Carlsbad Field Office
NM OIL CONSERVATION
ARTESIA DISTRICT
OCD Artesia
MAY 05 2016
RECEIVED

ATS-16-919

Form 3160-3
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0136
Expires July 31, 2010

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM13996

6. If Indian, Allottee 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.
CEDAR CANYON 21 FEDERAL COM 5H

2. Name of Operator
OXY USA INCORPORATED
Contact: DAVID STEWART
E-Mail: david_stewart@oxy.com

9. API Well No.
30-015-43749

3a. Address
5 GREENWAY PLAZA SUITE 110
HOUSTON, TX 77046-0521

3b. Phone No. (include area code)
Ph: 432.685.5717

10. Field and Pool, or Exploratory
~~UNKNOWN~~
Corral Draw; Bone Spring

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

At surface SWSW 1090FSL 207FWL 32.198549 N Lat, 103.979724 W Lon

At proposed prod. zone NWSW 1980FSL 180FWL 32.200993 N Lat, 103.996967 W Lon

11. Sec., T., R., M., or Blk. and Survey or Area
Sec 22 T24S R29E Mer NMP

14. Distance in miles and direction from nearest town or post office*
6 MILES NORTHEAST 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)
207'

16. No. of Acres in Lease
199.71

17. Spacing Unit dedicated to this well
160.00

18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.
30'

19. Proposed Depth
13381 MD
8715 TVD

20. BLM/BIA Bond No. on file
NMB000862

21. Elevations (Show whether DF, KB, RT, GL, etc.
2940 GL

22. Approximate date work will start
09/26/2016

23. Estimated duration
30DAYS

Closed Loop

The NMOCD Gas Capture Plan notice has been posted on the web site under Announcements. A copy of the GCP form is included with the notice and is also in the forms section under Unnumbered forms. Please submit accordingly.

Accepted for record
NMOCD

24. Attachments

Onshore Oil and Gas Order No. 1, shall be attached to this form:

Lands, the

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.

(Electronic Submission)	Name (Printed/Typed) DAVID STEWART Ph: 432.685.5717	Date 02/29/2016
Title REGULATORY ADVISOR		
Approved by (Signature) /s/George MacDonell	Name (Printed/Typed)	Date 4/29/16
Title FIELD MANAGER	Office BLM-CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify 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.

Additional Operator Remarks (see next page)

Witness Surface Casing

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

Electronic Submission #332473 verified by the BLM Well Information System
For OXY USA INCORPORATED, sent to the Carlsbad
Committed to AFMSS for processing by JAMIE RHOADES on 03/15/2016 (16JLR0329AE)

SEE ATTACHED FOR CONDITIONS OF APPROVAL

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Carlsbad Controlled Water Basin

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 29th day of February, 2016.

Signature: _____

Name: Omar Lisigurski

Position: Reservoir Management Team Leader

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

Telephone: 713-215-7506

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

Company: Occidental Permian LP/OXY USA Inc./OXY USA WTP LP

Field Representative (if not above signatory): Jim Wilson

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

Telephone (if different from above): 575-631-2442

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

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
30-015-43749	96235	Corral Draw Bone Spring

Property Code	Property Name	Well Number
315207	CEDAR CANYON "21" FEDERAL COM	5H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	2940.4'

Surface Location

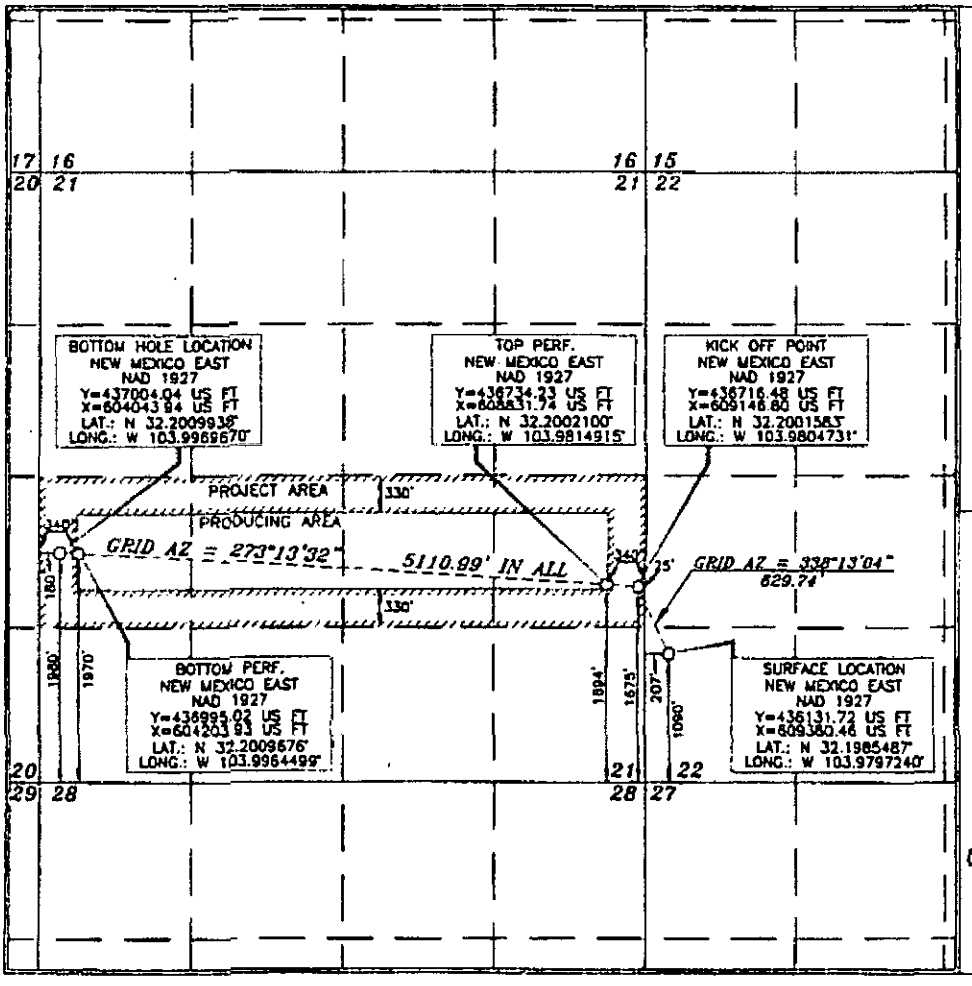
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	22	24 SOUTH	29 EAST, N.M.P.M.		1090'	SOUTH	207'	WEST	EDDY

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
L	21	24 SOUTH	29 EAST, N.M.P.M.		1980'	SOUTH	180'	WEST	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 — Date: 2/29/16

David Stewart - Sr. Reg Adv.
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.

JANUARY 15, 2016
Date of Survey

TERRY J. ASEL — 15079 — NEW MEXICO — PROFESSIONAL LAND SURVEYOR

Signature and Seal of Professional Surveyor:

