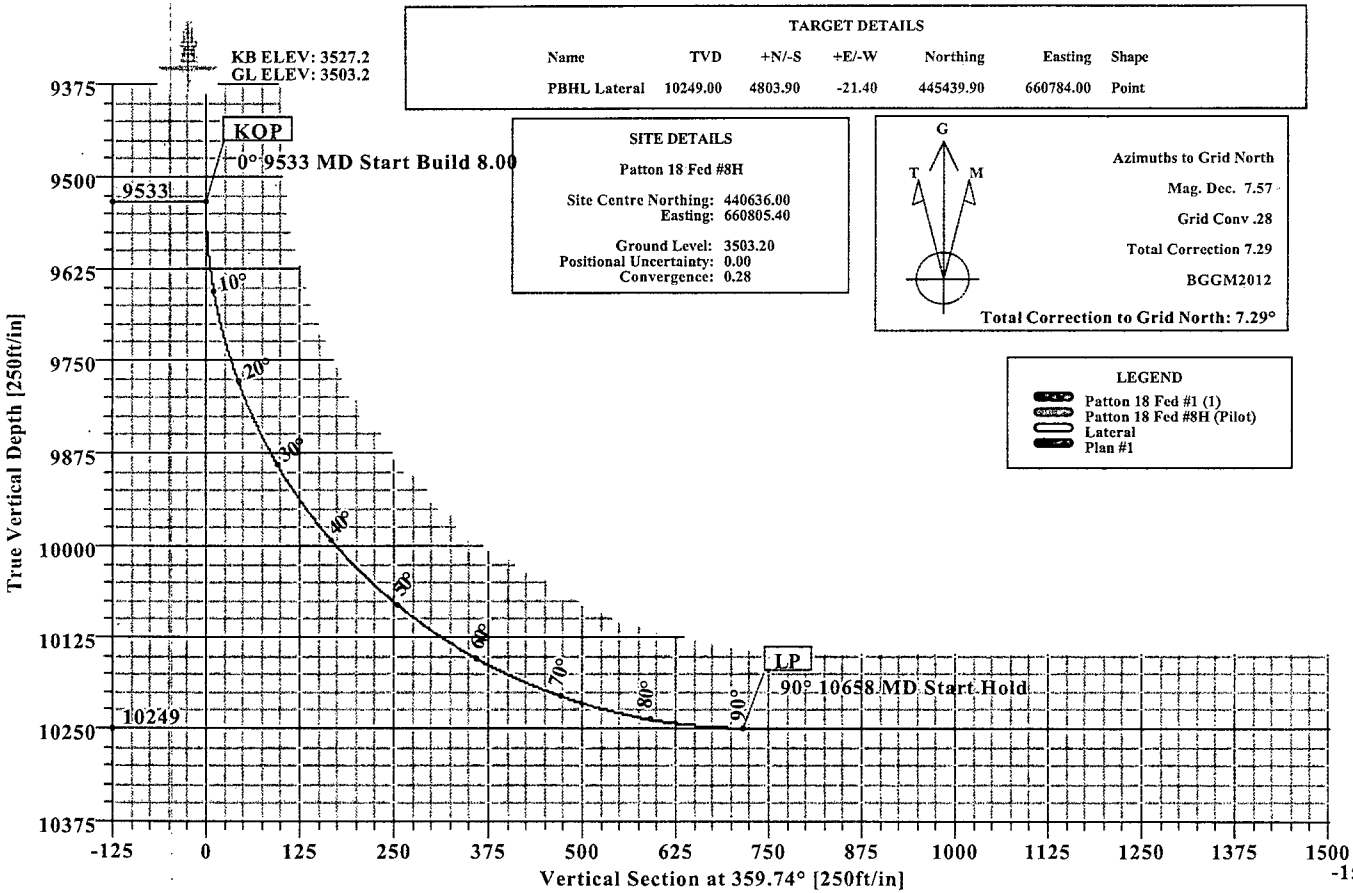
Ground Level: 3503.20
Positional Uncertainty: 0.00
Convergence: 0.28

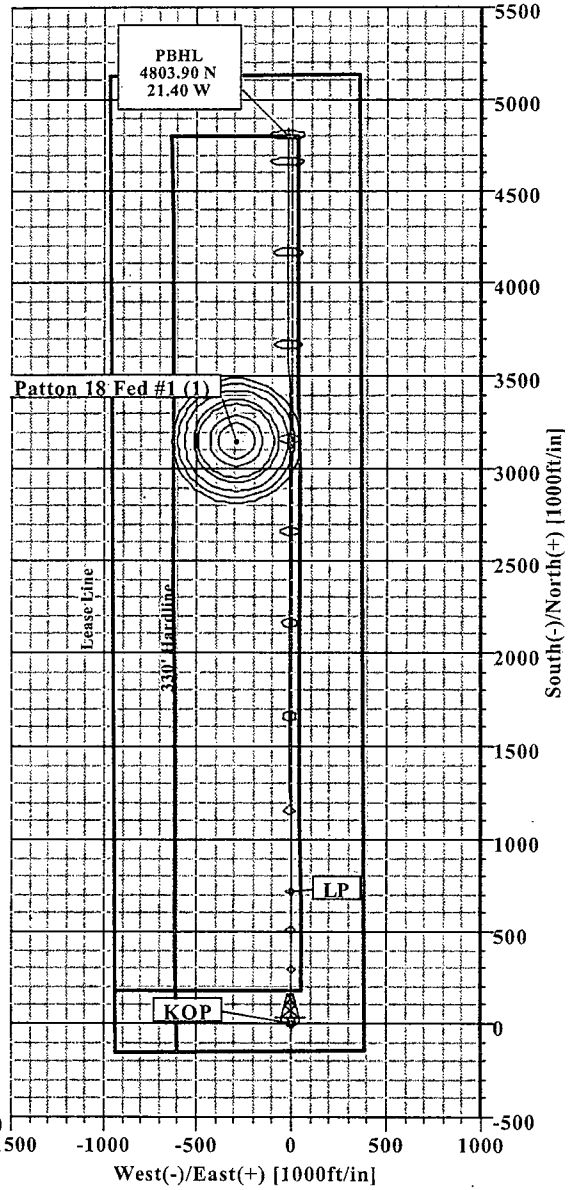
Azimuths to Grid North
Mag. Dec. 7.57
Grid Conv .28
Total Correction 7.29
BGGM2012

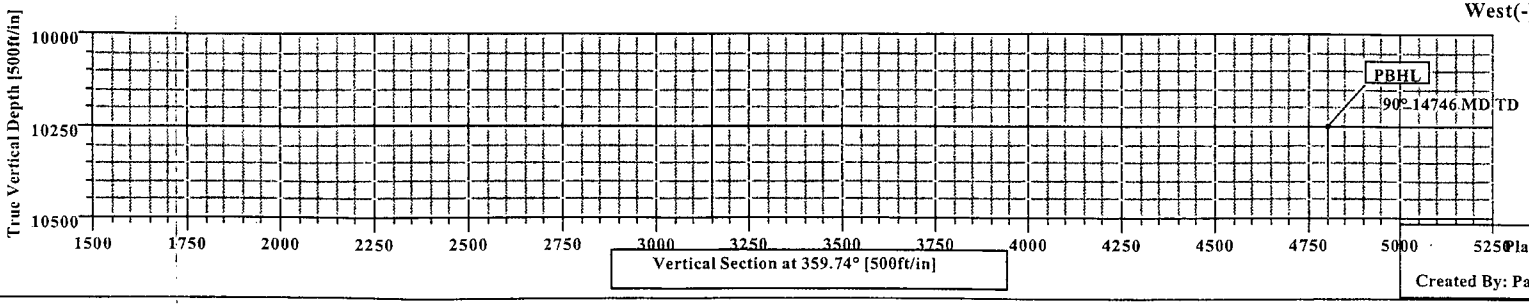
Total Correction to Grid North: 7.29°

LEGEND

- Patton 18 Fed #1 (1)
- Patton 18 Fed #8H (Pilot)
- Lateral
- Plan #1







Weatherford

Plan: Plan #1 (Patton 18 Fed #8H/Lateral)

Created By: Patrick Rudolph Date: 11/15/2012

DP-6

Weatherford International Ltd.
WFT Plan Report - X & Y's

Company:	Occidental Permian Ltd.	**Date:**	11/15/2012	**Time:**	09:34:39	**Page:**	1
Field:	Eddy Co. NM (Nad 27)	**Co-ordinate(NE) Reference:**	Well: Patton 18 Fed #8H, Grid North				
Site:	Patton 18 Fed #8H	**Vertical (TVD) Reference:**	SITE 3527.2				
Well:	Patton 18 Fed #8H	**Section (VS) Reference:**	Well (0.00N,0.00E,359.74Azi)				
Wellpath:	Lateral	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Sybase		

Plan:	Plan #1	**Date Composed:**	11/15/2012
		Version:	1
Principal:	Yes	**Tied-to:**	From Surface

Site: Patton 18 Fed #8H

Site Position:			**Northing:**	440636.00	ft	**Latitude:**	32	12	37.283 N
From:	Map		**Easting:**	660805.40	ft	**Longitude:**	103	48	48.276 W
Position Uncertainty:		0.00 ft				**North Reference:**			Grid
Ground Level:		3503.20 ft				**Grid Convergence:**			0.28 deg

Well: Patton 18 Fed #8H **Slot Name:**

Well Position:	**+N/-S**	0.00 ft	**Northing:**	440636.00	ft	**Latitude:**	32	12	37.283 N
	+E/-W	0.00 ft	**Easting :**	660805.40	ft	**Longitude:**	103	48	48.276 W
Position Uncertainty:		0.00 ft							

Wellpath: Lateral **Drilled From:** Pilot
Tie-on Depth: 0.00 ft

Current Datum:	SITE	**Height**	3527.20 ft	**Above System Datum:**	Mean Sea Level
Magnetic Data:	5/1/2013			**Declination:**	7.47 deg
Field Strength:	48419 nT			**Mag Dip Angle:**	60.09 deg

Vertical Section:	**Depth From (TVD)** ft	**+N/-S** ft	**+E/-W** ft	**Direction** deg
	10249.00	0.00	0.00	359.74

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	359.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9532.80	0.00	359.74	9532.80	0.00	0.00	0.00	0.00	0.00	0.00	
10657.80	90.00	359.74	10249.00	716.19	-3.19	8.00	8.00	0.00	359.74	
14745.55	90.00	359.74	10249.00	4803.90	-21.40	0.00	0.00	0.00	0.00	PBHL Lateral

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
9500.00	0.00	359.74	9500.00	0.00	0.00	0.00	0.00	440636.00	660805.40	
9532.80	0.00	359.74	9532.80	0.00	0.00	0.00	0.00	440636.00	660805.40	KOP
9550.00	1.38	359.74	9550.00	0.21	0.00	0.21	8.00	440636.21	660805.40	
9600.00	5.38	359.74	9599.90	3.15	-0.01	3.15	8.00	440639.15	660805.39	
9650.00	9.38	359.74	9649.48	9.57	-0.04	9.57	8.00	440645.57	660805.36	
9700.00	13.38	359.74	9698.49	19.43	-0.09	19.43	8.00	440655.43	660805.31	
9750.00	17.38	359.74	9746.69	32.68	-0.15	32.68	8.00	440668.68	660805.25	
9800.00	21.38	359.74	9793.84	49.27	-0.22	49.27	8.00	440685.27	660805.18	
9850.00	25.38	359.74	9839.73	69.10	-0.31	69.10	8.00	440705.10	660805.09	
9900.00	29.38	359.74	9884.12	92.09	-0.41	92.09	8.00	440728.09	660804.99	
9950.00	33.38	359.74	9926.80	118.11	-0.53	118.11	8.00	440754.11	660804.87	
10000.00	37.38	359.74	9967.56	147.05	-0.66	147.06	8.00	440783.05	660804.74	
10050.00	41.38	359.74	10006.21	178.77	-0.80	178.77	8.00	440814.77	660804.60	
10100.00	45.38	359.74	10042.54	213.10	-0.95	213.10	8.00	440849.10	660804.45	
10150.00	49.38	359.74	10076.39	249.88	-1.11	249.88	8.00	440885.88	660804.29	
10200.00	53.38	359.74	10107.60	288.94	-1.29	288.94	8.00	440924.94	660804.11	
10250.00	57.38	359.74	10136.00	330.07	-1.47	330.08	8.00	440966.07	660803.93	
10300.00	61.38	359.74	10161.47	373.09	-1.66	373.09	8.00	441009.09	660803.74	
10350.00	65.38	359.74	10183.87	417.78	-1.86	417.78	8.00	441053.78	660803.54	
10400.00	69.38	359.74	10203.10	463.92	-2.07	463.93	8.00	441099.92	660803.33	
10450.00	73.38	359.74	10219.06	511.29	-2.28	511.30	8.00	441147.29	660803.12	
10500.00	77.38	359.74	10231.69	559.66	-2.49	559.67	8.00	441195.66	660802.91	
10550.00	81.38	359.74	10240.90	608.80	-2.71	608.80	8.00	441244.80	660802.69	

DP-7

Weatherford International Ltd.

WFT Plan Report - X & Y's

Company:	Occidental Permian Ltd.	**Date:**	11/15/2012	**Time:**	09:34:39	**Page:**	2
Field:	Eddy Co, NM (Nad 27)	**Co-ordinate(NE) Reference:**	Well: Patton 18 Fed #8H, Grid North				
Site:	Patton 18 Fed #8H	**Vertical (TVD) Reference:**	SITE 3527.2				
Well:	Patton 18 Fed #8H	**Section (VS) Reference:**	Well (0.00N,0.00E,359.74Azi)				
Wellpath:	Lateral	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Sybase		

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
10600.00	85.38	359.74	10246.67	658.45	-2.93	658.46	8.00	441294.45	660802.47	
10650.00	89.38	359.74	10248.96	708.39	-3.16	708.39	8.00	441344.39	660802.24	
10657.80	90.00	359.74	10249.00	716.19	-3.19	716.20	8.00	441352.19	660802.21	LP
10700.00	90.00	359.74	10249.00	758.39	-3.38	758.39	0.00	441394.39	660802.02	
10800.00	90.00	359.74	10249.00	858.39	-3.82	858.39	0.00	441494.39	660801.58	
10900.00	90.00	359.74	10249.00	958.39	-4.27	958.39	0.00	441594.39	660801.13	
11000.00	90.00	359.74	10249.00	1058.38	-4.71	1058.39	0.00	441694.38	660800.69	
11100.00	90.00	359.74	10249.00	1158.38	-5.16	1158.39	0.00	441794.38	660800.24	
11200.00	90.00	359.74	10249.00	1258.38	-5.61	1258.39	0.00	441894.38	660799.79	
11300.00	90.00	359.74	10249.00	1358.38	-6.05	1358.39	0.00	441994.38	660799.35	
11400.00	90.00	359.74	10249.00	1458.38	-6.50	1458.39	0.00	442094.38	660798.90	
11500.00	90.00	359.74	10249.00	1558.38	-6.94	1558.39	0.00	442194.38	660798.46	
11600.00	90.00	359.74	10249.00	1658.38	-7.39	1658.39	0.00	442294.38	660798.01	
11700.00	90.00	359.74	10249.00	1758.38	-7.83	1758.39	0.00	442394.38	660797.57	
11800.00	90.00	359.74	10249.00	1858.38	-8.28	1858.39	0.00	442494.38	660797.12	
11900.00	90.00	359.74	10249.00	1958.38	-8.72	1958.39	0.00	442594.38	660796.68	
12000.00	90.00	359.74	10249.00	2058.37	-9.17	2058.39	0.00	442694.37	660796.23	
12100.00	90.00	359.74	10249.00	2158.37	-9.61	2158.39	0.00	442794.37	660795.79	
12200.00	90.00	359.74	10249.00	2258.37	-10.06	2258.39	0.00	442894.37	660795.34	
12300.00	90.00	359.74	10249.00	2358.37	-10.51	2358.39	0.00	442994.37	660794.89	
12400.00	90.00	359.74	10249.00	2458.37	-10.95	2458.39	0.00	443094.37	660794.45	
12500.00	90.00	359.74	10249.00	2558.37	-11.40	2558.39	0.00	443194.37	660794.00	
12600.00	90.00	359.74	10249.00	2658.37	-11.84	2658.39	0.00	443294.37	660793.56	
12700.00	90.00	359.74	10249.00	2758.37	-12.29	2758.39	0.00	443394.37	660793.11	
12800.00	90.00	359.74	10249.00	2858.37	-12.73	2858.39	0.00	443494.37	660792.67	
12900.00	90.00	359.74	10249.00	2958.37	-13.18	2958.39	0.00	443594.37	660792.22	
13000.00	90.00	359.74	10249.00	3058.36	-13.62	3058.39	0.00	443694.36	660791.78	
13100.00	90.00	359.74	10249.00	3158.36	-14.07	3158.39	0.00	443794.36	660791.33	
13200.00	90.00	359.74	10249.00	3258.36	-14.52	3258.39	0.00	443894.36	660790.88	
13300.00	90.00	359.74	10249.00	3358.36	-14.96	3358.39	0.00	443994.36	660790.44	
13400.00	90.00	359.74	10249.00	3458.36	-15.41	3458.39	0.00	444094.36	660789.99	
13500.00	90.00	359.74	10249.00	3558.36	-15.85	3558.39	0.00	444194.36	660789.55	
13600.00	90.00	359.74	10249.00	3658.36	-16.30	3658.39	0.00	444294.36	660789.10	
13700.00	90.00	359.74	10249.00	3758.36	-16.74	3758.39	0.00	444394.36	660788.66	
13800.00	90.00	359.74	10249.00	3858.36	-17.19	3858.39	0.00	444494.36	660788.21	
13900.00	90.00	359.74	10249.00	3958.36	-17.63	3958.39	0.00	444594.36	660787.77	
14000.00	90.00	359.74	10249.00	4058.35	-18.08	4058.39	0.00	444694.35	660787.32	
14100.00	90.00	359.74	10249.00	4158.35	-18.52	4158.39	0.00	444794.35	660786.88	
14200.00	90.00	359.74	10249.00	4258.35	-18.97	4258.39	0.00	444894.35	660786.43	
14300.00	90.00	359.74	10249.00	4358.35	-19.42	4358.39	0.00	444994.35	660785.98	
14400.00	90.00	359.74	10249.00	4458.35	-19.86	4458.39	0.00	445094.35	660785.54	
14500.00	90.00	359.74	10249.00	4558.35	-20.31	4558.39	0.00	445194.35	660785.09	
14600.00	90.00	359.74	10249.00	4658.35	-20.75	4658.39	0.00	445294.35	660784.65	
14700.00	90.00	359.74	10249.00	4758.35	-21.20	4758.39	0.00	445394.35	660784.20	
14745.55	90.00	359.74	10249.00	4803.90	-21.40	4803.95	0.00	445439.90	660784.00	PBHL Lateral

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude ---> Deg	Min	Sec	<--- Longitude ---> Deg	Min	Sec
PBHL Lateral			10249.00	4803.90	-21.40	445439.90	660784.00	32	13	24.823 N	103	48	48.254 W

DP-8

Weatherford International Ltd.
WFT Plan Report - X & Y's

Company:	Occidental Permian Ltd	**Date:**	11/15/2012	**Time:**	09:34:39	**Page:**	3
Field:	Eddy Co, NM (Nad 27)	**Co-ordinate(NE) Reference:**	Well: Patton 18 Fed #8H, Grid North				
Site:	Patton 18 Fed #8H	**Vertical (TVD) Reference:**	SITE 3527.2				
Well:	Patton 18 Fed #8H	**Section (VS) Reference:**	Well (0.00N,0.00E,359.74Azi)				
Wellpath:	Lateral	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Sybase		

Casing Points

MD	TVD	Diameter	Hole Size	Name

Annotation

MD ft	TVD ft	
9532.80	9532.80	KOP
10657.80	10249.00	LP
14745.55	10249.00	PBHL

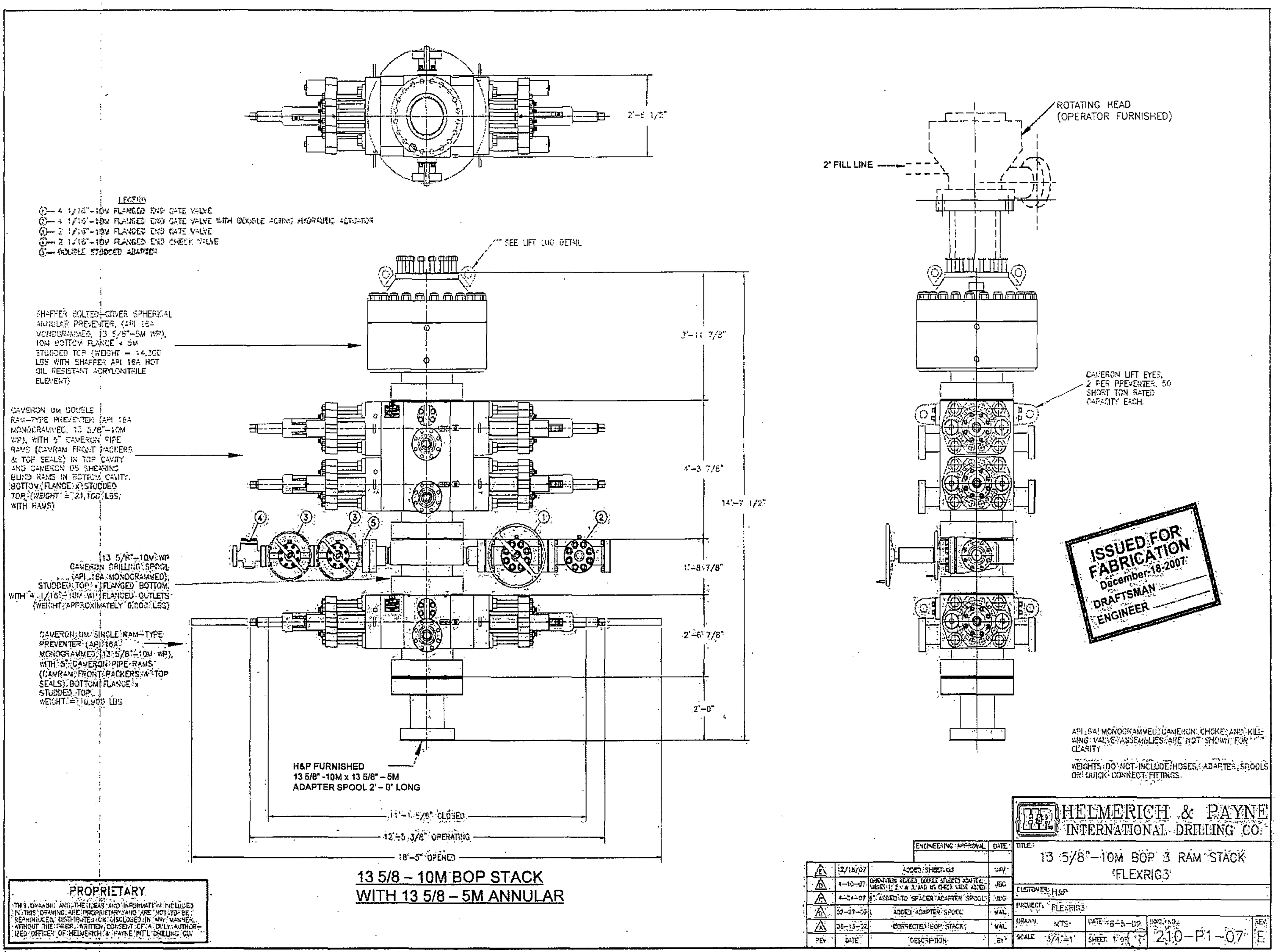
Formations

MD	TVD	Formations	Lithology	Dip Angle	Dip Direction

Field: Eddy Co, NM (Nad 27)

Map System:	US State Plane Coordinate System 1927	**Map Zone:**	New Mexico, Eastern Zone
Geo Datum:	NAD27 (Clarke 1866)	**Coordinate System:**	Well Centre
Sys Datum:	Mean Sea Level	**Geomagnetic Model:**	IGRF2010

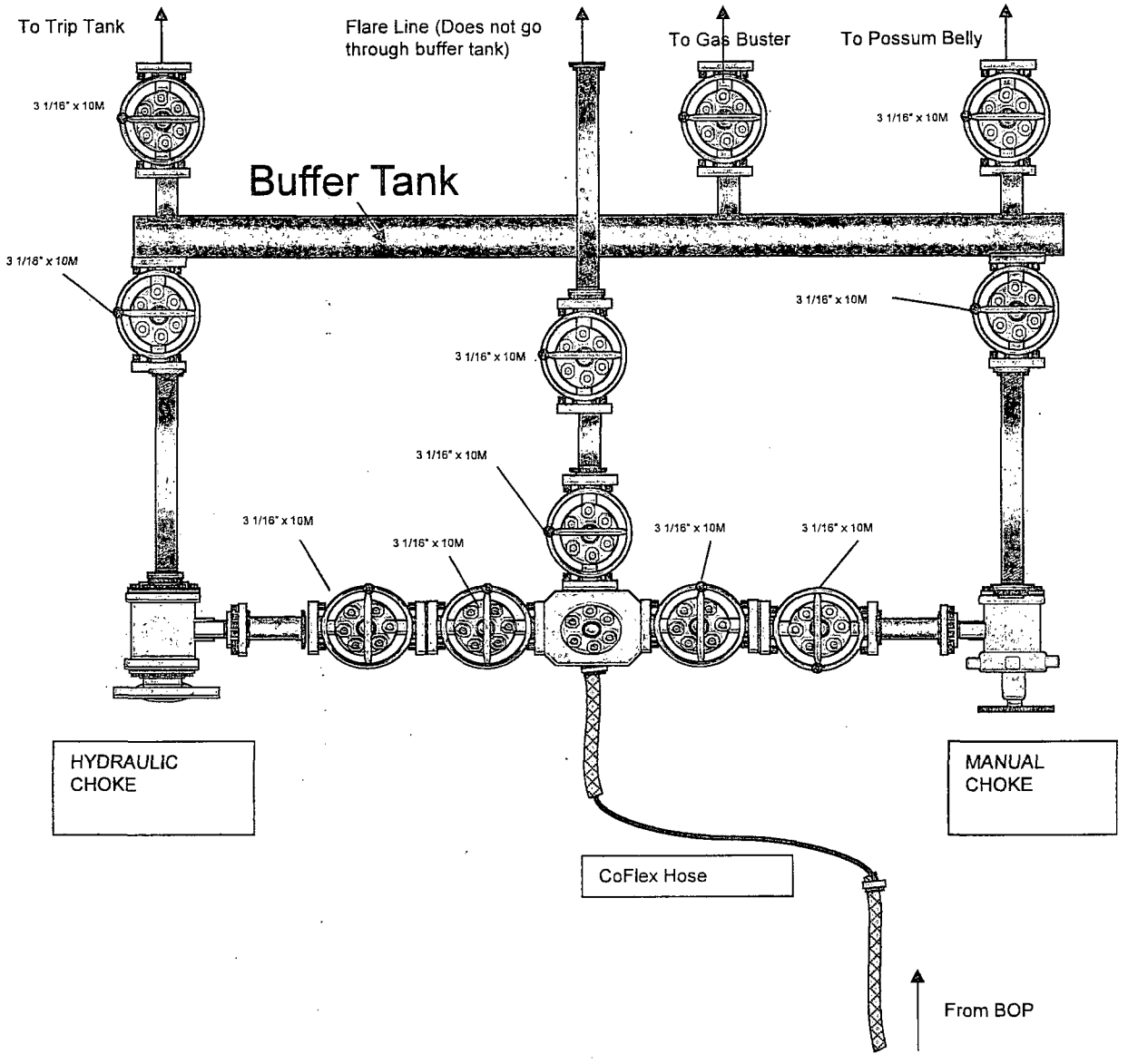
BOP



2'-8 1/2"
ROTATING HEAD (OPERATOR FURNISHED)
2" FILL LINE
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
SEE LIFT LUG DETAIL
SHAFFER BOLTED-COVER SPHERICAL ANNULAR PREVENTER, (API 16A MONOGRAMMED, 13 5/8"-5M WP), 10M BOTTOM FLANGE x 5M STUDDED TOP (WEIGHT = 14,300 LBS WITH SHAFFER API 16A HOT OIL RESISTANT ACRYLONITRILE ELEMENT)
CAMERON UM DOUBLE RAM-TYPE PREVENTER (API 16A MONOGRAMMED, 13 5/8"-10M WP), WITH 5" CAMERON PIPE RAMS (CAVRAM 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)
CAMERON UM SINGLE RAM-TYPE PREVENTER (API 16A MONOGRAMMED, 13 5/8"-10M WP), WITH 5" CAMERON PIPE RAMS (CAVRAM FRONT PACKERS & TOP SEALS). BOTTOM FLANGE x STUDDED TOP. WEIGHT = 10,900 LBS
3'-11 7/8"
4'-3 7/8"
14'-7 1/2"
1'-8 7/8"
2'-6 7/8"
2'-0"
CAMERON LIFT EYES, 2 PER PREVENTER, 50 SHORT TON RATED CAPACITY EACH.
ISSUED FOR FABRICATION
December 18 2007
DRAFTSMAN
ENGINEER
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
API 6A MONOGRAMMED CAMERON CHOKE AND KILL WING VALVE ASSEMBLIES ARE NOT SHOWN FOR CLARITY
WEIGHTS DO NOT INCLUDE HOSES, ADAPTER SPOOLS OR QUICK CONNECT FITTINGS.
13 5/8 – 10M BOP STACK
WITH 13 5/8 – 5M ANNULAR
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 INT'L DRILLING CO.
HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.
ENGINEERING APPROVAL
DATE
E 12/18/07 ADDED SHEET 03
D 4-10-07 ORIENTATION REVISED, DOUBLE STUDDED ADAPTER, VALVES (1) 2" & 3" AND 4G CHECK VALVE ADDED JBG
C 4-24-07 5" ADDED TO SPACER ADAPTER SPOOL JBG
B 02-07-07 ADDED ADAPTER SPOOL VAL
A 06-13-02 CORRECTED BOP STACK VAL
REV DATE DESCRIPTION BY
TITLE: 13 5/8"-10M BOP 3 RAM STACK 'FLEXRIG3'
CUSTOMER: H&P
PROJECT: FLEXRIG3
DRAWN: MTS
DATE: 6-5-02
DWG. NO. 210-P1-07
REV. E
SCALE 3/4"=1'
SHEET 1 OF