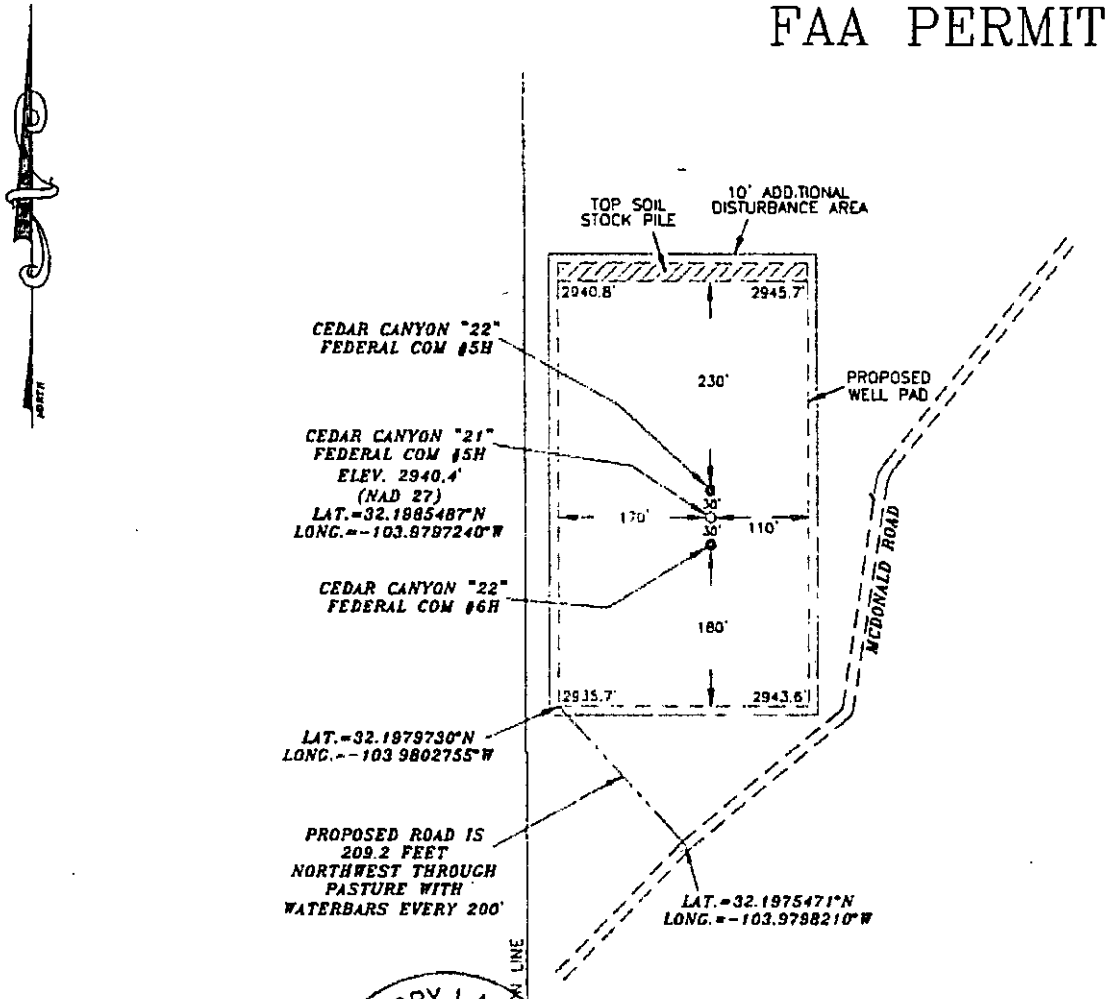
Certificate Number: 15079

WO# 160115WL-a (Rev. A) (KA)

Site Plan

OXY USA INC.
CEDAR CANYON "21" FEDERAL COM #5H
SITE PLAN

FAA PERMIT: NO



TERRY J ASEL NEW MEXICO 15079 REGISTERED PROFESSIONAL LAND SURVEYOR

LEGEND

- - DENOTES PROPOSED WELL PAD
- - - - - DENOTES PROPOSED ROAD
- DENOTES STOCK PILE AREA

200' 0 200' 400' FEET

SCALE: 1"=200'

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 2/16/2016

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

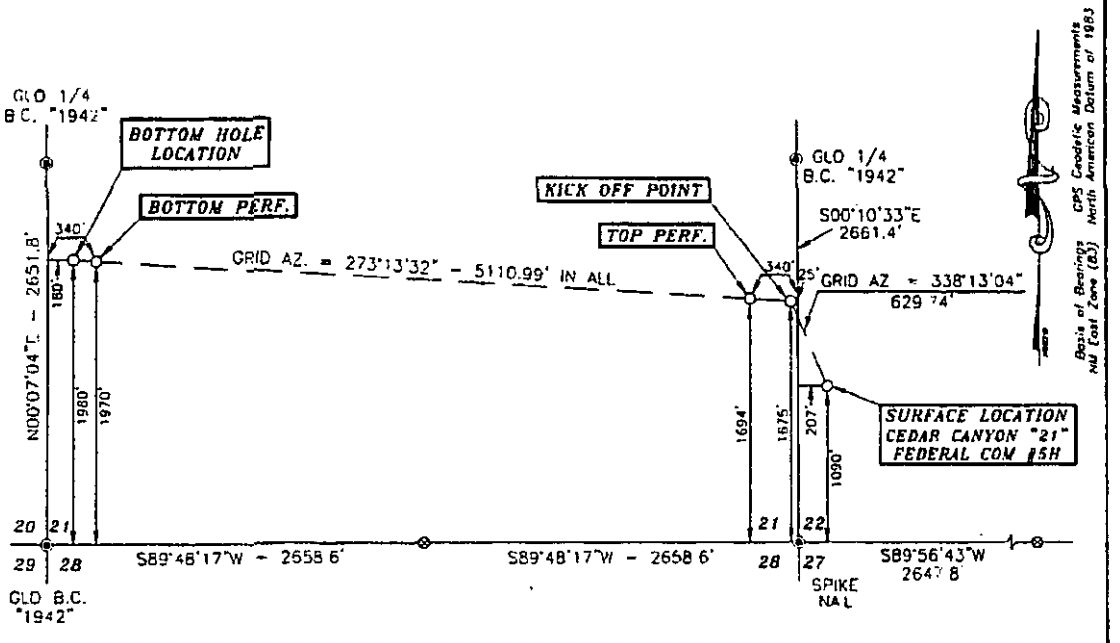
OXY USA INC.

CEDAR CANYON "21" FEDERAL COM #5H
LOCATED AT 1090' FSL & 207' FWL IN
SECTION 22, TOWNSHIP 24 SOUTH, RANGE 29
EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 01/15/16	Sheet 1 of 1 Sheets	
W.O. Number: 160115WL-a (Rev. A)	Drawn By: KA	Rev: A
Date: 02/15/16	160115WL-a	Scale: 1"=200'

Location 1

SECTIONS 22 & 21, TOWNSHIP 24 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY NEW MEXICO



DRIVING DIRECTIONS:
FROM THE INTERSECTION OF U.S. HWY. #285 AND BLACK RIVER VILLAGE ROAD IN MALAGA, GO EAST ON COUNTY ROAD #720 FOR 1.3 MILES, TURN RIGHT ON COUNTY ROAD #746 (MCDONALD ROAD) AND GO SOUTH FOR 0.8 MILES, CONTINUE SOUTHEAST/EAST FOR 4.8 MILES, CURVE TO THE LEFT FOR 0.4 MILES, TURN LEFT AND GO WEST FOR 0.1 MILES, TURN RIGHT AND GO NORTH FOR 0.5 MILES, TURN LEFT ON PROPOSED ROAD AND GO NORTHWEST FOR 209.2 FEET TO LOCATION

TERRY J ASEL
NEW MEXICO
15079
REGISTERED PROFESSIONAL LAND SURVEYOR

LEGEND
⊕ - DENOTES FOUND MONUMENT AS NOTED
⊗ - DENOTES CALCULATED CORNER

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 2/16/2016
Terry J. Asel N.M.P.L.S. No. 15079

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

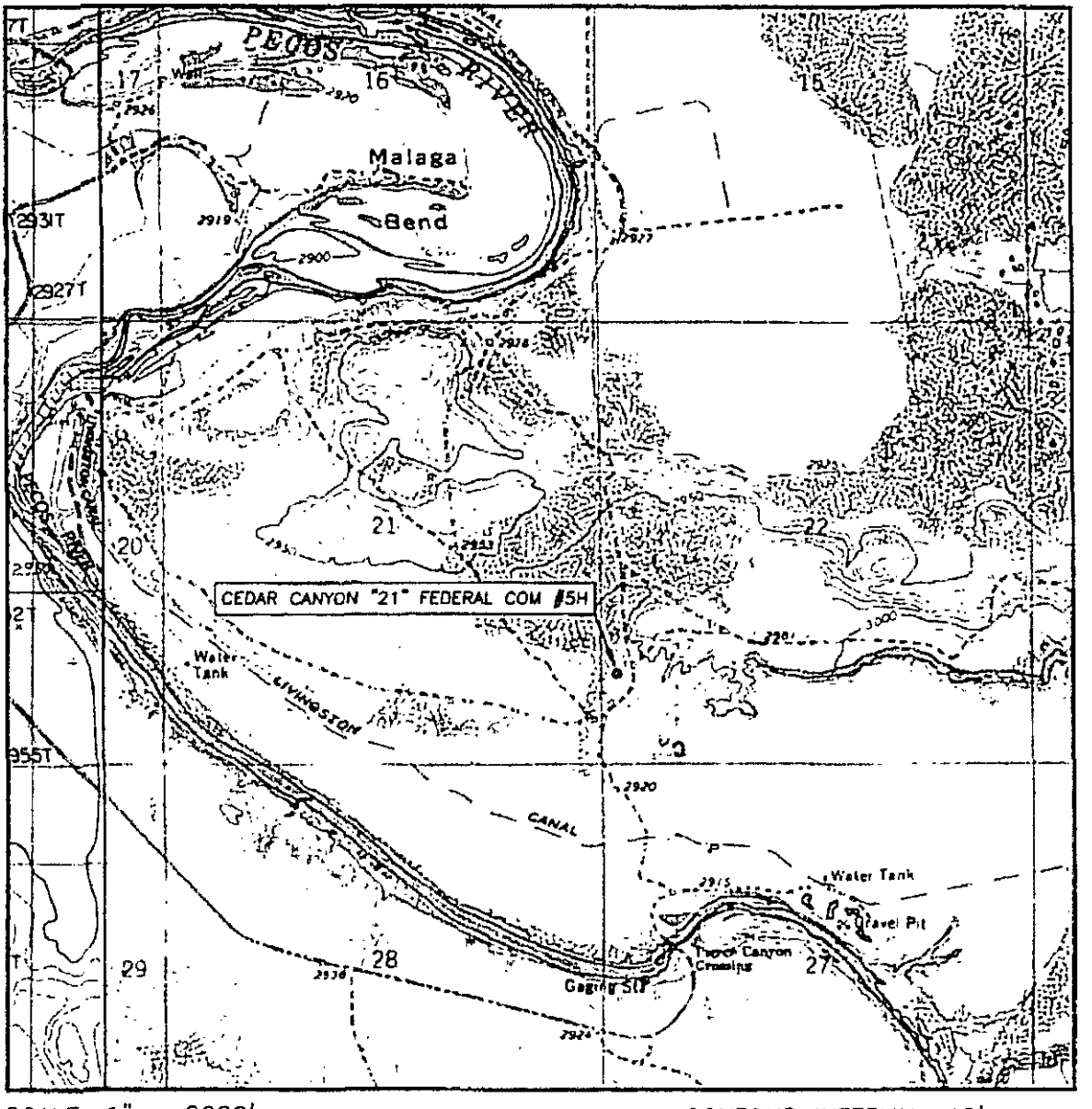
OXY USA INC.

CEDAR CANYON "21" FEDERAL COM #5H
LOCATED AT 1090' FSL & 207' FWL IN
SECTION 22, TOWNSHIP 24 SOUTH, RANGE 29
EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 01/15/16	Sheet 1 of 1 Sheets	
W.O. Number: 160115WL-a (Rev A)	Drawn By: KA	Rev: A
Date: 02/15/16	160115WL-a	Scale 1"=1000'

LUM

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: 10'

SEC. 22 TWP. 24-S RGE. 29-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 1090' FSL & 207' FWL

ELEVATION 2940.4'

OPERATOR OXY USA INC.

LEASE CEDAR CANYON "21" FEDERAL COM #5H

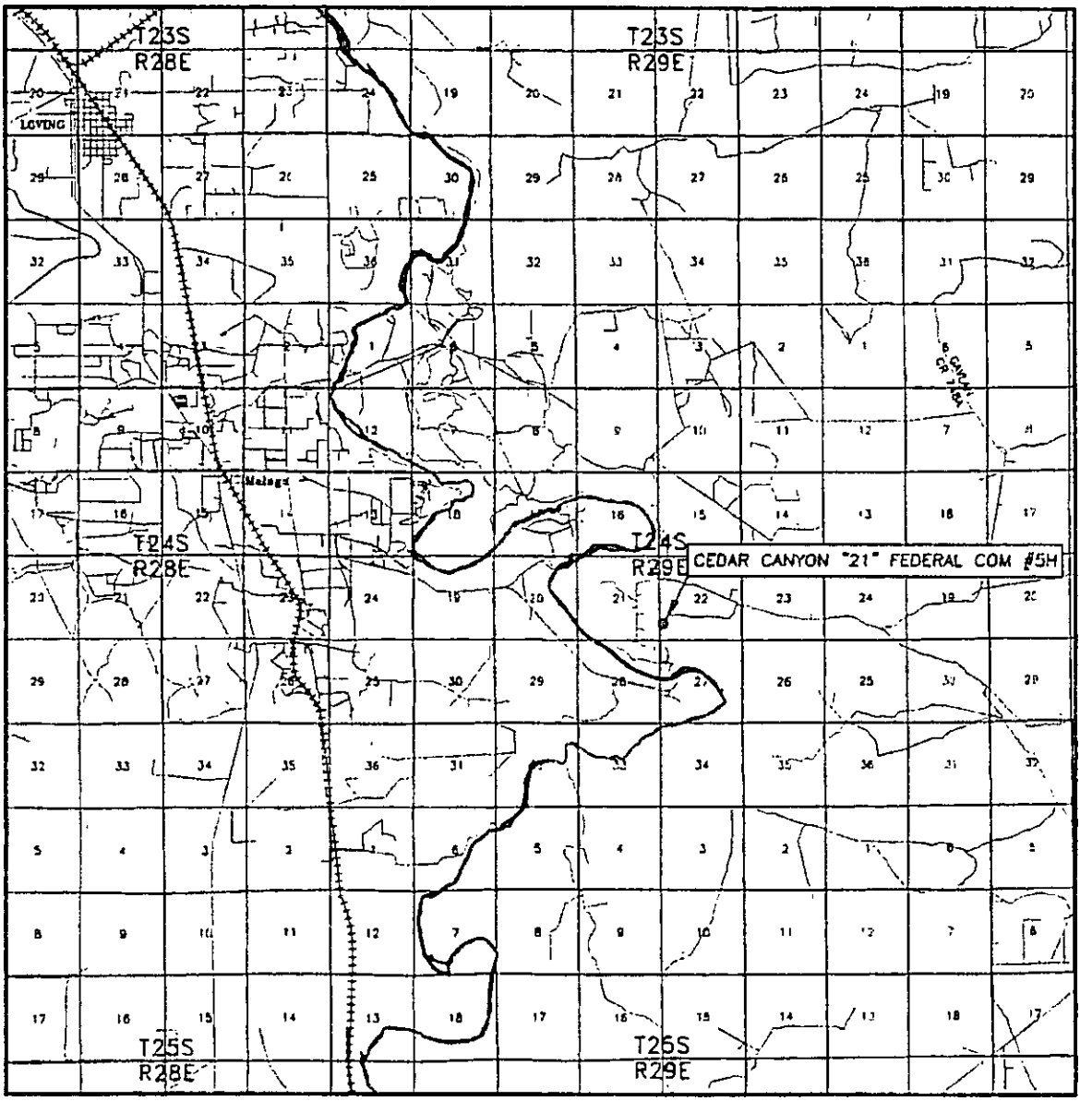
U.S.G.S. TOPOGRAPHIC MAP
PIERCE CANYON, N.M.

Asel Surveying

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

VM

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 22 TWP. 24-S RGE. 29-E
SURVEY N.M.P.M.
COUNTY EDDY
DESCRIPTION 1090' FSL & 207' FWL
ELEVATION 2940.4'
OPERATOR OXY USA INC.
LEASE CEDAR CANYON "21" FEDERAL COM #5H