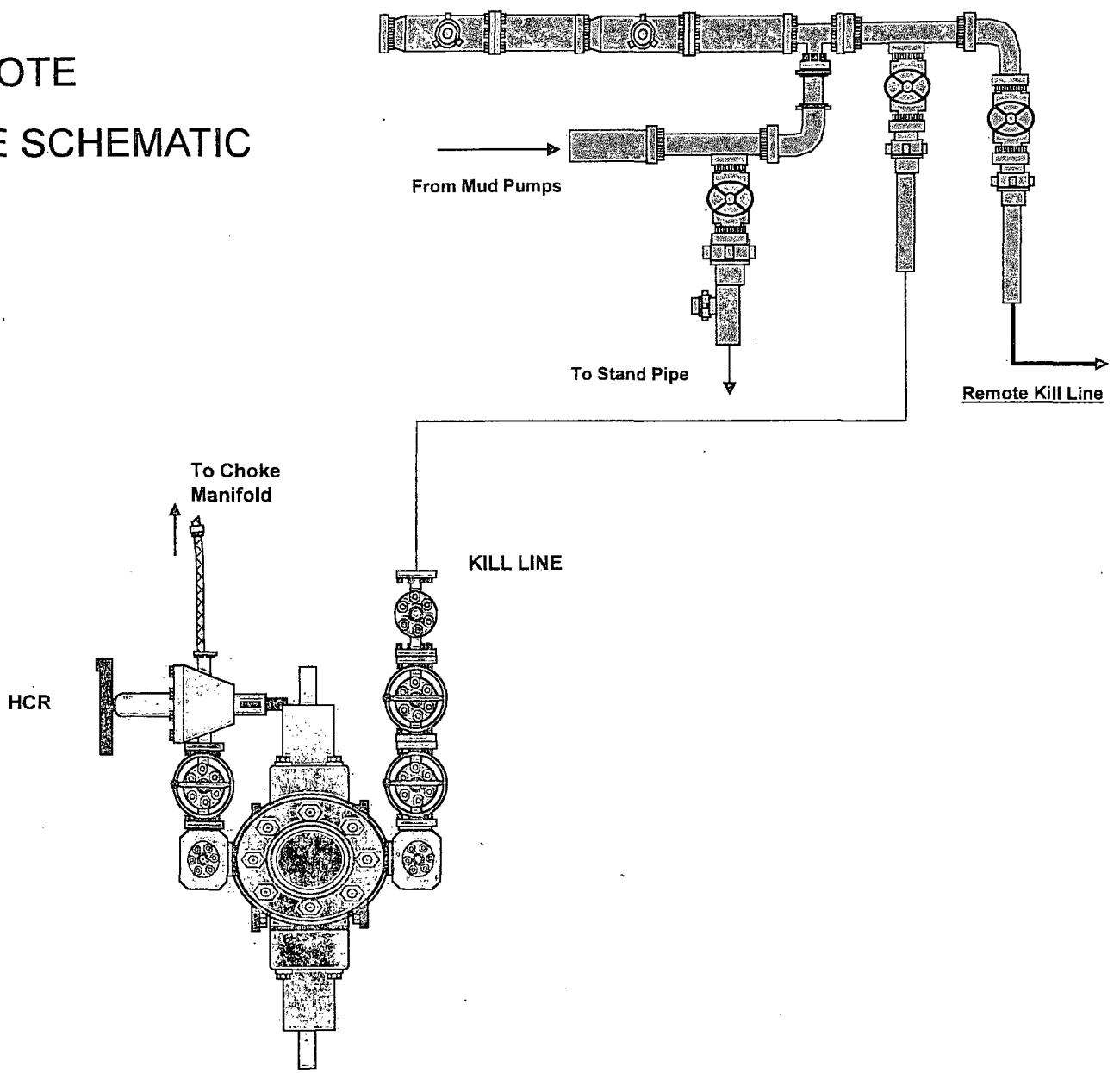
CM-1

FLEX3 STD CHOKE MANIFOLD (COMPREHENSIVE)



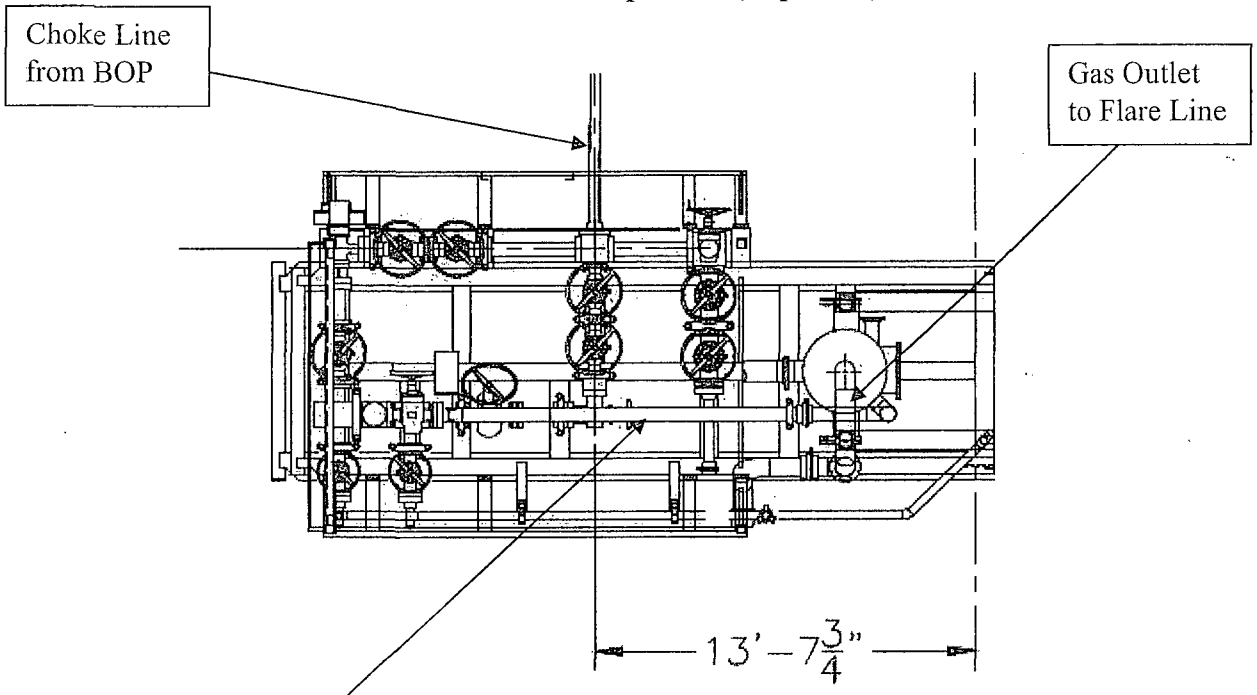
CM-2

10M REMOTE
KILL LINE SCHEMATIC

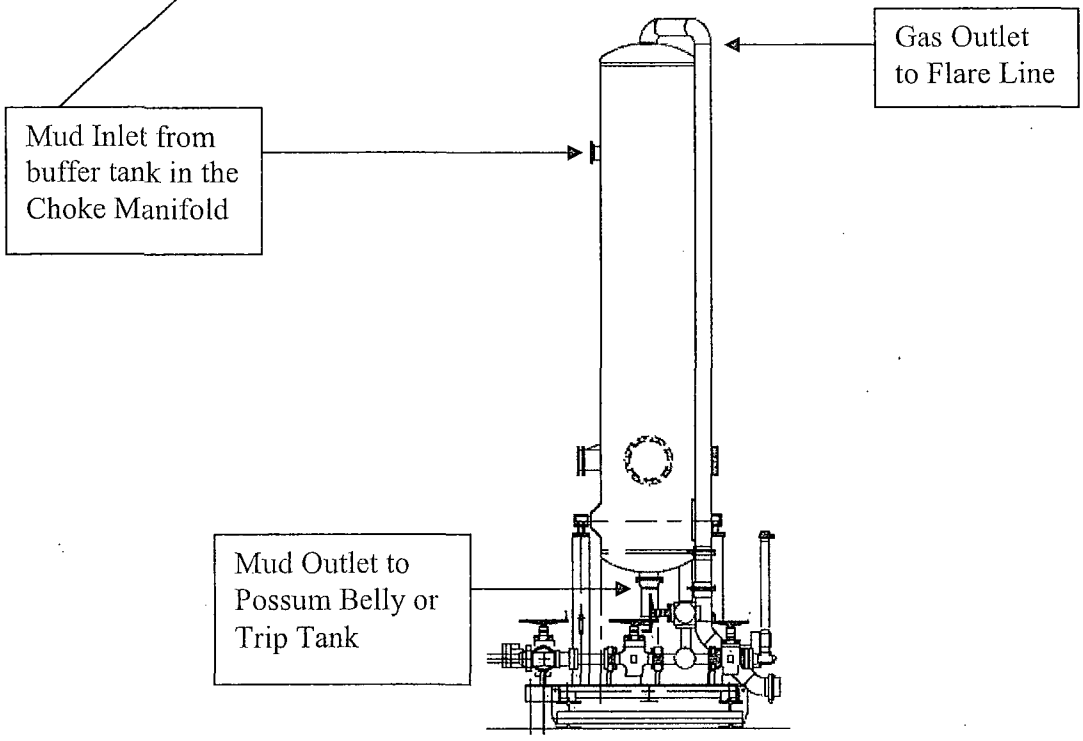


CM-3

Choke Manifold – Gas Separator (Top View)

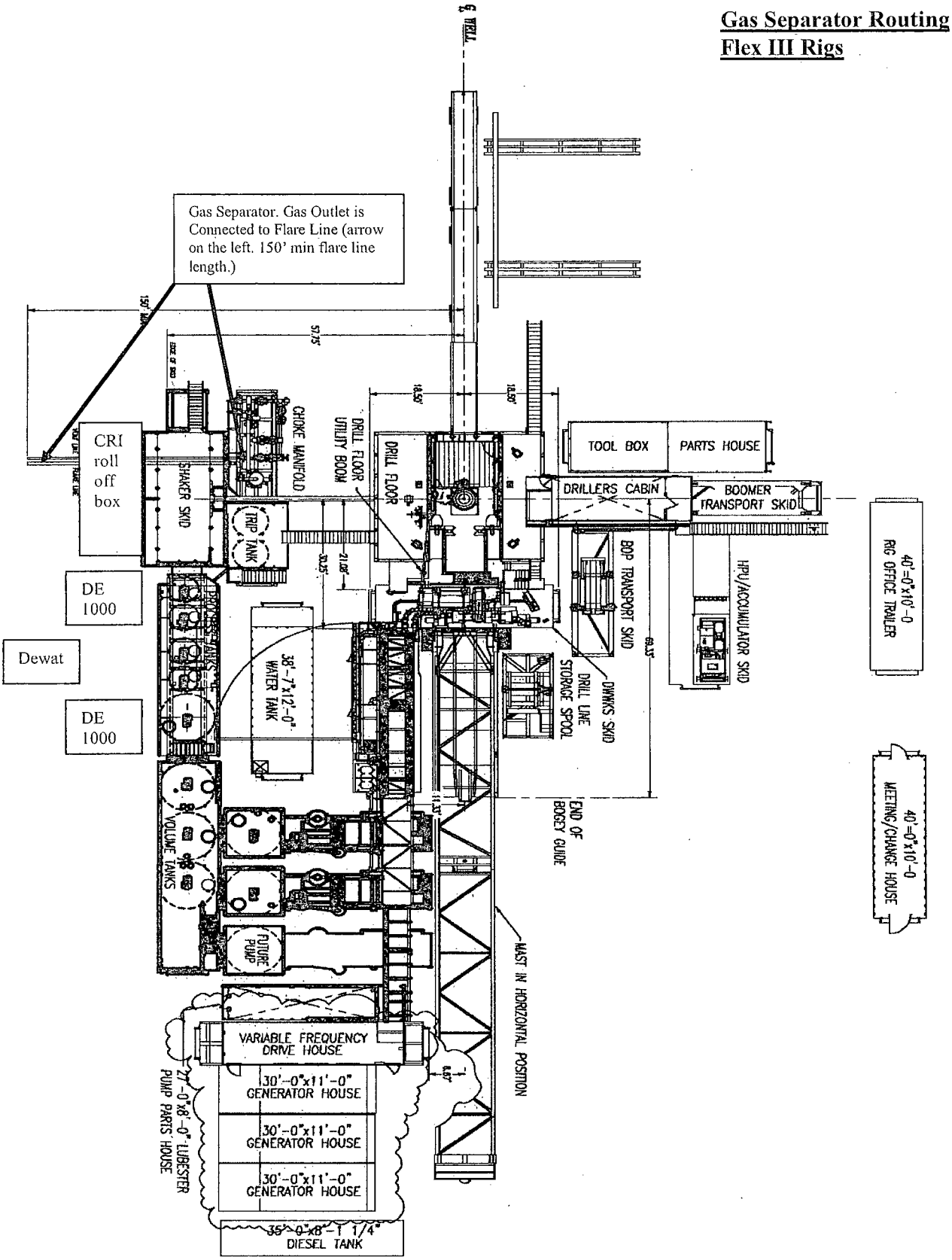


Choke Manifold – Gas Separator (Side View)



CM-4

Gas Separator Routing
Flex III Rigs



Coflex Hose Certification

Continental CONTITECH

Fluid Technology

Quality Document

CERTIFICATE OF CONFORMITY

Supplier : CONTITECH RUBBER INDUSTRIAL KFT.
Equipment : 6 pcs. Choke and Kill Hose with installed couplings
Type : **3" x 10,67 m WP: 10000 psi**
Supplier File Number : 412638
Date of Shipment : April. 2008
Customer : Phoenix Beattie Co.
Customer P.o. : 002491
Referenced Standards / Codes / Specifications : API Spec 16 C
Serial No.: 52754,52755,52776,52777,52778,52782

STATEMENT OF CONFORMITY

We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.