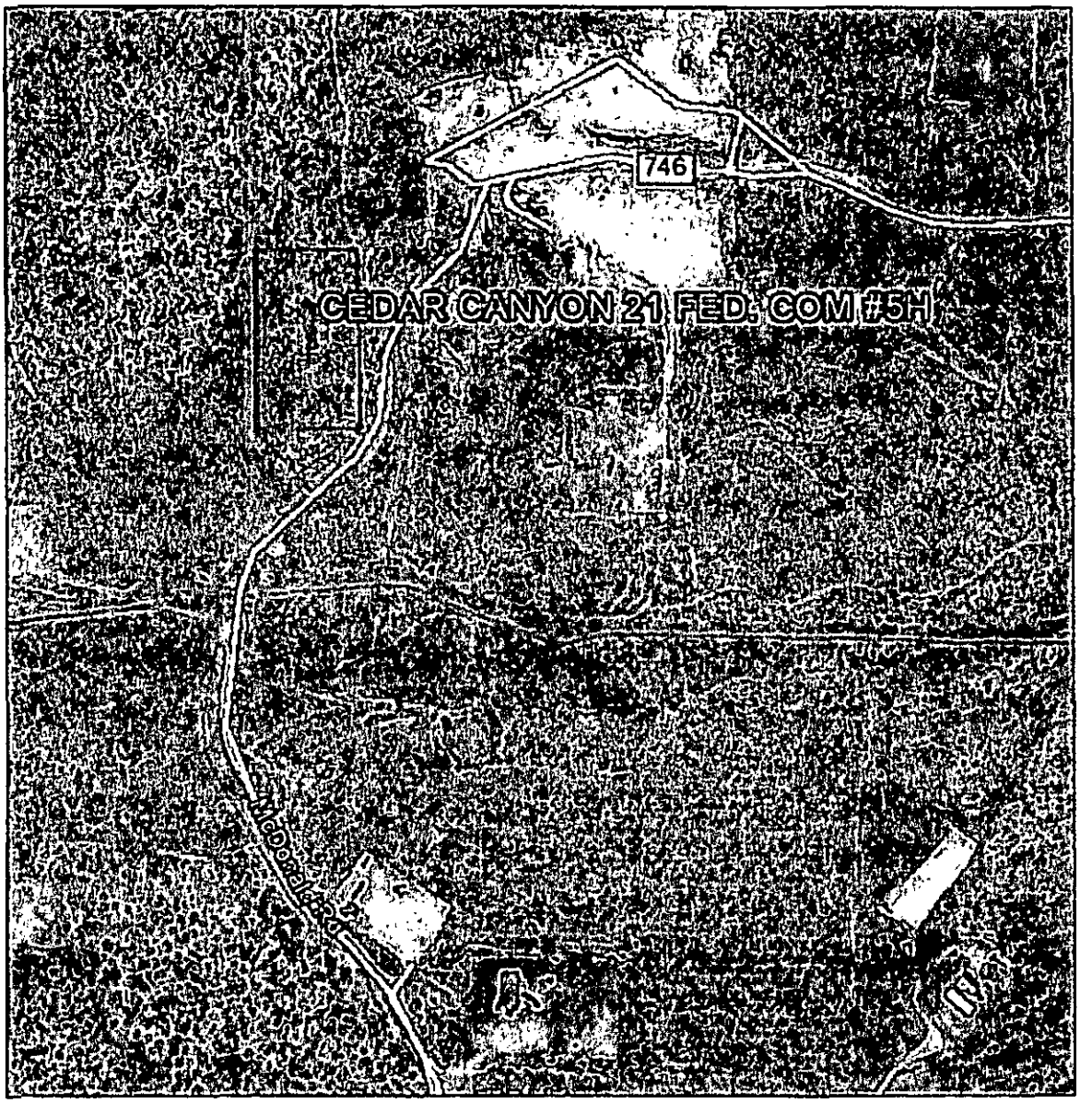
Asel Surveying

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

DIRECTIONS FROM THE INTERSECTION OF U.S. HWY. #285 AND BLACK RIVER VILLAGE ROAD IN MALAGA, GO EAST ON COUNTY ROAD #720 FOR 1.3 MILES, TURN RIGHT ON COUNTY ROAD #746 (MCDONALD ROAD) AND GO SOUTH FOR 0.8 MILES, CONTINUE SOUTHEAST/EAST FOR 4.8 MILES, CURVE TO THE LEFT FOR 0.4 MILES, TURN LEFT AND GO WEST FOR 0.1 MILES, TURN RIGHT AND GO NORTH FOR 0.5 MILES, TURN LEFT ON PROPOSED ROAD AND GO NORTHWEST FOR 209.2 FEET TO LOCATION.

AM

AERIAL MAP



SCALE: NOT TO SCALE

SEC. 22 TWP. 24-S RGE. 29-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 1090' FSL & 207' FWL

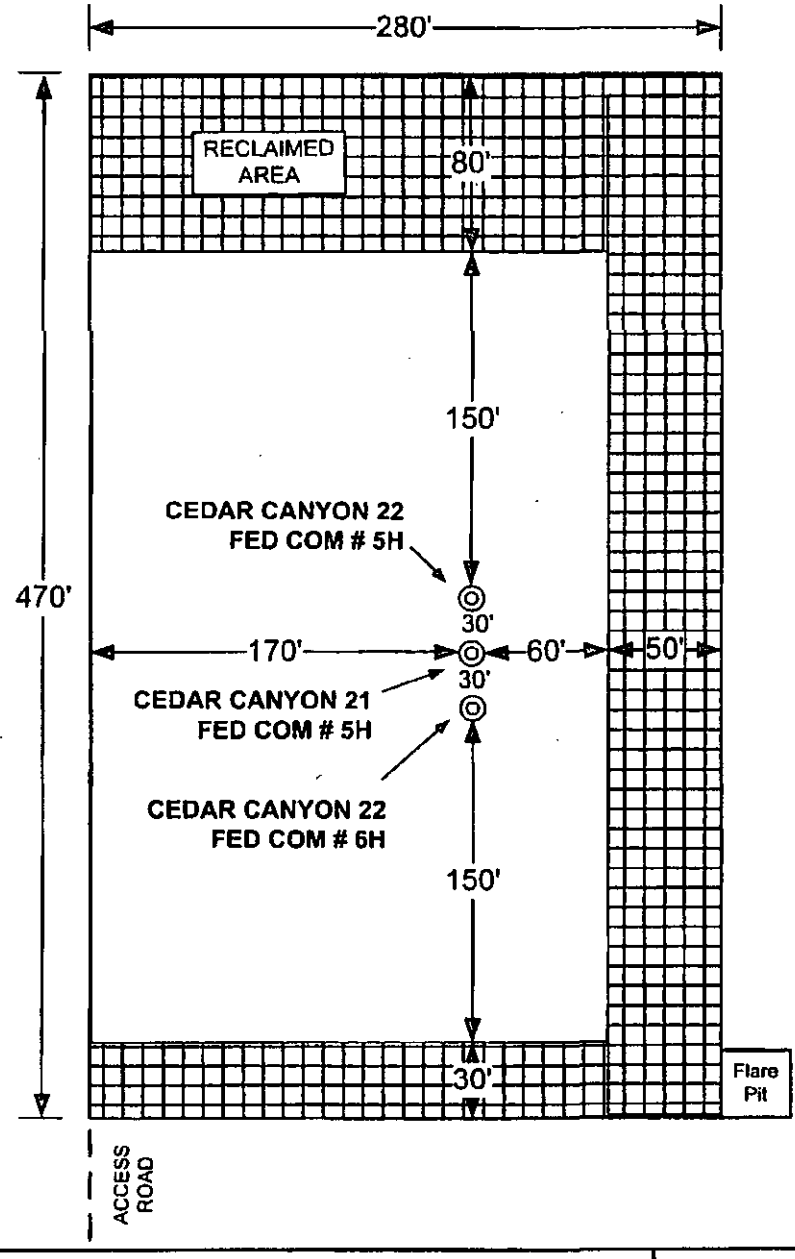
ELEVATION 2940.4'

OPERATOR OXY USA INC.

LEASE CEDAR CANYON "21" FEDERAL COM #5H

Asel Surveying

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



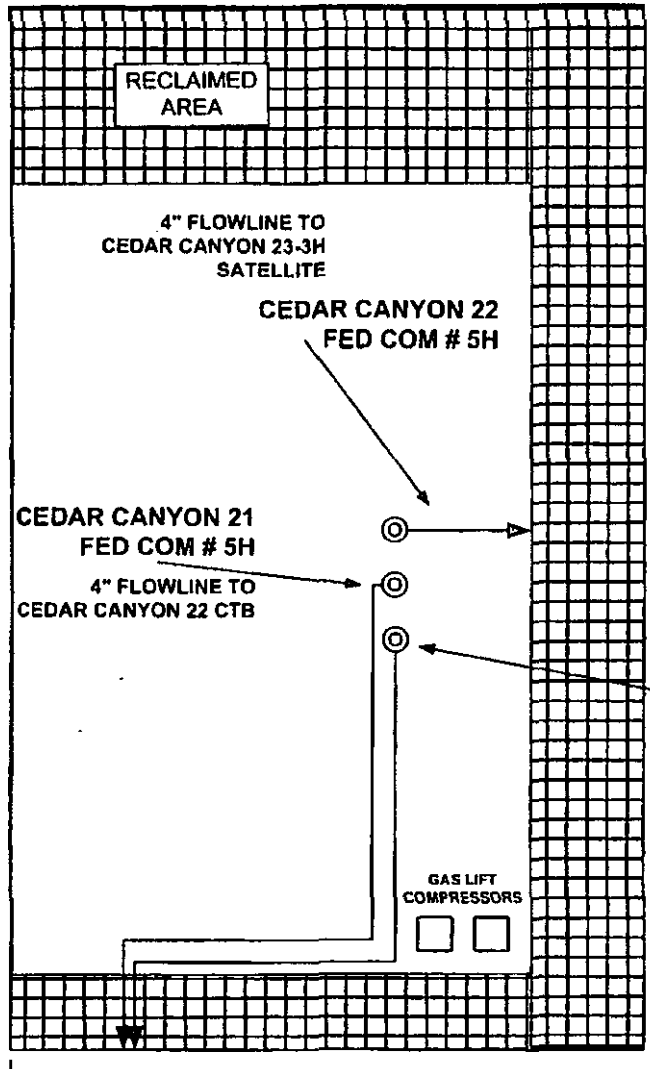
Wellsite Layout | Reclamation

V-Door - South

8' Diameter x 8' Deep Tinhorn Cellar

REVISION BLOCK						ENGINEERING RECORD	
NO.	DATE	DESCRIPTION	BY	CHK	APP	BY	DATE

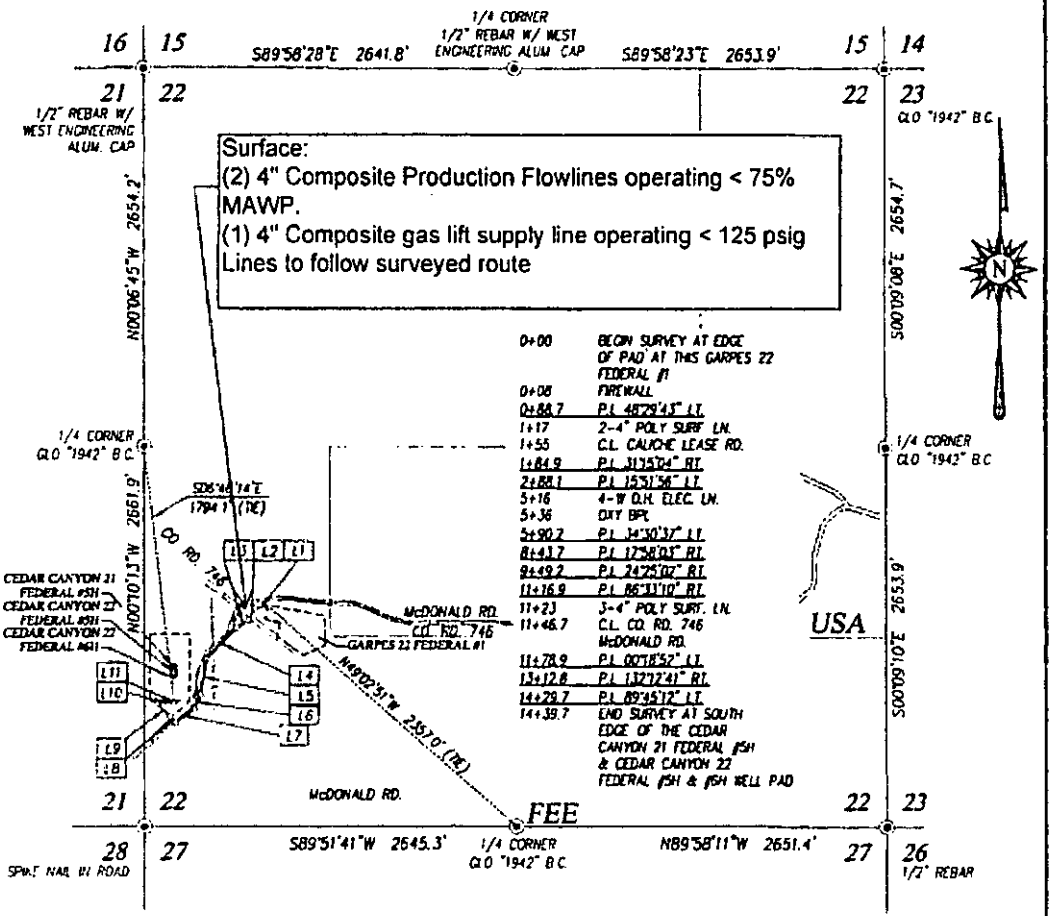
FLEX 3 RIG DIAGRAM
Cedar Canyon 22 Fed Com # 5H &6H
Cedar Canyon 21 Fed Com # 5H
EDDY COUNTY, NEW MEXICO



CC21F5H Facility Layout

REVISION BLOCK						ENGINEERING RECORD		FACILITIES LAYOUT DIAGRAM
NO.	DATE	DESCRIPTION	BY	CHK	APP	BY	DATE	~~Cedar Canyon 22 Fed Com # 5H & 6H~~
						KAO	2/24/16	Cedar Canyon 21 Fed Com # 5H
								EDDY COUNTY, NEW MEXICO

CC21FESH Pipeline Svy



DESCRIPTION

SURVEY FOR A PIPELINE CROSSING SECTION 22, TOWNSHIP 24 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE SOUTHWEST QUARTER LINE OF SECTION 22, WHICH LIES N49°02'51"W 2357.0 FEET FROM THE SOUTH QUARTER CORNER OF SAID SECTION; THEN S76°35'45"W 88.7 FEET; THEN S28°06'02"W 96.2 FEET; THEN S59°21'06"W 103.2 FEET, THEN S43°29'10"W 302.1 FEET; THEN S08°58'33"W 253.5 FEET; THEN S26°56'36"W 105.5 FEET; THEN S51°21'38"W 167.7 FEET; THEN N42°05'12"W 62.0 FEET; THEN N42°24'04"W 133.9 FEET; THEN N89°48'37"E 116.9 FEET; THEN N00°03'25"E 10.0 FEET TO A POINT, WHICH LIES S06°46'14"E 1794.1 FEET FROM THE WEST QUARTER CORNER OF SAID SECTION.

TOTAL LENGTH EQUALS 1439.7 FEET OR 87.25 RODS.

LINE	BEARING	DISTANCE
L1	S76°35'45"W	88.7'
L2	S28°06'02"W	96.2'
L3	S59°21'06"W	103.2'
L4	S43°29'10"W	302.1'
L5	S08°58'33"W	253.5'
L6	S26°56'36"W	105.5'
L7	S51°21'38"W	167.7'
L8	N42°05'12"W	62.0'
L9	N42°24'04"W	133.9'
L10	N89°48'37"E	116.9'
L11	N00°03'25"E	10.0'

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald J. Eidson

DATE: 02/08/2016

LEGEND

⊙ DENOTES FOUND CORNER AS NOTED

1000 0 1000 2000 FEET

Scale: 1"=1000'

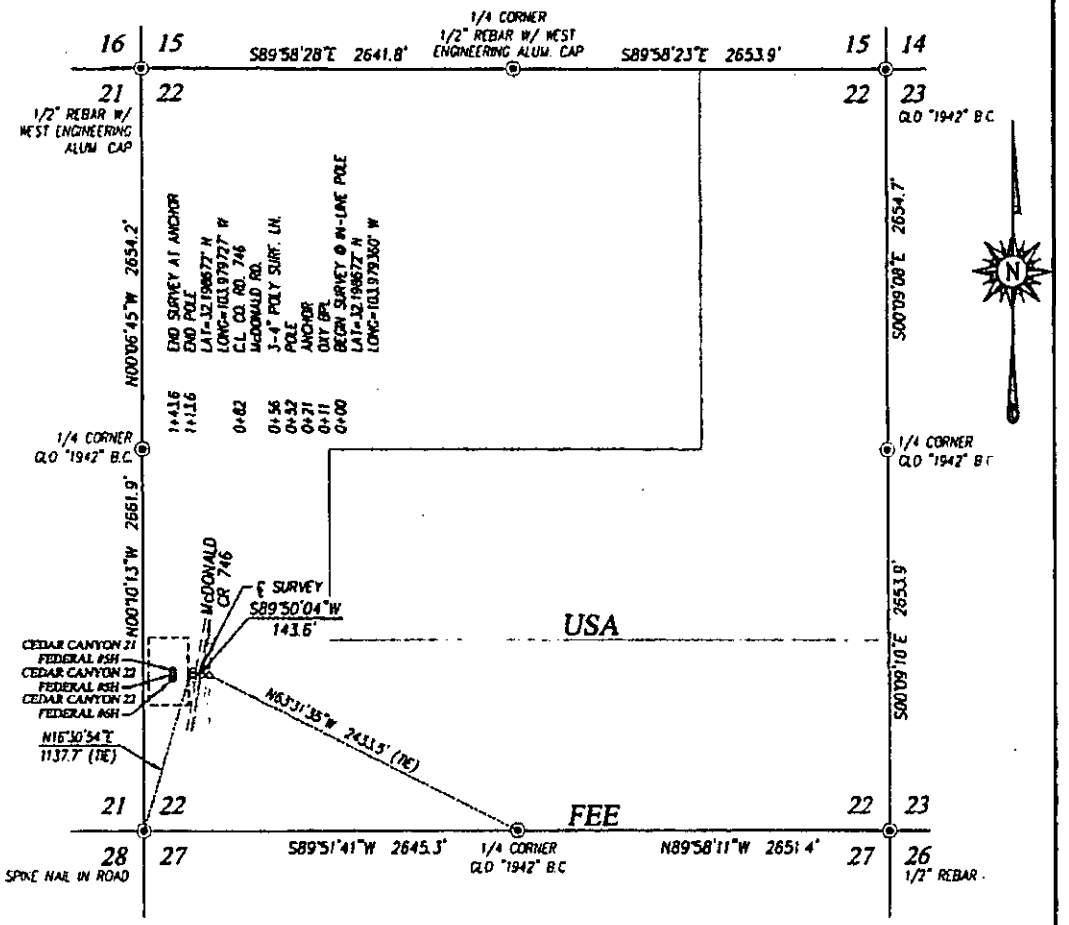
PROVIDING SURVEYING SERVICES SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10023000

OXY U.S.A. INC.

SURVEY FOR A PIPELINE TO THE CEDAR CANYON 21 FEDERAL #5H ~~& CEDAR CANYON 22 FEDERAL #5H & #6H~~ CROSSING SECTION 22, TOWNSHIP 24 SOUTH, RANGE 29 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

Survey Date: 1/28/16	CAD Date: 2/04/16	Drawn By: ACK
W.O. No.: 16110057	Rev.:	Rel. W.O.:	Sheet 1 of 1

Electric Line



DESCRIPTION

SURVEY FOR AN ELECTRIC LINE CROSSING SECTION 22, TOWNSHIP 24 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE SW/4, WHICH LIES N63°31'35"W 2433.5 FEET FROM THE SOUTH QUARTER CORNER; THEN S89°50'04"W 143.6 FEET TO A POINT, WHICH LIES N16°30'54"E 1137.7 FEET FROM THE SOUTHWEST CORNER.

TOTAL LENGTH EQUALS 143.6 FEET OR 8.70 RODS.

NOTE

1) BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

2) LATITUDE AND LONGITUDE VALUES SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN DATUM 1983 (NAD83).