COUNTRY OF ORIGIN HUNGARY/EU

Signed : .....

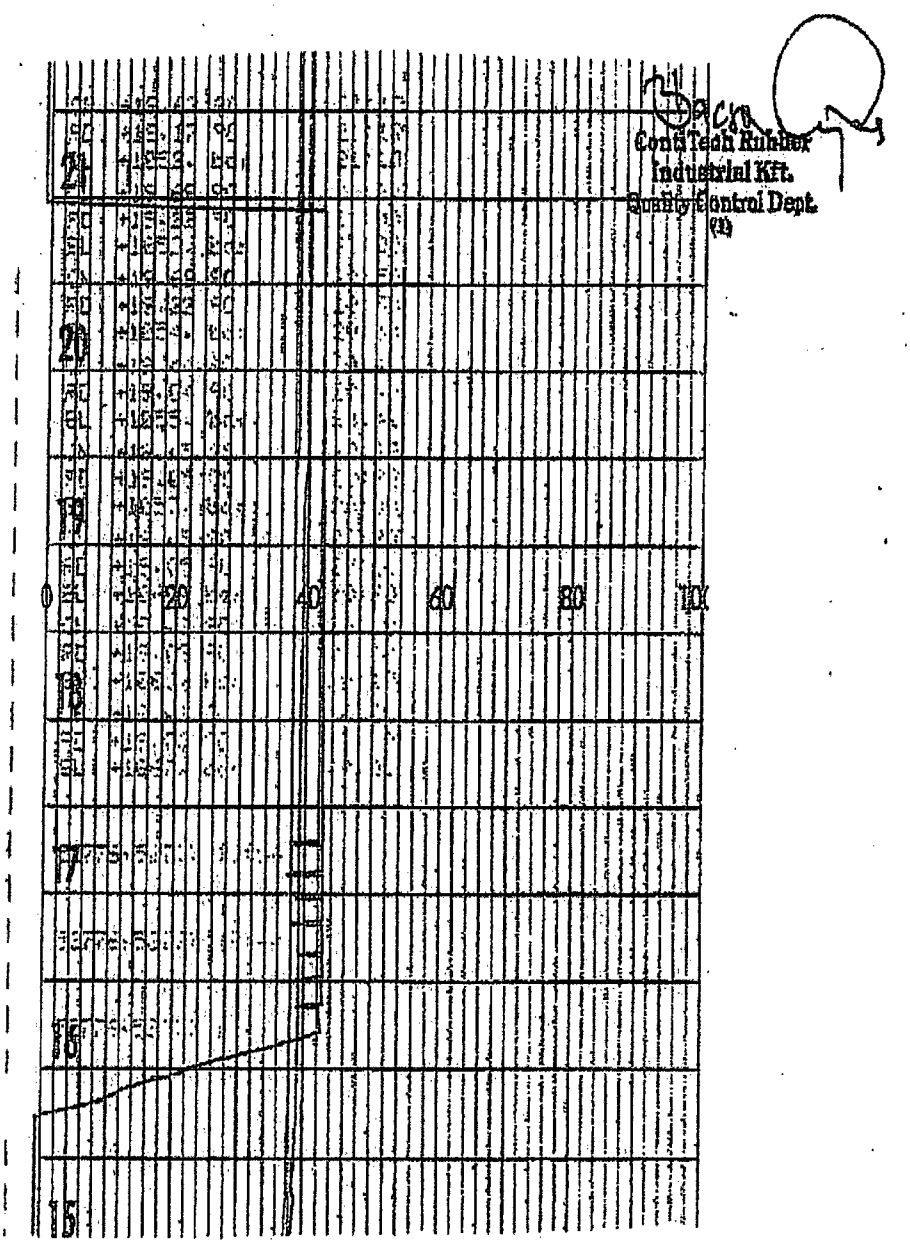
ContiTech Rubber Industrial Kft. Quality Control Dept. (1)

Date: 04. April. 2008

Position: Q.C. Manager

FH-2

Coflex Hose Certification



PHOENIX Beattie

Material Identification Certificate

PA No	006330	Client	HELMERICH & PAYNE INT'L DRILLING	Client Ref	370-369-001	Page	1

Part No	Description	Material Desc	Material Spec	Qty	WO No	Batch No	Test Cert No	Bin No	Drg No	Issue No
HP10CK3A-35-4F1	3" 10K 16C C&K HOSE x 35ft OAL			1	2491	52777/H884		WATER		
SECK3-HPF3	LIFTING & SAFETY EQUIPMENT TO			1	2440	002440		N/STK		
SC725-200CS	SAFETY CLAMP 200MM 7.25T	CARBON STEEL		1	2519	H665		22C		
SC725-132CS	SAFETY CLAMP 132MM 7.25T	CARBON STEEL		1	2242	H139		22		

We hereby certify that these goods have been inspected by our Quality Management System, and to the best of our knowledge are found to conform to relevant industry standards within the requirements of the purchase order as issued to Phoenix Beattie Corporation.

05/13/08

Coflex Hose Certification

FH-3

FH-4

Coflex Hose Certification

Form No 100/12

PHOENIX Beattie

Phoenix Beattie Corp
11535 Brittsoore Park Drive
Houston, TX 77041
Tel: (832) 327-0141
Fax: (832) 327-0148
E-mail mail@phoenixbeattie.com
www.phoenixbeattie.com

Delivery Note

Customer Order Number	370-369-001	Delivery Note Number	003078	Page	1

Customer / Invoice Address
HELMERICH & PAYNE INT'L DRILLING CO
1437 SOUTH BOULDER
TULSA, OK
74119

Delivery / Address
HELMERICH & PAYNE IDC
ATTN: JOE STEPHENSON - RIG 370
13609 INDUSTRIAL ROAD
HOUSTON, TX
77015

Customer Acc No	Phoenix Beattie Contract Manager	Phoenix Beattie Reference	Date
H01	JJL	006330	05/23/2008

Item No	Beattie Part Number / Description	Qty Ordered	Qty Sent	Qty To Follow
1	HP10CK3A-35-4F1 3" 10K 16C C&K HOSE x 35ft OAL CW 4.1/16" API SPEC FLANGE E/ End 1: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange End 2: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange c/w BX155 Standard ring groove at each end Suitable for H2S Service Working pressure: 10,000psi Test pressure: 15,000psi Standard: API 16C Full specification Armor Guarding: Included Fire Rating: Not Included Temperature rating: -20 Deg C to +100 Deg C	1	1	0
2	SECK3-HPF3 LIFTING & SAFETY EQUIPMENT TO SUIT HP10CK3-35-F1 2 x 160mm ID Safety Clamps 2 x 244mm ID Lifting Collars & element C's 2 x 7ft Stainless Steel wire rope 3/4" OD 4 x 7.75t Shackles	1	1	0
3	SC725-200CS SAFETY CLAMP 200MM 7.25T C/S GALVANISED	1	1	0

Continued...

FH-5

Coflex Hose Certification

Continental CONTITECH

Fluid Technology

Quality Document

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 746
PURCHASER: Phoenix Beattie Co.				P.O. N°: 002491
CONTITECH ORDER N°: 412638		HOSE TYPE: 3" ID		Choke and Kill Hose
HOSE SERIAL N°: 52777		NOMINAL / ACTUAL LENGTH:		10,67 m
W.P. 68,96 MPa 10000 psi		T.P. 103,4 MPa 15000 psi		Duration: 60 -- min.

Pressure test with water at ambient temperature

See attachment. (1 page)

↑ 10 mm = 10 Min.

→ 10 mm = 25 MPa

COUPLINGS

Type	Serial N°	Quality	Heat N°
3" coupling with	917 913	AISI 4130	T7998A
4 1/16" Flange end		AISI 4130	26984

INFOCHIP INSTALLED

API Spec 16 C
Temperature rate:"B"

All metal parts are flawless

WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

Date:	Inspector	Quality Control
04. April. 2008		ContiTech Rubber Industrial Kft. Quality Control Dept. (1)

FH-6

Coflex Hose Certification

Form No 100/12

PHOENIX Beattie

Phoenix Beattie Corp
11535 Brittmoore Park Drive
Houston, TX 77041
Tel: (832) 327-0141
Fax: (832) 327-0148
E-mail mail@phoenixbeattie.com
www.phoenixbeattie.com

Delivery Note

Customer Order Number	370-369-001	Delivery Note Number	003078	Page	2

Customer / Invoice Address	Delivery / Address
HELMERICH & PAYNE INT'L DRILLING CO 1437 SOUTH BOULDER TULSA, OK 74119	HELMERICH & PAYNE IDC ATTN: JOE STEPHENSON - RIG 370 13609 INDUSTRIAL ROAD HOUSTON, TX 77015

Customer Acc No	Phoenix Beattie Contract Manager	Phoenix Beattie Reference	Date
H01	JJL	006330	05/23/2008

Item No	Beattie Part Number / Description	Qty Ordered	Qty Sent	Qty To Follow
4	SC725-132CS SAFETY CLAMP 132MM 7.25T C/S GALVANIZED C/W BOLTS	1	1	0
5	00CERT-HYDRO HYDROSTATIC PRESSURE TEST CERTIFICATE	1	1	0
6	00CERT-LOAD LOAD TEST CERTIFICATES	1	1	0
7	00FREIGHT INBOUND / OUTBOUND FREIGHT PRE-PAY & ADD TO FINAL INVOICE NOTE: MATERIAL MUST BE ACCOMPANIED BY PAPERWORK INCLUDING THE PURCHASE ORDER, RIG NUMBER TO ENSURE PROPER PAYMENT	1	1	0

Phoenix Beattie Inspection Signature : _____

Received In Good Condition : Signature _____

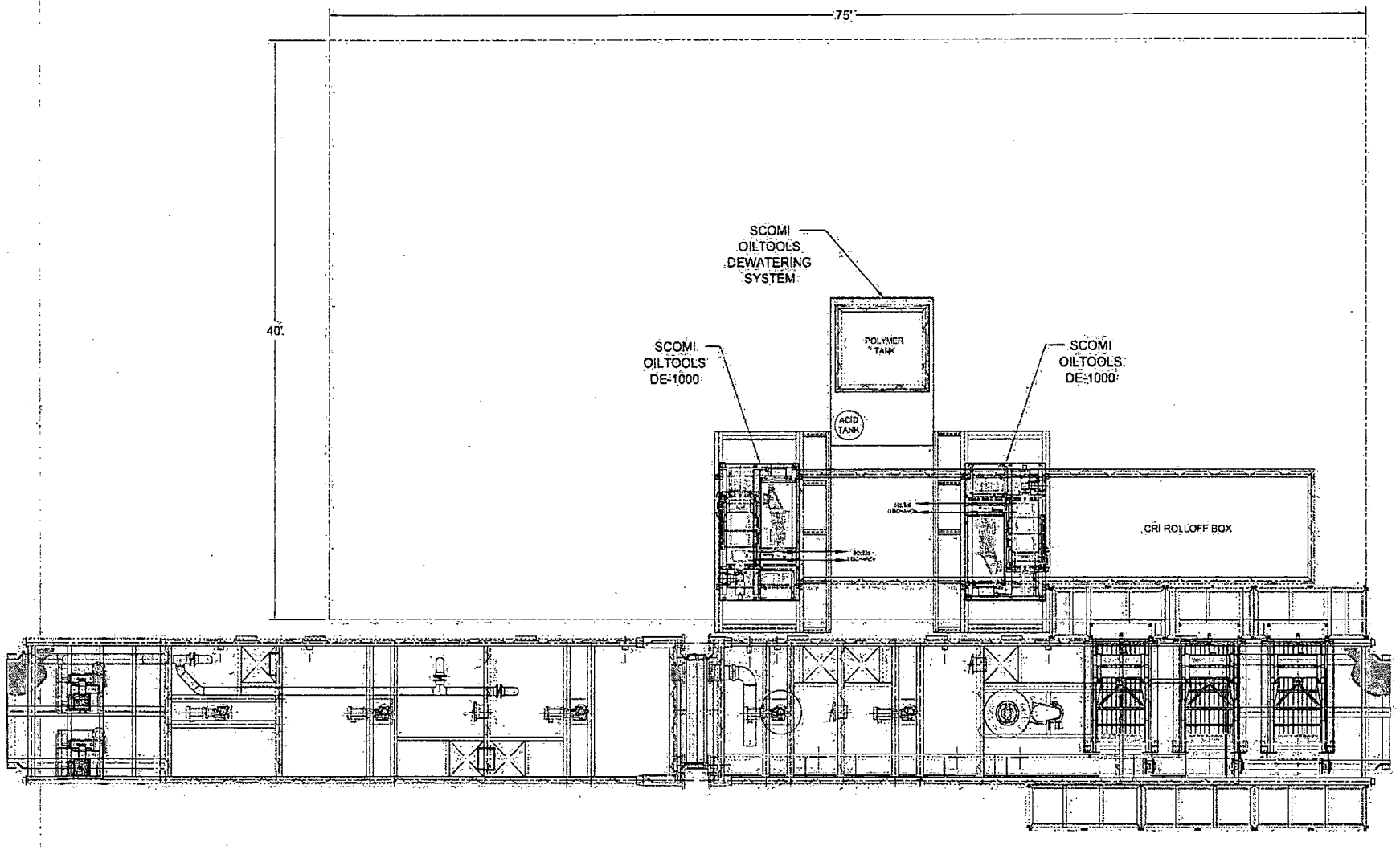
Print Name _____

Date _____

All goods remain the property of Phoenix Beattie until paid for in full. Any damage or shortage on this delivery must be advised within 5 days. Returns may be subject to a handling charge.

CLEZ-4

BILL OF MATERIAL				
ITEM	QTY.	DESCRIPTION	LENGTH	WEIGHT



1. ALL STRUCTURAL MATERIAL SHALL BE ASTM - A36.
2. ALL PIPE, SCH. 40, MATERIAL SA 106 GR. B
3. ALL FLANGES SHALL BE, SCRF., 150# & MATERIAL SA 105.
4. ALL FITTINGS SCH. 40, MATERIAL SHALL BE SA 234 GR. WPB.
5. TANK FABRICATION SHALL BE IN ACCORDANCE WITH API-650.