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

1000 0 1000 2000 FEET

Scale: 1"=1000'

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald J. Eidson

DATE: 02/08/2016

PROFESSIONAL SURVEYOR

PROVIDING SURVEYING SERVICES SINCE 1946

JOHN WEST SURVEYING COMPANY

412 N. DAL PASO HOBBS, N.M. 88240

(575) 393-3117 www.jwsc.biz

TBPLS# 10021000

OXY U.S.A. INC.

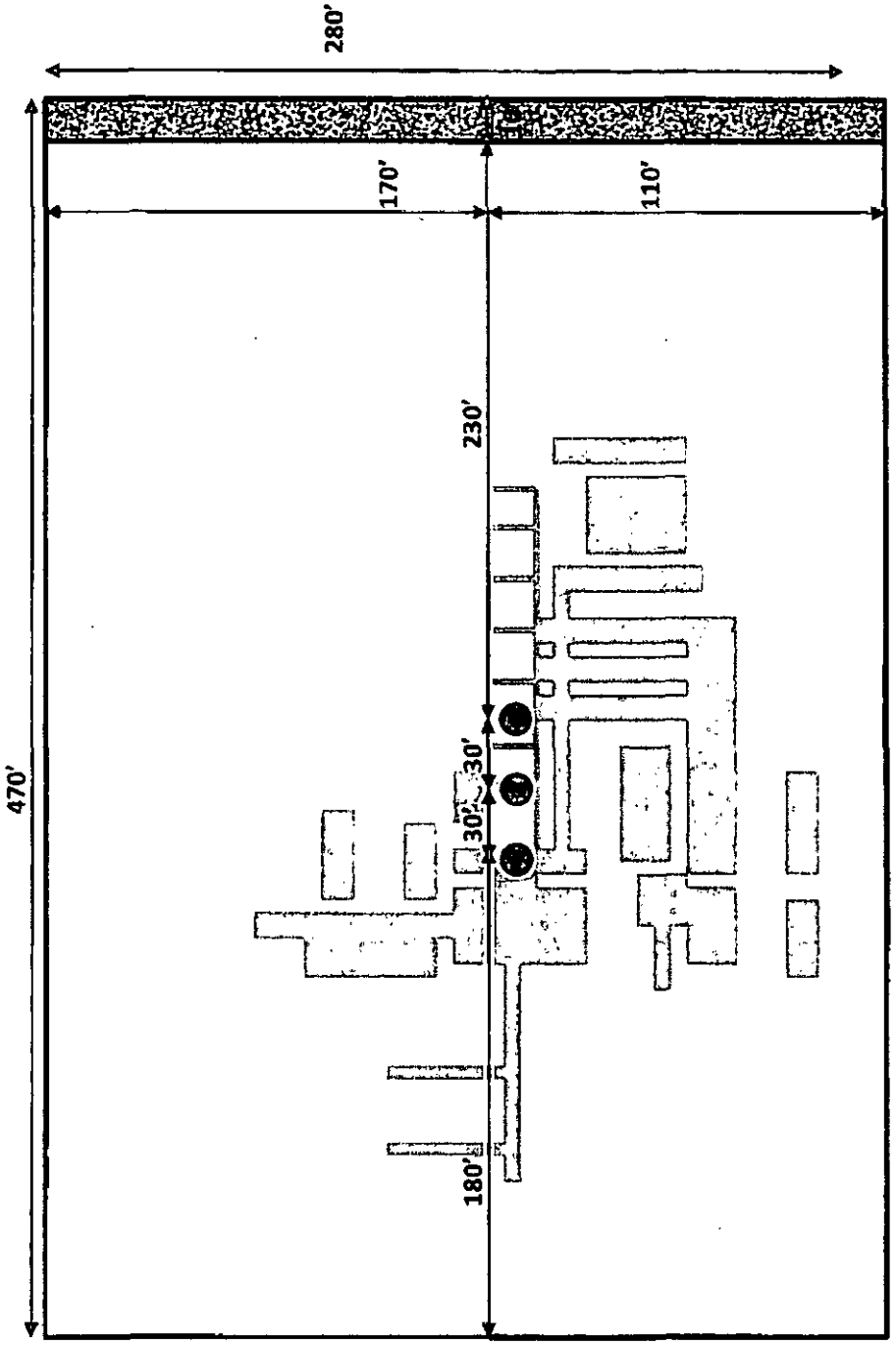
SURVEY FOR AN ELECTRIC LINE TO THE CEDAR CANYON 21 FEDERAL #5H & CEDAR CANYON 22 FEDERAL #5H & #6H CROSSING SECTION 22, TOWNSHIP 24 SOUTH, RANGE 29 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

Survey Date: 1/28/16	CAD Date: 2/03/16	Drawn By: ACK
W.O. No.: 16110056	Rev: .	Rel. W.O.:	Sheet 1 of 1

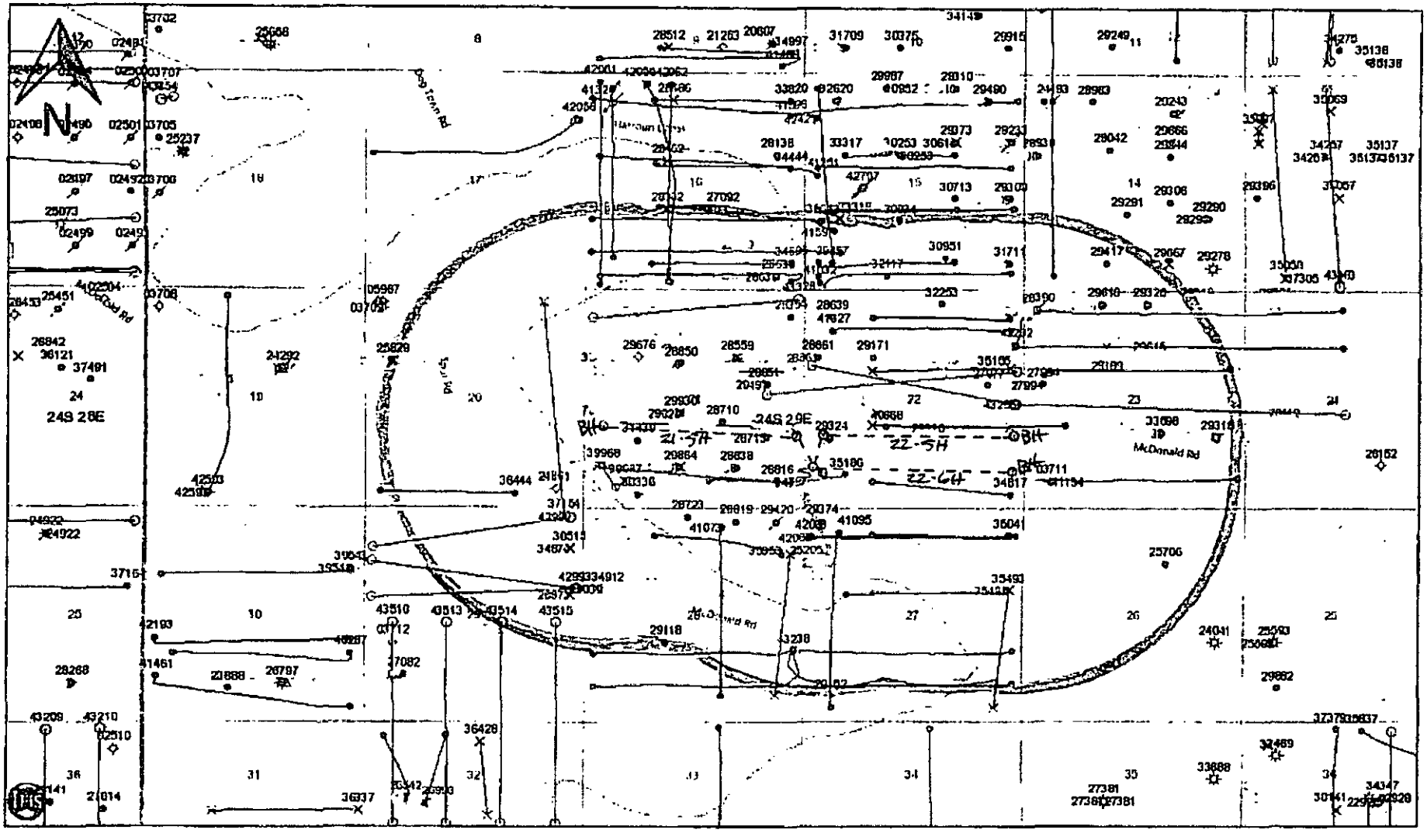
© M:\jobs\2016\OXY USA INC\EASEMENTS\16110065 Pipeline to the Cedar Canyon 21 Federal #5H & #6H, Sec22, T24S, R29E

Rig Layout

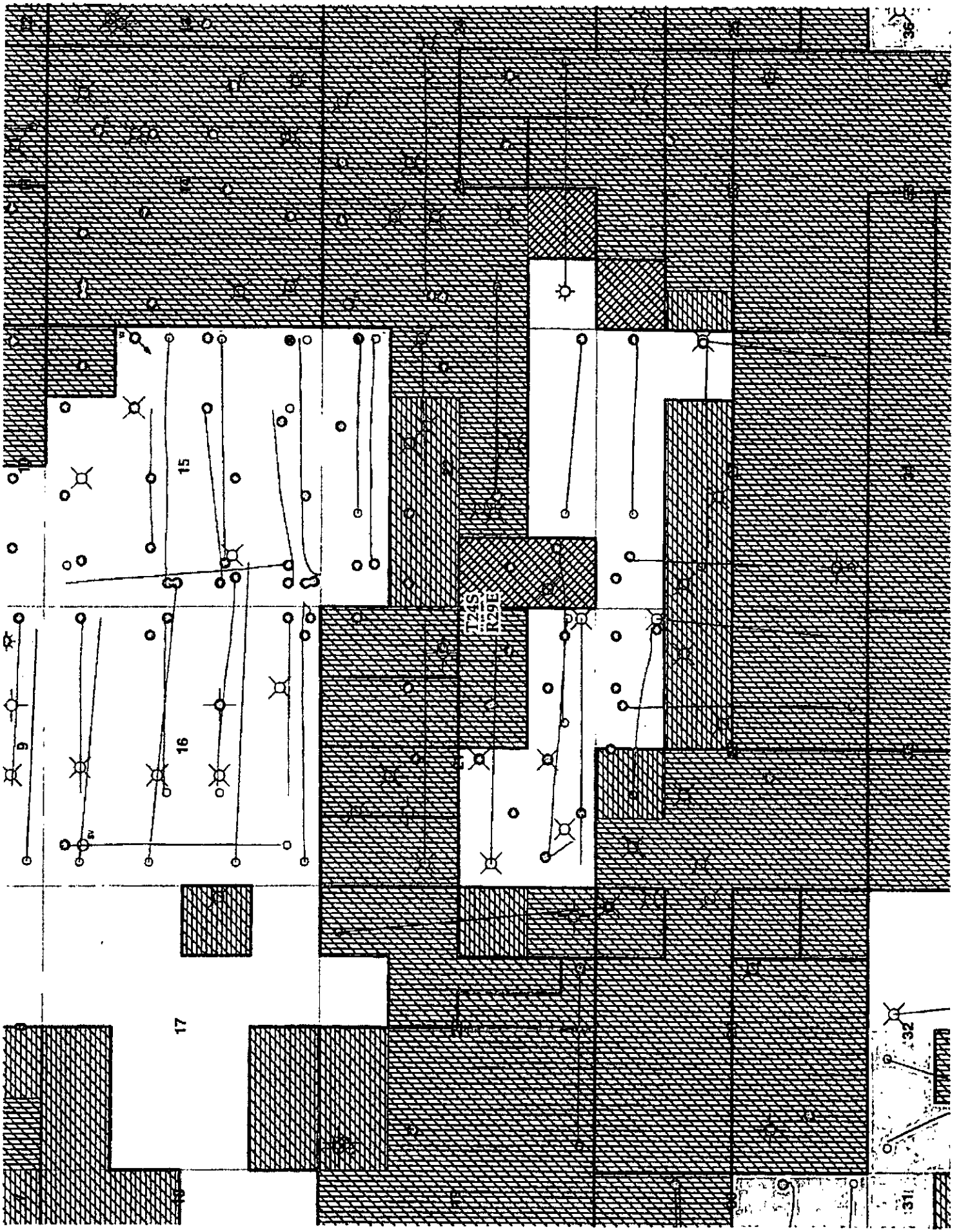
Pad Site Overall Rig Layout
3 Well Pad Site



Cedar Canyon 21/22 Federal - 1 Mile AOR



BLM 9 Section



OPERATOR NAME / NUMBER: OXY USA INC. 16696

LEASE NAME/NUMBER: Cedar Canyon 21 Federal Com #5H

STATE: NM **COUNTY:** Eddy

POOL NAME/NUMBER: Corral Draw Bone Spring 96238

PROJECTED TD: 13381'M / 8715'V **OBJECTIVE:** 2nd Bone Spring

SURFACE LOCATION: 1090 FSL 207 FWL SWSW (M) Sec 22 T24S R29E - Fee
SL: LAT: 32.1985487N LONG:103.9797240W X:609380.46 Y:436131.72 NAD: 27

TOP PERFORATION: 1694 FSL 340 FEL NESE (I) Sec 21 T24S R29E – NMNM86908
TP: LAT: 32.2002100N LONG:103.9814915W X:608831.74 Y:436734.23 NAD: 27

BOTTOM PERFORATION: 1970 FSL 340 FWL NWSW (L) Sec 21 T24S R29E - Fee
BP: LAT: 32.2009676N LONG:103.9964499W X:604203.93 Y:436995.02 NAD: 27

BOTTOM HOLE LOCATION: 1980 FSL 180 FWL NWSW (L) Sec 21 T24S R29E - Fee
BHL: LAT: 32.2009938N LONG:103.9969670W X:604043.94 Y:437004.04 NAD: 27

APPROX GR ELEV: 2940.4' **EST KB ELEV:** 2965.4' (25' KB-GL)

COMPANY PERSONNEL:

Name	Title	Office Phone	Mobile Phone
Richard Mercer	Drilling Engineer	(713)366-5174	(832) 523-6392
Diego Tellez	Drilling Engineering Team Lead	(713)350-4602	(713) 303-4932
Ryan Farrell	Drilling Engineer Supervisor	(713)366-5058	(832) 914-7443
Travis Samford	Drilling Superintendent	(713)522-8652	(281) 684-6897

SPACING UNITS:

There are currently no wells that are either permitted, drilled and/or completed in a Bone Spring pool.

1. Geologic Formations

TVD of target	8,715'	Pilot hole depth	N/A
MD at TD:	13,381'	Deepest expected fresh water:	355'

Delaware Basin

Formation	TVD - RKB	Expected Fluids
T. Rustler	355	--
T. Salt	767	--
T. Delaware / Lamar / B. Anhydrite	2,968	Oil/Gas
T. Bell Canyon*	3,020	Water/Oil/Gas
T. Brushy Canyon*	5,090	Oil/Gas
T. 1st BSPG	6,602	Oil/Gas
T. 2nd BSPG	7,912	Oil/Gas
Target 2nd BSPG	**8,715**	**Oil/Gas**
T. 3rd BSPG	8,817	Oil/Gas

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
14.75"	0	400	10.75"	40.5	J55	BTC	8.05	1.4	3.98
9.875"	0	8,100	7.625"	26.4	L80	BTC	2.82	1.25	2.01
6.75"	0	8,750	5.5"	17	P-110	Ultra SF	1.7	1.20	2.23
6.75"	8,750	13,381	4.5"	11.6	P-110	DQX	1.7	1.20	1.96
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h
*Oxy requests the option to set casing shallower yet still below the salts if losses or hole conditions require this. Cement volumes may be adjusted if casing is set shallower and a DV tool will be run in case a contingency second stage is required for cement to reach surface. If cement circulated to surface during first stage we will drop a cancelation cone and not pump the second stage.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	

PERFORMANCE DATA

TMK UP ULTRA™ SF **5.500 in** **17.00 lbs/ft** **P-110**
Technical Data Sheet

Tubular Parameters

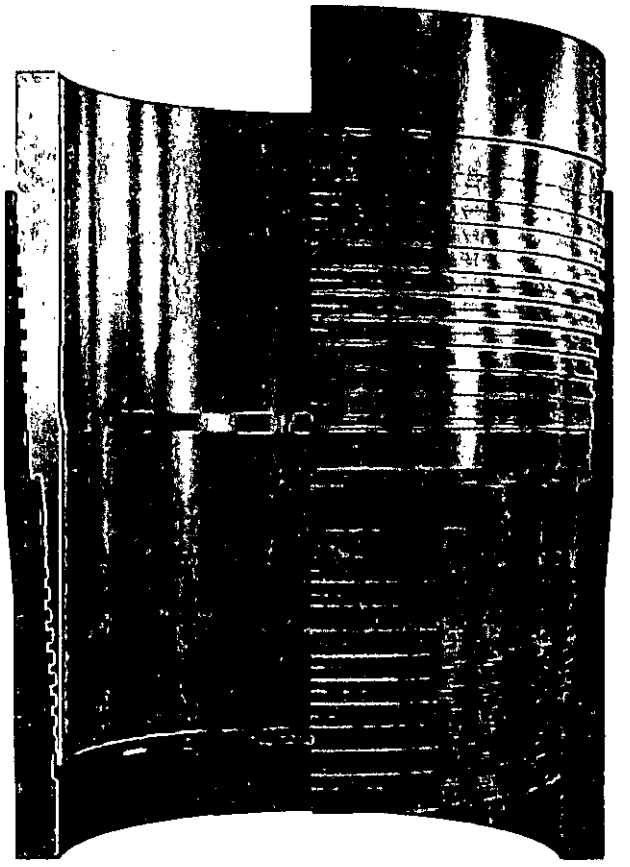
Size	5.500	in	Minimum Yield	110,000	psi
Nominal Weight	17.00	lbs/ft	Minimum Tensile	125,000	psi
Grade	P-110		Yield Load	545,000	lbs
PE Weight	16.87	lbs/ft	Tensile Load	620,000	lbs
Wall Thickness	0.304	in	Min. Internal Yield Pressure	10,600	psi
Nominal ID	4.892	in	Collapse Pressure	7,500	psi
Drift Diameter	4.767	in			
Nom. Pipe Body Area	4.962	in²			