NO.	REVISION	BY	CHKD	APP'D	DATE
A	ADDED PAGE 2 TO SHOW PAD	PDL			9/12/03

TITLE:
CLOSED LOOP SYSTEM BASIC LAYOUT AND TIE IN OXY - H&P FLEX RIGS / PG 1 OF 2

DRAWN BY	DATE	CHECKED BY	DATE
PDL	10/30/02		
APPROVED	DATE	SCALE	SIZE
		NTS	D

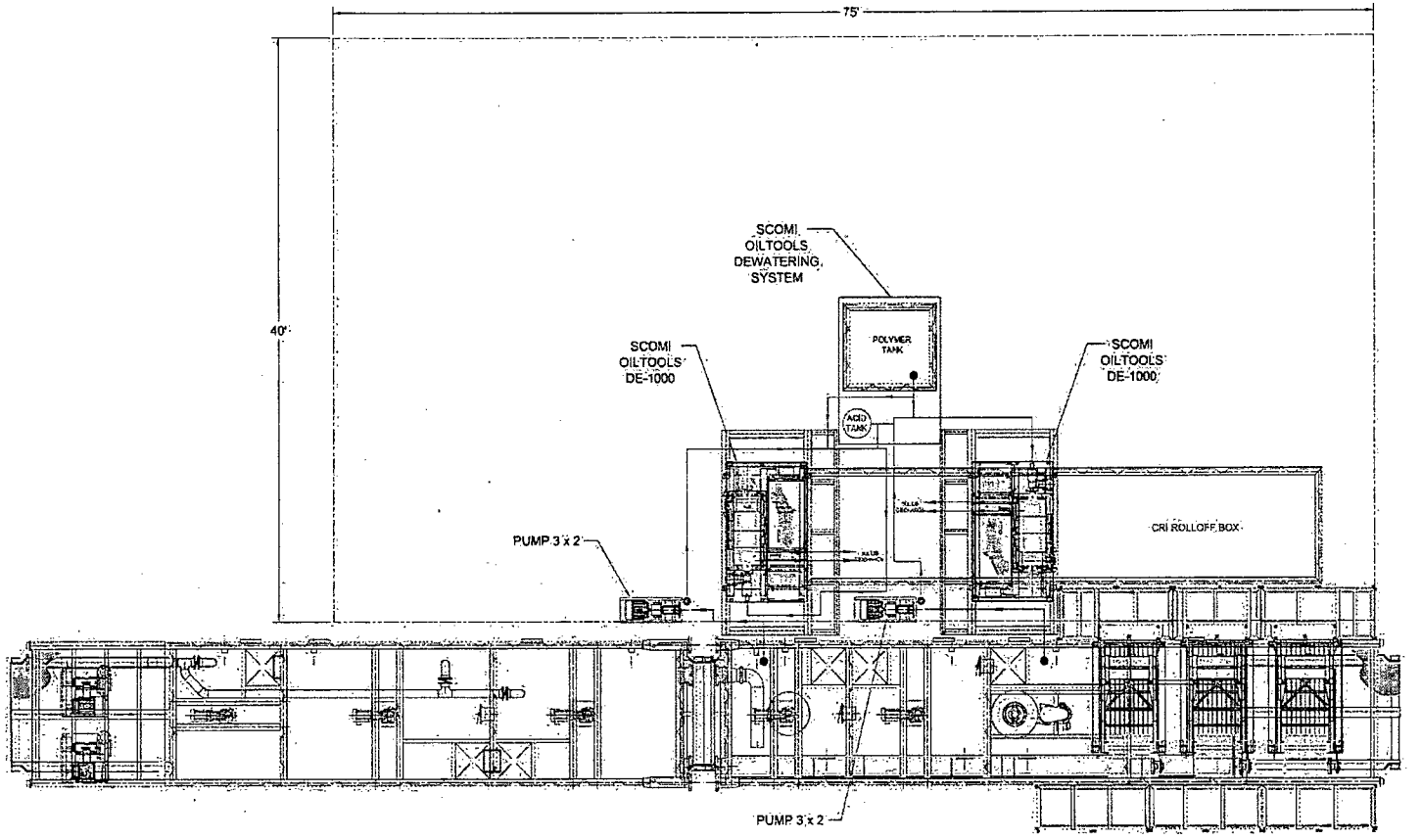
Scomi

SRI N. Sam Houston Parkway East, Suite 800,
Houston, Texas 77060
PHONE: (281)-260-8016; FAX: (281)-260-6999

JOB NO.	DRAWING NO.	REV.
	521S-014	A

CLEZ-5

BILL OF MATERIAL			
ITEM	QTY.	DESCRIPTION	LENGTH / WEIGHT



1. ALL STRUCTURAL MATERIAL SHALL BE ASTM - A36.
2. ALL PIPE SCH. 40 MATERIAL SA 106 GR. B
3. ALL FLANGES SHALL BE SCH. 150# & MATERIAL SA 105.
4. ALL FITTINGS SCH. 40 MATERIAL SHALL BE SA 234 GR. WPB
5. TANK FABRICATION SHALL BE IN ACCORDANCE WITH API-650

NO.	REVISIONS	BY	CHK'D	APP'D	DATE
A	ADDED PAGE 2 TO SHOW PLED	PDL			9/10/08

TITLE :
CLOSED LOOP SYSTEM
BASIC LAYOUT AND TIE IN
OXY - H&P - FLEX RIGS / PG 2 OF 2

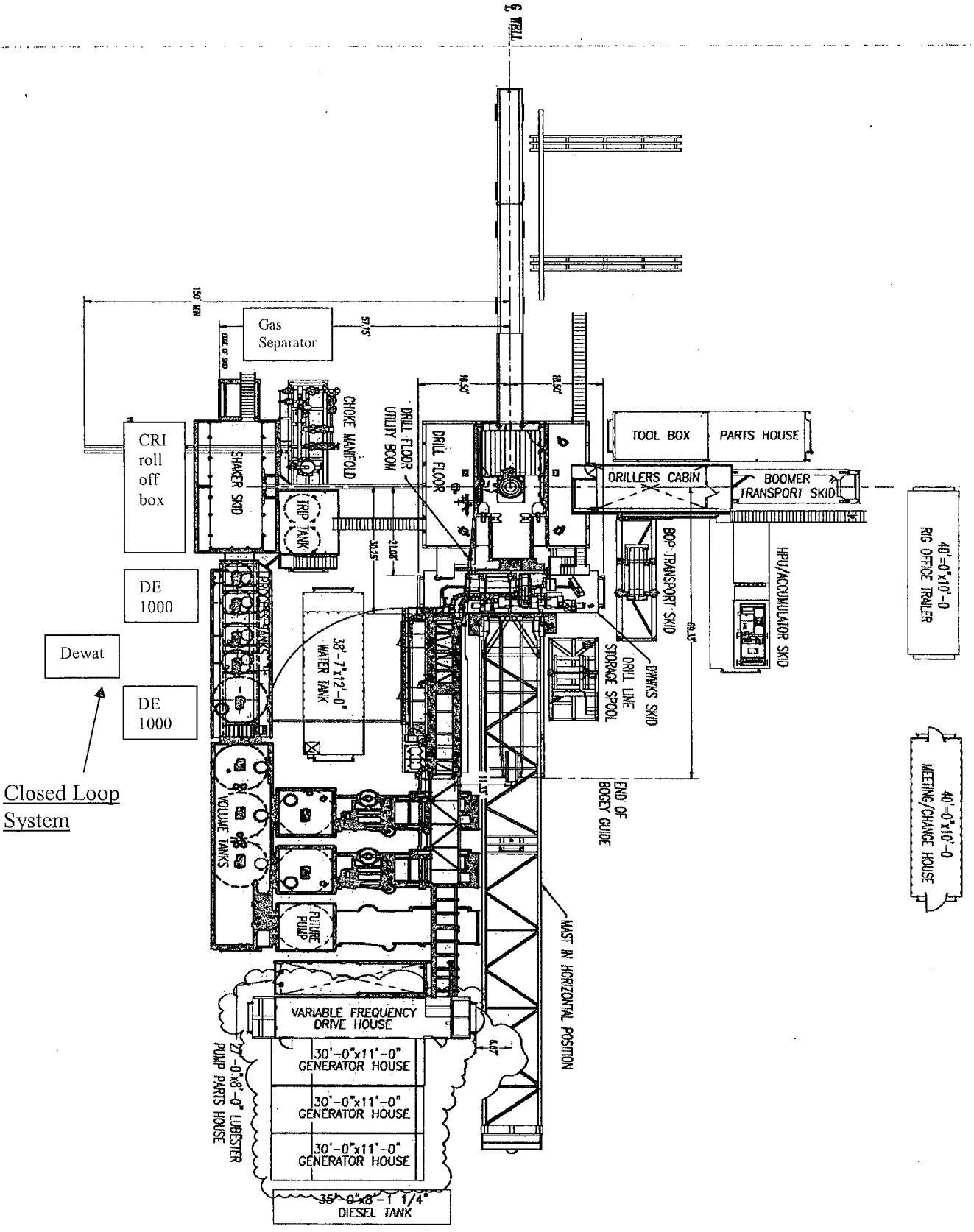
DRAWN BY	DATE	CHECKED BY	DATE
PDL	10/30/08		
APPROVED	DATE	SCALE	SIZE / DWG.
		NTS	D

Scomi

521 N. Sam Houston Parkway East, Suite 900,
Houston, Texas 77060
PHONE: (281)-260-2010, FAX: (281)-260-2063

JOB NO.	DRAWING NO.	REV.
	521S-014	A

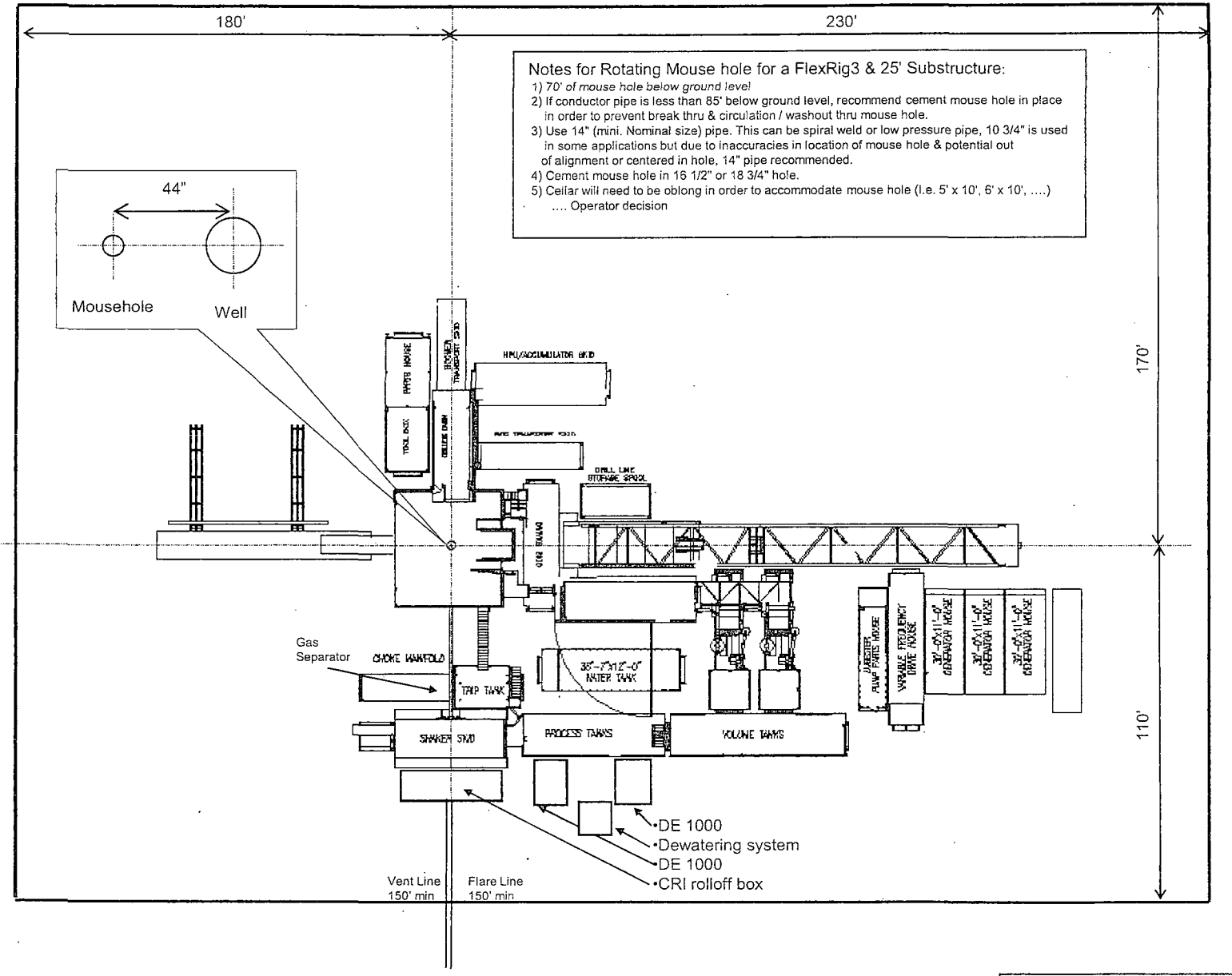
CLEZ-6


Gas Separator
CRI roll off box
DE 1000
Dewat
DE 1000
Closed Loop System
SHAKER SKID
CHOKE MANIFOLD
DRILL FLOOR UTILITY BOOM
DRILL FLOOR
TRIP TANK
38'-7"x12'-0" WATER TANK
VOLUME TANKS
FUTURE PUMP
TOOL BOX
PARTS HOUSE
DRILLERS CABIN
BOOMER TRANSPORT SKID
BOP TRANSPORT SKID
HPU/ACCUMULATOR SKID
DRILL LINE STORAGE SPOOL
DWKS SKID
END OF BOGEY GUIDE
MAST IN HORIZONTAL POSITION
40'-0"x10'-0 RIG OFFICE TRAILER
40'-0"x10'-0 MEETING/CHANGE HOUSE
VARIABLE FREQUENCY DRIVE HOUSE
30'-0"x11'-0" GENERATOR HOUSE
30'-0"x11'-0" GENERATOR HOUSE
30'-0"x11'-0" GENERATOR HOUSE
27'-0"x8'-0" LUBESTER PUMP PARTS HOUSE
35'-0"x8'-1 1/4" DIESEL TANK

CLEZ-7

OXY FLEX III PAD (SCOMI Closed Loop System)

Level Area-No Caliche-For Offices and Living Quarters



N

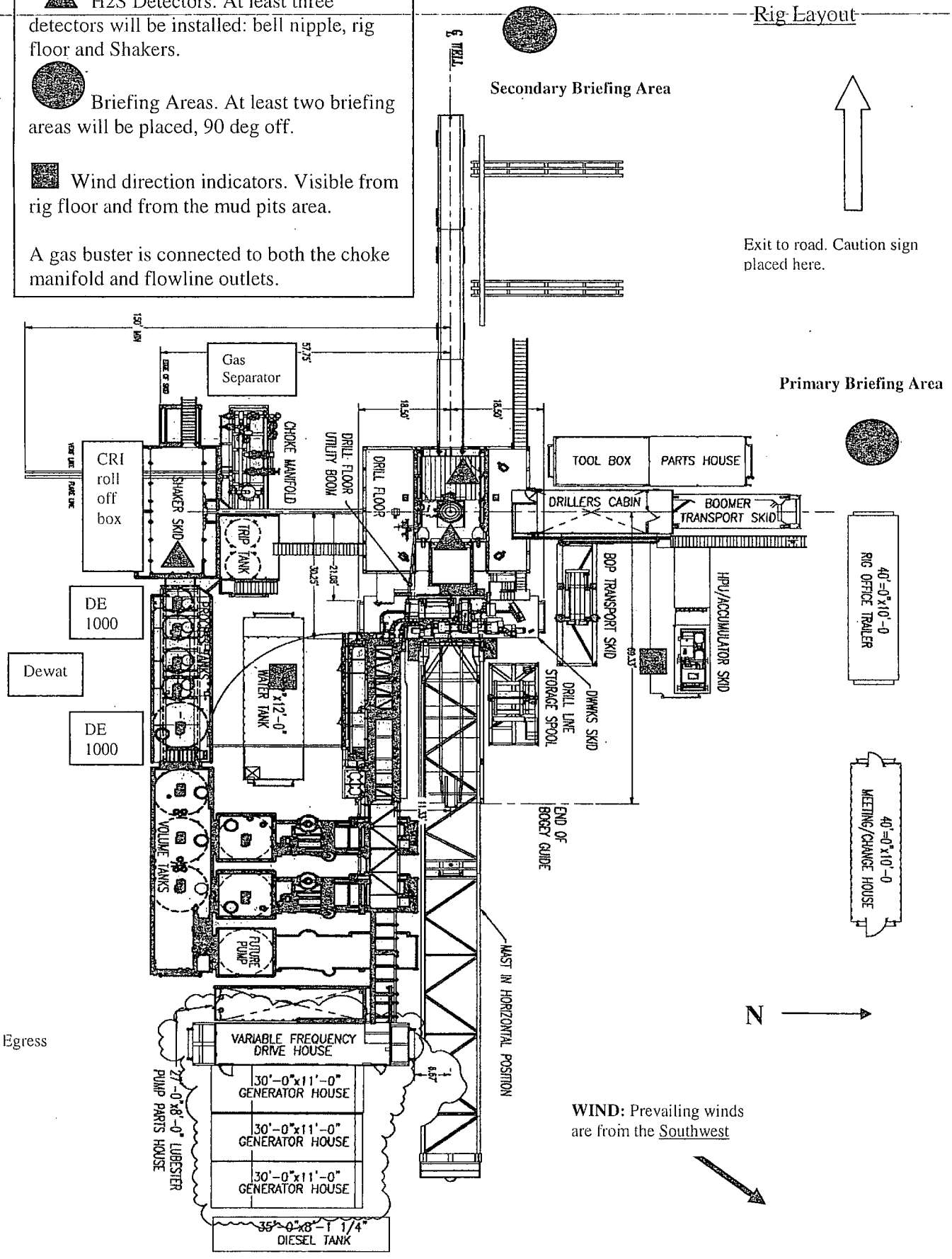
▲ H2S Detectors. At least three detectors will be installed: bell nipple, rig floor and Shakers.

● Briefing Areas. At least two briefing areas will be placed, 90 deg off.

■ Wind direction indicators. Visible from rig floor and from the mud pits area.

A gas buster is connected to both the choke manifold and flowline outlets.

Rig Layout



H2S-1

Permian Drilling
Hydrogen Sulfide Drilling Operations Plan
Patton 18 Fed#8H

Open drill site. No homes or buildings are near the proposed location.

1. Escape

   Personnel shall escape upwind of wellbore in the event of an emergency gas release. Escape can take place through the lease road on the WEST side of the location. Personnel need to move to a safe distance and block the entrance to location. If the primary route is not an option due to the wind direction, then a secondary egress route should be taken.

H2S-3

Permian Drilling
Hydrogen Sulfide Drilling Operations Plan
New Mexico

Scope

This contingency plan establishes guidelines for the public, all company employees, and contract employees who's work activities may involve exposure to hydrogen sulfide (H2S) gas.
While drilling this well, it is possible to encounter H2S bearing formations. At all times, the first barrier to control H2S emissions will be the drilling fluid, which will have a density high enough to control influx.

Objective

1. Provide an immediate and predetermined response plan to any condition when H2S is detected. All H2S detections in excess of 10 parts per million (ppm) concentration are considered an Emergency.

2. Prevent any and all accidents, and prevent the uncontrolled release of hydrogen sulfide into the atmosphere.

3. Provide proper evacuation procedures to cope with emergencies.

4. Provide immediate and adequate medical attention should an injury occur.

Discussion

Implementation:	This plan with all details is to be fully implemented before drilling to commence.
Emergency response Procedure:	This section outlines the conditions and denotes steps to be taken in the event of an emergency.
Emergency equipment Procedure:	This section outlines the safety and emergency equipment that will be required for the drilling of this well.
Training provisions:	This section outlines the training provisions that must be adhered to prior to drilling.
Drilling emergency call lists:	Included are the telephone numbers of all persons to be contacted should an emergency exist.
Briefing:	This section deals with the briefing of all people involved in the drilling operation.
Public safety:	Public safety personnel will be made aware of any potential evacuation and any additional support needed.
Check lists:	Status check lists and procedural check lists have been included to insure adherence to the plan.
General information:	A general information section has been included to supply support information.

Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on the well:

1. The hazards and characteristics of H2S.
2. Proper use and maintenance of personal protective equipment and life support systems.
3. H2S detection.
4. Proper use of H2S detectors, alarms, warning systems, briefing areas, evacuation procedures and prevailing winds.
5. Proper techniques for first aid and rescue procedures.
6. Physical effects of hydrogen sulfide on the human body.
7. Toxicity of hydrogen sulfide and sulfur dioxide.
8. Use of SCBA and supplied air equipment.
9. First aid and artificial respiration.
10. Emergency rescue.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H2S on metal components. If high tensile strength tubular is to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling a well, blowout prevention and well control procedures.
3. The contents and requirements of the H2S Drilling Operations Plan.

H2S training refresher must have been taken within one year prior to drilling the well. Specifics on the well to be drilled will be discussed during the pre-spud meeting. H2S and well control (choke) drills will be performed while drilling the well, at least on a weekly basis. This plan shall be available in the well site. All personnel will be required to carry the documentation proving that the H2S training has been taken.

Service company and visiting personnel

A. Each service company that will be on this well will be notified if the zone contains H2S.

B. Each service company must provide for the training and equipment of their employees before they arrive at the well site.

C. Each service company will be expected to attend a well site briefing

Emergency Equipment Requirements

1. Well control equipment

The well shall have hydraulic BOP equipment for the anticipated pressures. Equipment is to be tested on installation and follow Oxy Well Control standard, as well as BLM Onshore Order #2.

Special control equipment:

A. Hydraulic BOP equipment with remote control on ground.
B. Rotating head
C. Gas buster equipment shall be installed before drilling out of surface pipe.

2. Protective equipment for personnel

A. Four (4) 30-minute positive pressure air packs (2 at each briefing area) on location.

B. Adequate fire extinguishers shall be located at strategic locations.

C. Radio / cell telephone communication will be available at the rig.

- Rig floor and trailers.
- Vehicle.

3. Hydrogen sulfide sensors and alarms

A. H2S sensor with alarms will be located on the rig floor, at the bell nipple, and at the flow line. These monitors will be set to alarm at 10 ppm with strobe light, and audible alarm.
B. Hand operated detectors with tubes.
C. H2S monitor tester (to be provided by contract Safety Company.)
D. There shall be one combustible gas detector on location at all times.

4. Visual Warning Systems

A. One sign located at each location entrance with the following language:

Caution – potential poison gas
Hydrogen sulfide
No admittance without authorization

H2S-7

Wind sock – wind streamers:

A. One 36" (in length) wind sock located at protection center, at height visible from rig floor.
B. One 36" (in length) wind sock located at height visible from pit areas.

Condition flags

A. One each condition flag to be displayed to denote conditions.

green – normal conditions
yellow – potential danger
red – danger, H2S present

B. Condition flag shall be posted at each location sign entrance.

5. Mud Program

The mud program is designed to minimize the risk of having H2S and other formation fluids at surface. Proper mud weight and safe drilling practices will be applied. H2S scavengers will be used to minimize the hazards while drilling. Below is a summary of the drilling program.

Mud inspection devices:

Garrett gas train or hatch tester for inspection of sulfide concentration in mud system.

6. Metallurgy

A. Drill string, casing, tubing, wellhead, blowout preventers, drilling spools or adapters, kill lines, choke manifold, lines and valves shall be suitable for the H2S service.
B. All the elastomers, packing, seals and ring gaskets shall be suitable for H2S service.

7. Well Testing

No drill stem test will be performed on this well.

8. Evacuation plan

Evacuation routes should be established prior to well spud for each well and discussed with all rig personnel.

9. Designated area

A. Parking and visitor area: all vehicles are to be parked at a predetermined safe distance from the wellhead.
B. There will be a designated smoking area.
C. Two briefing areas on either side of the location at the maximum allowable distance from the well bore so they offset prevailing winds perpendicularly, or at a 45-degree angle if wind direction tends to shift in the area.

Emergency procedures

A. In the event of any evidence of H2S level above 10 ppm, take the following steps:

1. The Driller will pick up off bottom, shut down the pumps, slow down the pipe rotation.

2. Secure and don escape breathing equipment, report to the upwind designated safe briefing / muster area.

3. All personnel on location will be accounted for and emergency search should begin for any missing, the Buddy System will be implemented.

4. Order non-essential personnel to leave the well site, order all essential personnel out of the danger zone and upwind to the nearest designated safe briefing / muster area.

5. Entrance to the location will be secured to a higher level than our usual "Meet and Greet" requirement, and the proper condition flag will be displayed at the entrance to the location.

6. Take steps to determine if the H2S level can be corrected or suppressed and, if so, proceed as required.

B. If uncontrollable conditions occur:

1. Take steps to protect and/or remove any public in the down-wind area from the rig – partial evacuation and isolation. Notify necessary public safety personnel and appropriate regulatory entities (i.e. BLM) of the situation.

2. Remove all personnel to the nearest upwind designated safe briefing / muster area or off location.

3. Notify public safety personnel of safe briefing / muster area.

4. An assigned crew member will blockade the entrance to the location. No unauthorized personnel will be allowed entry to the location.

5. Proceed with best plan (at the time) to regain control of the well. Maintain tight security and safety procedures.

C. Responsibility:

1. Designated personnel.

a. Shall be responsible for the total implementation of this plan.
b. Shall be in complete command during any emergency.
c. Shall designate a back-up.

All personnel:	1. On alarm, don escape unit and report to the nearest upwind designated safe briefing / muster area upw 2. Check status of personnel (buddy system). 3. Secure breathing equipment. 4. Await orders from supervisor.
Drill site manager:	1. Don escape unit if necessary and report to nearest upwind designated safe briefing / muster area. 2. Coordinate preparations of individuals to return to point of release with tool pusher and driller (using the buddy system). 3. Determine H2S concentrations. 4. Assess situation and take control measures.
Tool pusher:	1. Don escape unit Report to up nearest upwind designated safe briefing / muster area. 2. Coordinate preparation of individuals to return to point of release with tool pusher drill site manager (using the buddy system). 3. Determine H2S concentration. 4. Assess situation and take control measures.
Driller:	1. Don escape unit, shut down pumps, continue rotating DP.

	2.	Check monitor for point of release.
	3.	Report to nearest upwind designated safe briefing / muster area.
	4.	Check status of personnel (in an attempt to rescue, use the buddy system).
	5.	Assigns least essential person to notify Drill Site Manager and tool pusher by quickest means in case of their absence.
	6.	Assumes the responsibilities of the Drill Site Manager and tool pusher until they arrive should they be absent.
Derrick man Floor man #1 Floor man #2	1.	Will remain in briefing / muster area until instructed by supervisor.
Mud engineer:	1.	Report to nearest upwind designated safe briefing / muster area.
	2.	When instructed, begin check of mud for ph and H2S level. (Garett gas train.)
Safety personnel:	1.	Mask up and check status of all personnel and secure operations as instructed by drill site manager.

Taking a kick

When taking a kick during an H2S emergency, all personnel will follow standard Well control procedures after reporting to briefing area and masking up.

Open-hole logging

All unnecessary personnel off floor. Drill Site Manager and safety personnel should monitor condition, advise status and determine need for use of air equipment.

Running casing or plugging

Following the same "tripping" procedure as above. Drill Site Manager and safety personnel should determine if all personnel have access to protective equipment.

Ignition procedures

The decision to ignite the well is the responsibility of the operator (Oxy Drilling Management). The decision should be made only as a last resort and in a situation where it is clear that:

1. Human life and property are endangered.
2. There is no hope controlling the blowout under the prevailing conditions at the well.

Instructions for igniting the well

1. Two people are required for the actual igniting operation. They must wear self-contained breathing units and have a safety rope attached. One man (tool pusher or safety engineer) will check the atmosphere for explosive gases with the gas monitor. The other man is responsible for igniting the well.
2. Primary method to ignite: 25 mm flare gun with range of approximately 500 feet.
3. Ignite upwind and do not approach any closer than is warranted.
4. Select the ignition site best for protection, and which offers an easy escape route.
5. Before firing, check for presence of combustible gas.
6. After lighting, continue emergency action and procedure as before.
7. All unassigned personnel will remain in briefing area until instructed by supervisor or directed by the Drill Site Manager.

Remember: After well is ignited, burning hydrogen sulfide will convert to sulfur dioxide, which is also highly toxic. **Do not assume the area is safe after the well is ignited.**

Status check list

Note: All items on this list must be completed before drilling to production casing point.