Connection Parameters

Connection OD	5.663	in
Connection ID	4.848	in
Make-Up Loss	5.911	in
Critical Section Area	4.559	in²
Tension Efficiency	91.6	%
Compression Efficiency	91.6	%
Yield Load In Tension	499,000	lbs
Min. Internal Yield Pressure	10,600	psi
Collapse Pressure	7,500	psi
Uniaxial Bending	84	°/ 100 ft

Make-Up Torques

Min. Make-Up Torque	10,300	ft-lbs
Opt. Make-Up Torque	11,300	ft-lbs
Max. Make-Up Torque	12,400	ft-lbs
Yield Torque	15,500	ft-lbs



Printed on: May-20-2015

TMK IPSCO

PERFORMANCE DATA

TMK UP ULTRA™ DQX **4.500 in** **11.60 lbs/ft** **P-110**
Technical Data Sheet

Tubular Parameters

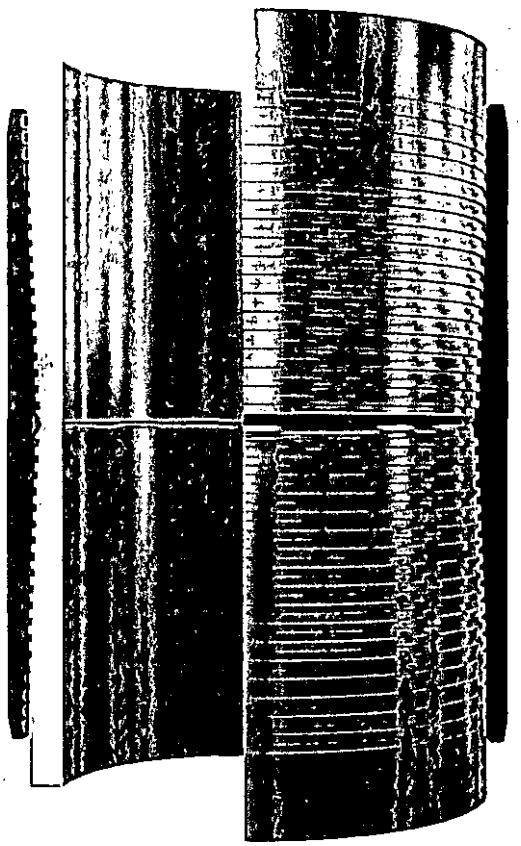
Size	4.500	in	Minimum Yield	110,000	psi
Nominal Weight	11.60	lbs/ft	Minimum Tensile	125,000	psi
Grade	P-110		Yield Load	367,000	lbs
PE Weight	11.35	lbs/ft	Tensile Load	417,000	lbs
Wall Thickness	0.250	in	Min. Internal Yield Pressure	10,700	psi
Nominal ID	4.000	in	Collapse Pressure	7,580	psi
Drift Diameter	3.875	in			
Nom. Pipe Body Area	3.338	in²			

Connection Parameters

Connection OD	5.000	in
Connection ID	4.000	in
Make-Up Loss	3.772	in
Critical Section Area	3.338	in²
Tension Efficiency	100.0	%
Compression Efficiency	100.0	%
Yield Load In Tension	367,000	lbs
Min. Internal Yield Pressure	10,700	psi
Collapse Pressure	7,580	psi
Uniaxial Bending	112	°/ 100 ft

Make-Up Torques

Min. Make-Up Torque	4,800	ft-lbs
Opt. Make-Up Torque	5,400	ft-lbs
Max. Make-Up Torque	5,900	ft-lbs
Yield Torque	8,600	ft-lbs



Printed on: July-24-2015

TMK IPSCO

Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H_20 gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	260	14.8	1.35	6.53	6:50	Premium Plus Cement 2% Calcium Chloride – Flake (Accelerator)
Inter.	910	10.3	3.05	15.63	15:07	TUNED LIGHT (TM) SYSTEM 0.80% HR-601(Retarder), 3 lbm/sk Kol-Seal (Lost Circulation Additive), 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)
	250	13.2	1.65	8.45	12:57	Super H Cement, 0.1 % HR-800 (Retarder), 0.5 % Halad(R)-344 (Low Fluid Loss Control), 0.3 % CFR-3 (Dispersant), 2 lbm Kol-Seal (Lost Circulation Additive), 3 lbm Salt (Accelerator)
	DV/ECP Tool @ 2,900' (We request the option to cancel the second stage if cement is circulated to surface during the first stage of cement operations)					
	450	12.9	1.85	9.86	12:44	Halliburton Light Premium Plus Cement with 5% Salt, 0.125 lbs/sk Poly-E-Flake (Lost Circulation, 5 lbs/sk Kol-Seal, 0.35% HR-800
	190	14.8	1.33	6.34	6:31	Premium Plus cement
Prod.	550	13.2	1.631	8.37	15:15	Super H Cement, 0.1 % HR-800, 0.5 % Halad(R)-344, 0.4 % CFR-3, 3 lbm Salt
	DV/ECP Tool N/A					
	N/A					
	N/A					

Casing String	TOC	% Excess (Lead/Tail)
Surface	0'	50%
Intermediate	0'	100% / 20%
Intermediate Contingency 2nd Stage	0'	75% / 125%
Production	7,100'	15%

Include Pilot Hole Cementing specs:
Pilot hole depth N/A
KOP N/A

Plug top	Plug Bottom	% Excess	No. Sacks	Wt. lb/gal	Yld ft3/sack	Water gal/sk	Slurry Description and Cement Type
N/A							
N/A							

4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
9.875" Intermediate	13-3/8"	5M	Annular	✓	70% of working pressure
			Blind Ram	✓	250/5000psi
			Pipe Ram		
			Double Ram	✓	
			Other*		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

X	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
X	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart. Y — Are anchors required by manufacturer?
X	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. See attached schematic.

See COA

	We are proposing that we will run the wellhead through the rotary prior to cementing surface casing as discussed with the BLM on October 8, 2015.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. shoe	FW Gel	8.4-8.8	28-38	N/C
Surf csg	2,950'	Saturated Brine	9.8-10	28-32	N/C
2,950'	Int shoe	EnerSeal (MMH)	8.8-9.6	38-50	N/C
Int shoe	TD	OBM	8.8-9.4	28-100	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Oxy proposes to drill out the 10-3/4" surface casing shoe with a saturated brine system from 400'-2,950', which is the base of the salt system. At this point we will swap fluid systems to a high viscosity mixed metal hydroxide system. We will drill with this system to the intermediate TD @ 8,100'.

What will be used to monitor the loss or gain of fluid?	PVT/MD Totco/Visual Monitoring

6. Logging and Testing Procedures

Logging, Coring and Testing.	
Yes	Will run GR from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
No	Logs are planned based on well control or offset log information.
No	Drill stem test? If yes, explain
No	Coring? If yes, explain

Additional logs planned		Interval
No	Resistivity	
No	Density	
No	CBL	
Yes	Mud log	Surface Shoe - TD
No	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	3984 psi
Abnormal Temperature	No

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.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

8. Other facets of operation

	Yes/No
Will the well be drilled with a walking/skidding operation? If yes, describe. • We plan to drill the three well pad in batch by section: all surface sections, intermediate sections and production sections. The wellhead will be secured with a night cap whenever the rig is not over the well.	Yes
Will more than one drilling rig be used for drilling operations? If yes, describe.	No

Attachments
_x__ Directional Plan
_x__ H2S Contingency Plan
_x__ Flex III Attachments

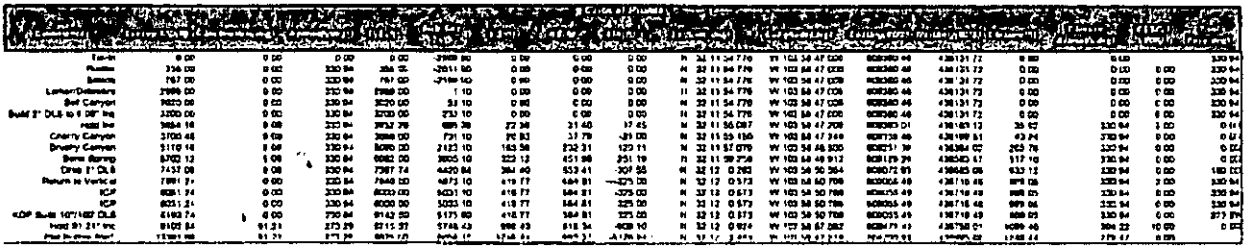
9. Company Personnel