1. H2S sign at location entrance.
2. Two (2) wind socks located as required.
3. Four (4) 30-minute positive pressure air packs (2 at each Briefing area) on location for all rig personnel and mud loggers.
4. Air packs inspected and ready for use.
5. Cascade system and hose line hook-up as needed.
6. Cascade system for refilling air bottles as needed.
7. Condition flag on location and ready for use.
8. H2S detection system hooked up and tested.
9. H2S alarm system hooked up and tested.
10. Hand operated H2S detector with tubes on location.
11. 1 – 100' length of nylon rope on location.
12. All rig crew and supervisors trained as required.
13. All outside service contractors advised of potential H2S hazard on well.
14. No smoking sign posted and a designated smoking area identified.
15. Calibration of all H2S equipment shall be noted on the IADC report.

Checked by:_____ Date:_____

Procedural check list during H2S events

Perform each tour:

1. Check fire extinguishers to see that they have the proper charge.
2. Check breathing equipment to ensure that it in proper working order.
3. Make sure all the H2S detection system is operative.

Perform each week:

1. Check each piece of breathing equipment to make sure that demand or forced air regulator is working. This requires that the bottle be opened and the mask assembly be put on tight enough so that when you inhale, you receive air or feel air flow.
2. BOP skills (well control drills).
3. Check supply pressure on BOP accumulator stand by source.
4. Check breathing equipment mask assembly to see that straps are loosened and turned back, ready to put on.
5. Check pressure on breathing equipment air bottles to make sure they are charged to full volume. (Air quality checked for proper air grade "D" before bringing to location)
6. Confirm pressure on all supply air bottles.
7. Perform breathing equipment drills with on-site personnel.
8. Check the following supplies for availability.

    A. Emergency telephone list.
    B. Hand operated H2S detectors and tubes.

General evacuation plan

1. When the company approved supervisor (Drill Site Manager, consultant, rig pusher, or driller) determines the H2S gas cannot be limited to the well location and the public will be involved, he will activate the evacuation plan.

2. Drill Site Manager or designee will notify local government agency that a hazardous condition exists and evacuation needs to be implemented.

3. Company or contractor safety personnel that have been trained in the use of H2S detection equipment and self-contained breathing equipment will monitor H2S concentrations, wind directions, and area of exposure. They will delineate the outer perimeter of the hazardous gas area. Extension to the evacuation area will be determined from information gathered.

4. Law enforcement personnel (state police, police dept., fire dept., and sheriff's dept.) Will be called to aid in setting up and maintaining road blocks. Also, they will aid in evacuation of the public if necessary.

5. After the discharge of gas has been controlled, company safety personnel will determine when the area is safe for re-entry.

Important: Law enforcement personnel will not be asked to come into a contaminated area. Their assistance will be limited to uncontaminated areas. Constant radio contact will be maintained with them.

Emergency actions

Well blowout – if emergency

1. Evacuate all personnel to "Safe Briefing / Muster Areas" or off location if needed.
2. If sour gas – evacuate rig personnel.
3. If sour gas – evacuate public within 3000 ft radius of exposure.
4. Don SCBA and shut well in if possible using the buddy system.
5. Notify Drilling Superintendent and call 911 for emergency help (fire dept and ambulance) if needed.
6. Implement the Blowout Contingency Plan, and Drilling Emergency Action Plan.
6. Give first aid as needed.

Person down location/facility

1. If immediately possible, contact 911. Give location and wait for confirmation.
2. Don SCBA and perform rescue operation using buddy system.

Toxic effects of hydrogen sulfide

Hydrogen sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 ppm, which is .001% by volume. Hydrogen sulfide is heavier than air (specific gravity – 1.192) and colorless. It forms an explosive mixture with air between 4.3 and 46.0 percent by volume. Hydrogen sulfide is almost as toxic as hydrogen cyanide and is between five and six times more toxic than carbon monoxide. Toxicity data for hydrogen sulfide and various other gases are compared in table i. Physical effects at various hydrogen sulfide exposure levels are shown in table ii.

Table i
Toxicity of various gases

Common name	Chemical formula	Specific gravity (sc=1)	Threshold limit (1)	Hazardous limit (2)	Lethal concentration (3)
Hydrogen Cyanide	Hcn	0.94	10 ppm	150 ppm/hr	300 ppm
Hydrogen Sulfide	H2S	1.18	10 ppm	250 ppm/hr	600 ppm
Sulfur Dioxide	So2	2.21	5 ppm	-	1000 ppm
Chlorine	Cl2	2.45	1 ppm	4 ppm/hr	1000 ppm
Carbon Monoxide	Co	0.97	50 ppm	400 ppm/hr	1000 ppm
Carbon Dioxide	Co2	1.52	5000 ppm	5%	10%
Methane	Ch4	0.55	90,000 ppm	Combustible above 5% in air	

1) threshold limit – concentration at which it is believed that all workers may be repeatedly exposed day after day without adverse effects.

2) hazardous limit – concentration that will cause death with short-term exposure.

3) lethal concentration – concentration that will cause death with short-term exposure.

Toxic effects of hydrogen sulfide

Table ii
Physical effects of hydrogen sulfide

Concentration			Physical effects
Percent (%)	Ppm	Grains 100 std. Ft3*	
0.001	<10	00.65	Obvious and unpleasant odor.

0.002	10	01.30	Safe for 8 hours of exposure.
0.010	100	06.48	Kill smell in 3 – 15 minutes. May sting eyes and throat.
0.020	200	12.96	Kills smell shortly; stings eyes and throat.
0.050	500	32.96	Dizziness; breathing ceases in a few minutes; needs prompt artificial respiration.
0.070	700	45.36	Unconscious quickly; death will result if not rescued promptly.
0.100	1000	64.30	Unconscious at once; followed by death within minutes.

*at 15.00 psia and 60'f.

Use of self-contained breathing equipment (SCBA)

1. Written procedures shall be prepared covering safe use of SCBA's in dangerous atmosphere, which might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available SCBA.

2 SCBA's shall be inspected frequently at random to insure that they are properly used, cleaned, and maintained.

3. Anyone who may use the SCBA's shall be trained in how to insure proper face-piece to face seal. They shall wear SCBA's in normal air and then wear them in a test atmosphere. (note: such items as facial hair {beard or sideburns} and eyeglasses will not allow proper seal.) Anyone that may be reasonably expected to wear SCBA's should have these items removed before entering a toxic atmosphere. A special mask must be obtained for anyone who must wear eyeglasses or contact lenses.

4. Maintenance and care of SCBA's:

   a. A program for maintenance and care of SCBA's shall include the following:
      1. Inspection for defects, including leak checks.
      2. Cleaning and disinfecting.
      3. Repair.
      4. Storage.

   b. Inspection, self-contained breathing apparatus for emergency use shall be inspected monthly.
      1. Fully charged cylinders.
      2. Regulator and warning device operation.
      3. Condition of face piece and connections.
      4. Rubber parts shall be maintained to keep them pliable and prevent deterioration.

   c. Routinely used SCBA's shall be collected, cleaned and disinfected as frequently as necessary to insure proper protection is provided.

5. Persons assigned tasks that requires use of self-contained breathing equipment shall be certified physically fit (medically cleared) for breathing equipment usage at least annually.

6. SCBA's should be worn when:

   A. Any employee works near the top or on top of any tank unless test reveals less than 10 ppm of H2S.

B. When breaking out any line where H2S can reasonably be expected.

C. When sampling air in areas to determine if toxic concentrations of H2S exists.

D. When working in areas where over 10 ppm H2S has been detected.

E. At any time there is a doubt as to the H2S level in the area to be entered.

Rescue
First aid for H2S poisoning

Do not panic!

Remain calm – think!

1. Don SCBA breathing equipment.

2. Remove victim(s) utilizing buddy system to fresh air as quickly as possible. (go up-wind from source or at right angle to the wind. Not down wind.)

3. Briefly apply chest pressure – arm lift method of artificial respiration to clean the victim's lungs and to avoid inhaling any toxic gas directly from the victim's lungs.

4. Provide for prompt transportation to the hospital, and continue giving artificial respiration if needed.

5. Hospital(s) or medical facilities need to be informed, before-hand, of the possibility of H2S gas poisoning – no matter how remote the possibility is.

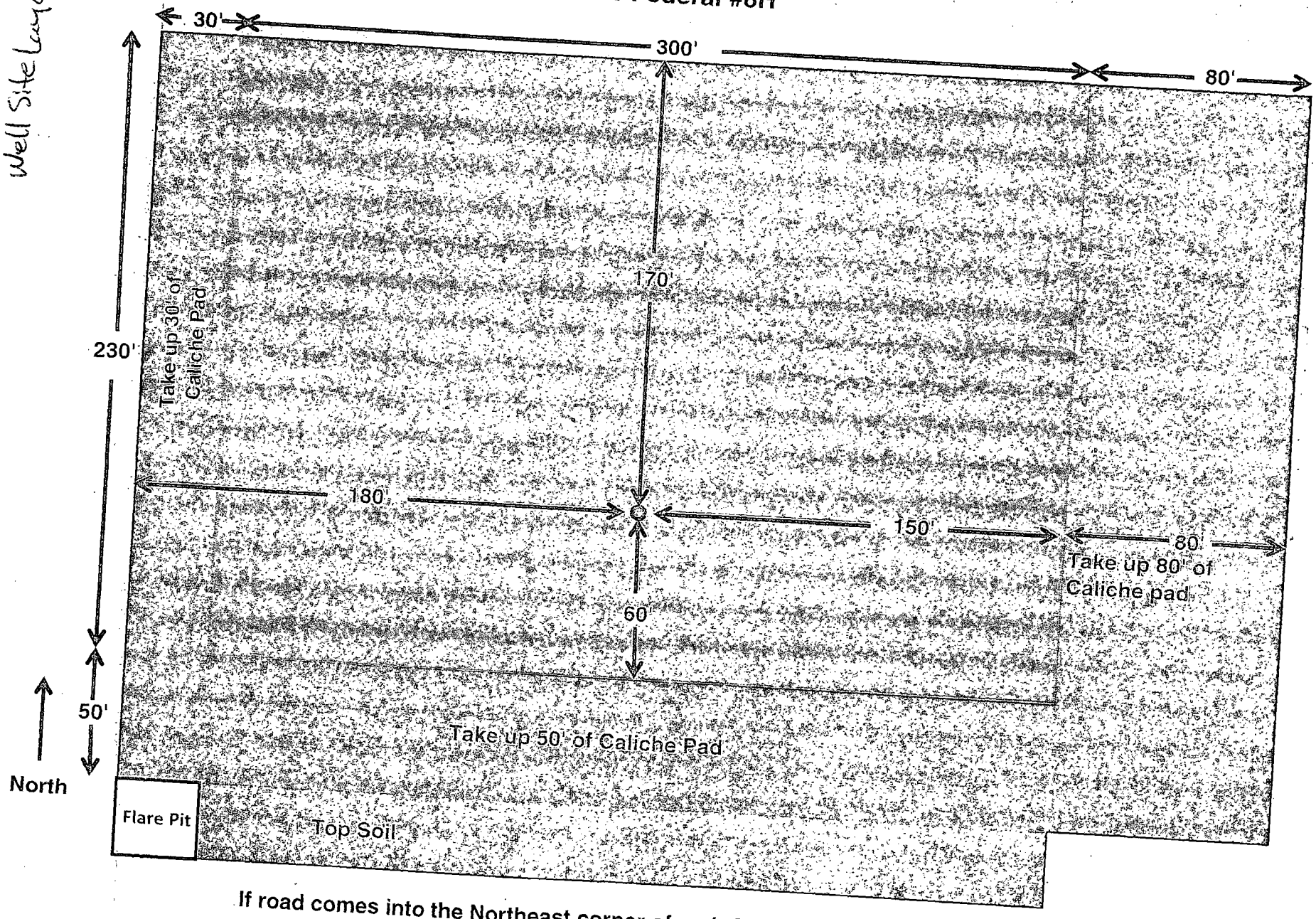
6. Notify emergency room personnel that the victim(s) has been exposed to H2S gas.

Besides basic first aid, everyone on location should have a good working knowledge of artificial respiration.

Revised CM 6/27/2012

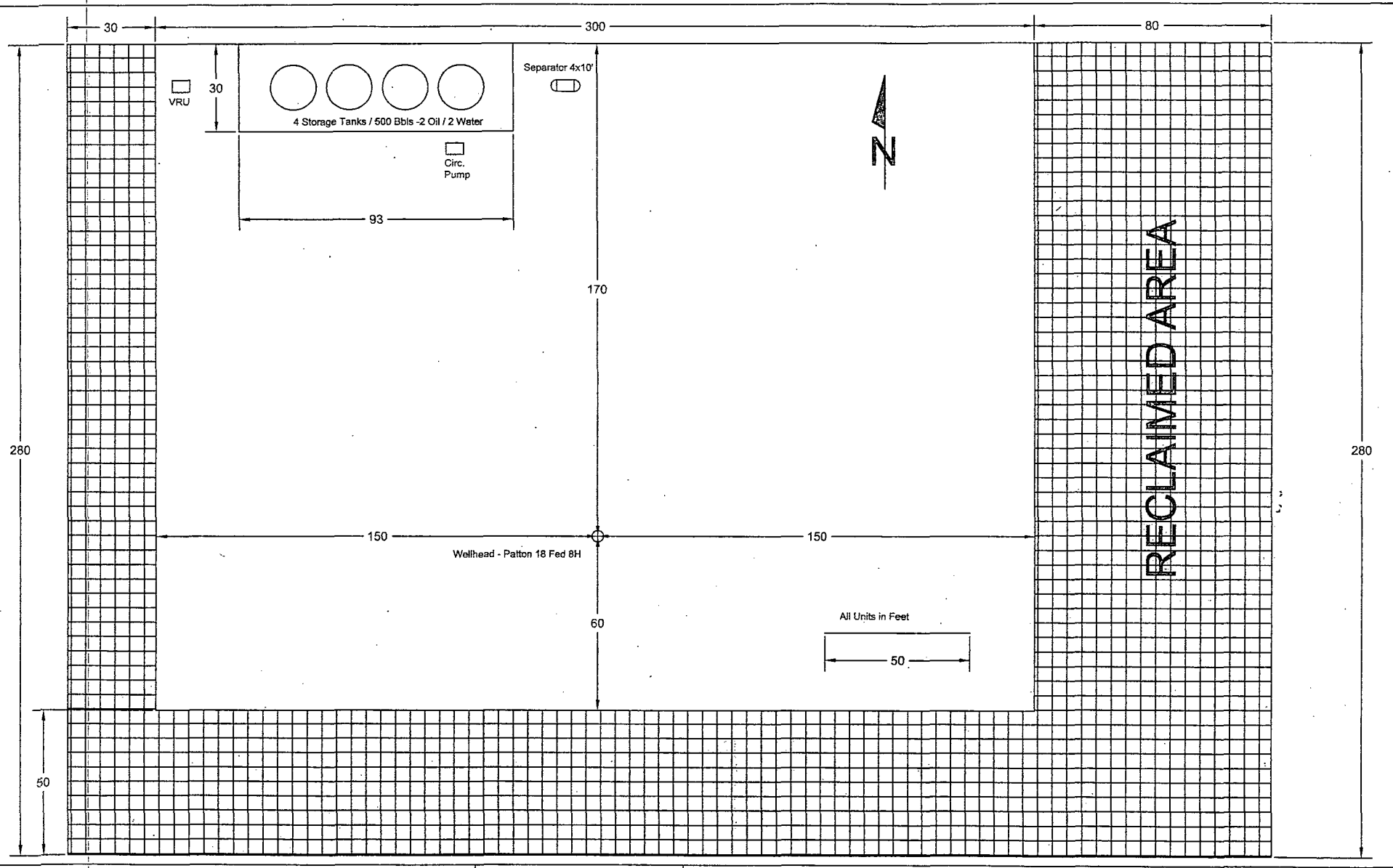
Well Site Layout

H & P 370 - V-Door West
8' Diameter x 8' Deep Tinhorn Cellar
Patton 18 Federal #8H



If road comes into the Northeast corner of pad, Oxy will take up 50' on South side and 80' on East side and 30' on the West side of pad

Facility Layout



REVISION BLOCK						ENGINEERING RECORD	
NO.	DATE	DESCRIPTION	BY	CHK	APP	BY	DATE
A	01/14/13	Plot Plan for Permiting	RJG			RJG	01/14/2013

PRODUCTION FACILITY LAYOUT

Patton 18 Fed 8H

SURFACE USE PLAN OF OPERATIONS

Operator Name/Number:	OXY USA Inc.	16696
Lease Name/Number:	Patton 18 Federal #8H	304917
Pool Name/Number:	Cotton Draw Bone Spring	13367
Surface Location:	150 FSL 1700 FEL SWSE(O) Sec 18 T24S R31E	Federal Lease No.NMNM89819
Penetration Point:	330 FSL 1700 FEL SWSE(O) Sec 18 T24S R31E	
Bottom Hole Location:	330 FNL 1700 FEL NWNE(B) Sec 18 T24S R31E	

1. Existing Roads

a. A copy of a USGS "Big Stinks, NM" quadrangle map is attached showing the proposed location. The well location is spotted on this map, which shows the existing road system.

b. The well was staked by Terry J. Asel, Certificate No. 15079 on 10/29/12, certified 11/6/12.

c. Directions to Location: From the intersection of SH 128 and CR 787, go south on CR 787 for 5.6 miles. Turn right and go west for 0.4 miles. Turn left on caliche road and go south for 0.6 miles. Turn left and go southeast for 0.1 miles. Go east for 0.1 miles, go south for 0.1 miles, go east for 0.1 miles to location.

2. New or Reconstructed Access Roads:

a. No new access road will be built.
b. Surfacing material: N/A
c. Maximum Grade: N/A
d. Turnouts: None needed
e. Drainage Design: N/A
f. Culverts: None needed
g. Cut and fills: N/A
h. Gates or cattleguards: none required.
i. Blade, water & repair an existing caliche road as needed.

3. Location of Existing Wells:

Existing wells within a one mile radius of the proposed well are shown on attached plat.

4. Location of Existing and/or Proposed Production Facilities.

a. In the event the well is found productive, the Patton 18 Federal tank battery would be utilized and the necessary production equipment will be installed at the well site. See proposed Production Facilities Layout diagram.

b. If necessary, electric power poles will be set along side of the access road.

c. All flowlines will adhere to API Standards.

5. Location and types of Water Supply.

This well will be drilled using a combination of water mud systems. It will be obtained from commercial water stations in the area and will be hauled to location by transport truck using existing and proposed roads.

6. Construction Materials:

All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM approved pit or from prevailing deposits found under the location. Will use BLM recommended use of extra caliche from other locations close by for roads, if available.

7. Methods of Handling Waste Material:

a. 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, see C-144 CLEZ.
   1. Solids - CRI
   2. Liquids - Laguna

b. All trash, junk, and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed, all contents will be removed and disposed of in an approved sanitary landfill.

c. The supplier, including broken sacks, will pick up slats remaining after completion of well.

d. A Porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.

e. Disposal of fluids to be transported will be by the following companies:
   TFH Ltd. - Laguna SWD Facility

8. Ancillary Facilities: None needed

9. Well Site Layout

The proposed well site layout with dimensions of the pad layout and equipment location.

V-Door - West Tanks - South Pad - 280' X 410'

10. Plans for Surface Reclamation:

a. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The original top soil will again be returned to the pad and contoured, as close as possible, to the original topography.

b. If the well is deemed commercially productive, caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography, and the area will be seeded with an approved BLM mixture to re-establish vegetation.

11. Surface Ownership

The surface is owned by the U.S. Government and is administered by the BLM. The surface is multiple use with the primary uses of the region for the grazing of livestock and the production of oil and gas. The surface is leased to: Richardson Cattle Co. P.O. Box 487 Carlsbad, NM 88221
They will be notified of our intention to drill prior to any activity.

12. Other Information

a. The vegetation cover is generally sparse consisting of mesquite, yucca, shinnery oak, sandsage and perennial. native range grass. The topsoil is sandy in nature. Wildlife in the area is also sparse consisting of deer, coyotes, rabbits, rodents, reptiles, dove and quail.

b. There is no permanent or live water in the general proximity of the location.

c. The nearest dwelling is approximately 4160' northeast from the well site.

d. Cultural Resources Examination - this well is located in the Permian Basin MOA.

Pad + 1/4 mile road	$1,463.00	$0.18/ft over 1/4 mile	$0.00	$1,463.00
Pipeline - up to 1mile	$1,350.00	$282 per 1/4 mile	$0.00	$1,350.00
Electric Line - up to 1mile	$676.00	$0.20/ft over 1 mile	$0.00	$676.00
Total	$3,489.00		$0.00	$3,489.00

13. Bond Coverage:

Bond Coverage is Individual-NMB000862, Nationwide-ESB00226.

Operators Representatives:

The OXY Permian representatives responsible for ensuring compliance of the surface use plan are listed below.

Kim Moore
Production Coordinator
1017 W. Stanolind Rd.
Hobbs, NM 88240
Office Phone: 575-397-8236
Cellular: 575-706-1219

Charles Wagner
Manager Field Operations
1502 West Commerce Dr.
Carlsbad, NM 88220
Office Phone: 575-628-4151
Cellular: 575-725-8306

Roger Allen
Drilling Superintendent
P.O. Box 4294
Houston, TX 77210
Office Phone: 713-215-7617
Cellular: 281-682-3919

Calvin (Dusty) Weaver
Operation Specialist
P.O. Box 50250
Midland, TX 79710
Office Phone: 432-685-5723
Cellular: 806-893-3067

Sebastian Millan
Drilling Engineering Supervisor
P.O. Box 4294
Houston, TX 77210
Office Phone: 713-985-8750
Cellular: 713-528-3268

Anar Khalilov
Drilling Engineer
P.O. Box 4294
Houston, TX 77210
Office Phone: 713-985-6959
Cellular: 832-205-6365

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	OXY USA INC
LEASE NO.:	NM89819
WELL NAME & NO.:	8H Patton 18 Federal
SURFACE HOLE FOOTAGE:	150' FSL & 1700' FEL
BOTTOM HOLE FOOTAGE	330' FNL & 1700' FEL
LOCATION:	Section 18, T.24 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

☐ **General Provisions**
☐ **Permit Expiration**
☐ **Archaeology, Paleontology, and Historical Sites**
☐ **Noxious Weeds**
☒ **Special Requirements**
- Lesser Prairie-Chicken Timing Stipulations
- Ground-level Abandoned Well Marker

☐ **Construction**
- Notification
- Topsoil
- Closed Loop System
- Federal Mineral Material Pits
- Well Pads
- Roads

☐ **Road Section Diagram**
☒ **Drilling**
- Secretary's Potash
- Waste Material and Fluids
- Logging Requirements

☐ **Production (Post Drilling)**
- Well Structures & Facilities

☐ **Interim Reclamation**
☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 4 inches in depth. The topsoil will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of

surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

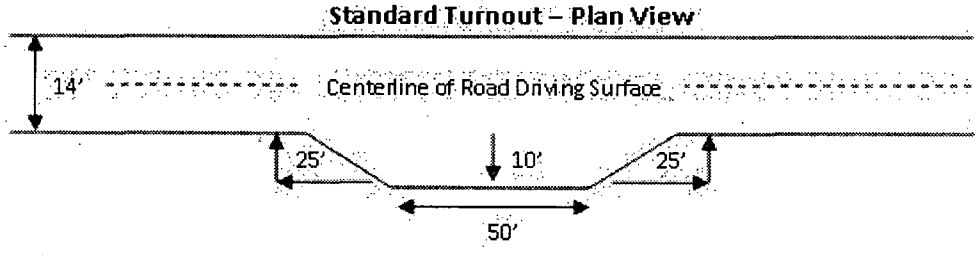
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

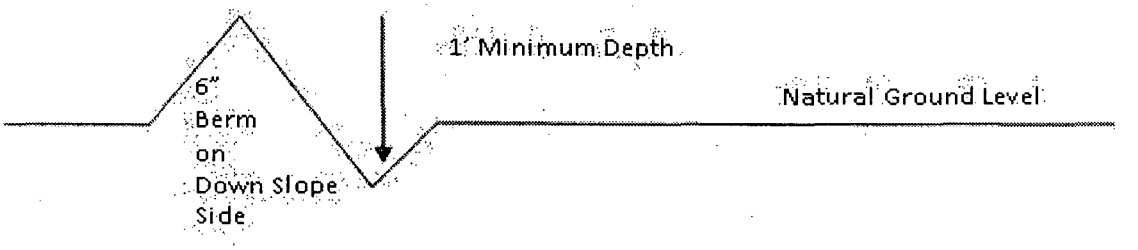
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$\text{400 foot road with 4\% road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Culvert Installations
Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards
An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

Fence Requirement

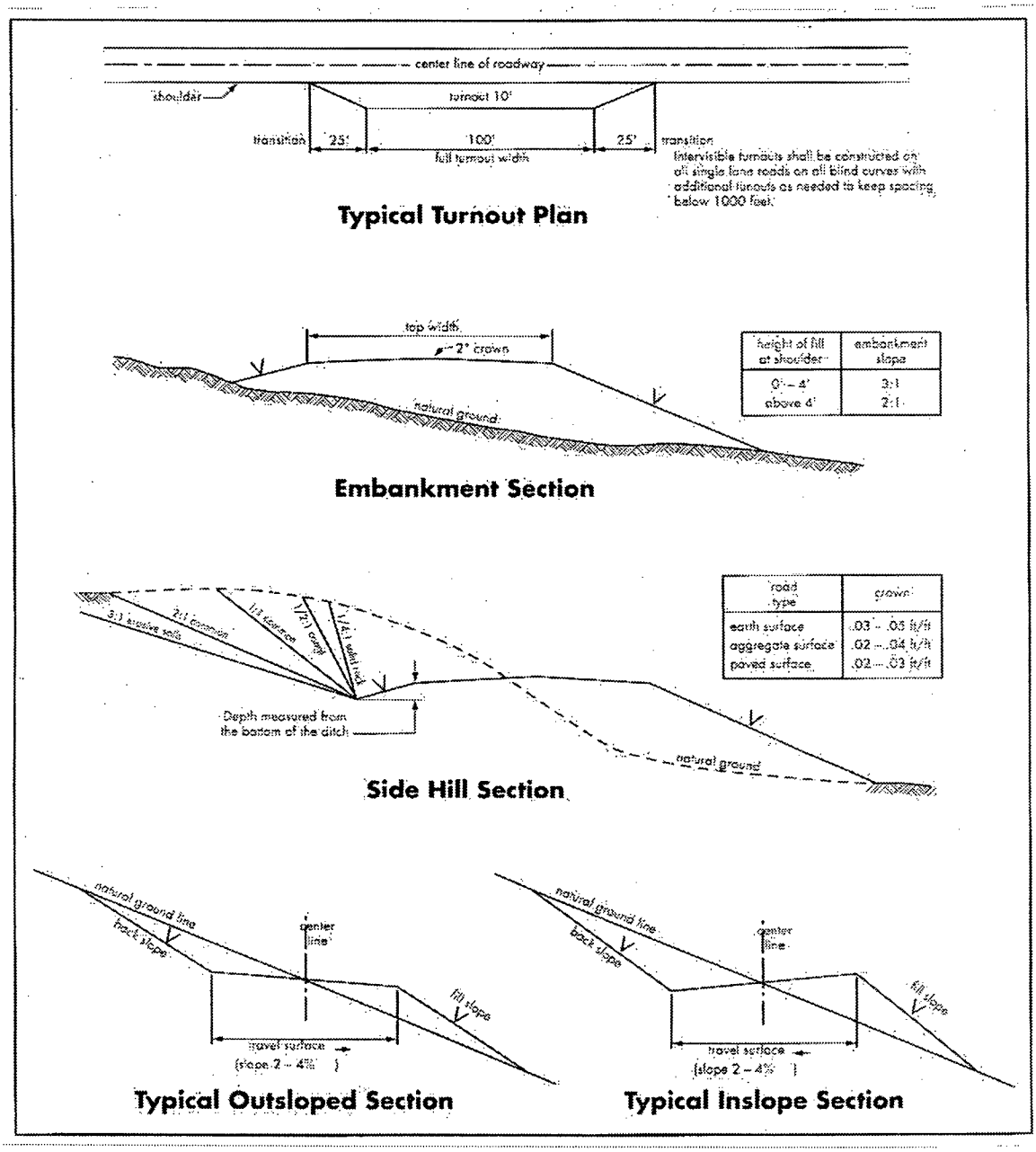
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If Hydrogen Sulfide is encountered, provide measured concentrations and formations to the BLM in accordance with Onshore Oil and Gas Order #6.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#).

Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Secretary's Potash
Possible water and brine flows in the Salado, Castile, Delaware, and Bone Spring.
Possible lost circulation in the Delaware and Bone Spring.

1. The **13-3/8** inch surface casing shall be set at approximately **898** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Formation below the 13-3/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is: **(Ensure casing is set in the base of the Castile or the Lamar at approximately 4200')**

   ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

The pilot hole plugging procedure is approved as written.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

   a. First stage to DV tool:

   ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

   b. Second stage above DV tool:

   ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with third stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

   c. Third stage above DV tool:

   ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Additional cement may be required – excess calculates to 12%.**

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review**. If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

    c. The results of the test shall be reported to the appropriate BLM office.

    d. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.
Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

CRW 032213

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, Shale Green from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. PIPELINES (not applied for in APD)

C. ELECTRIC LINES (not applied for in APD)

IX. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture for LPC Sand/Shinnery Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed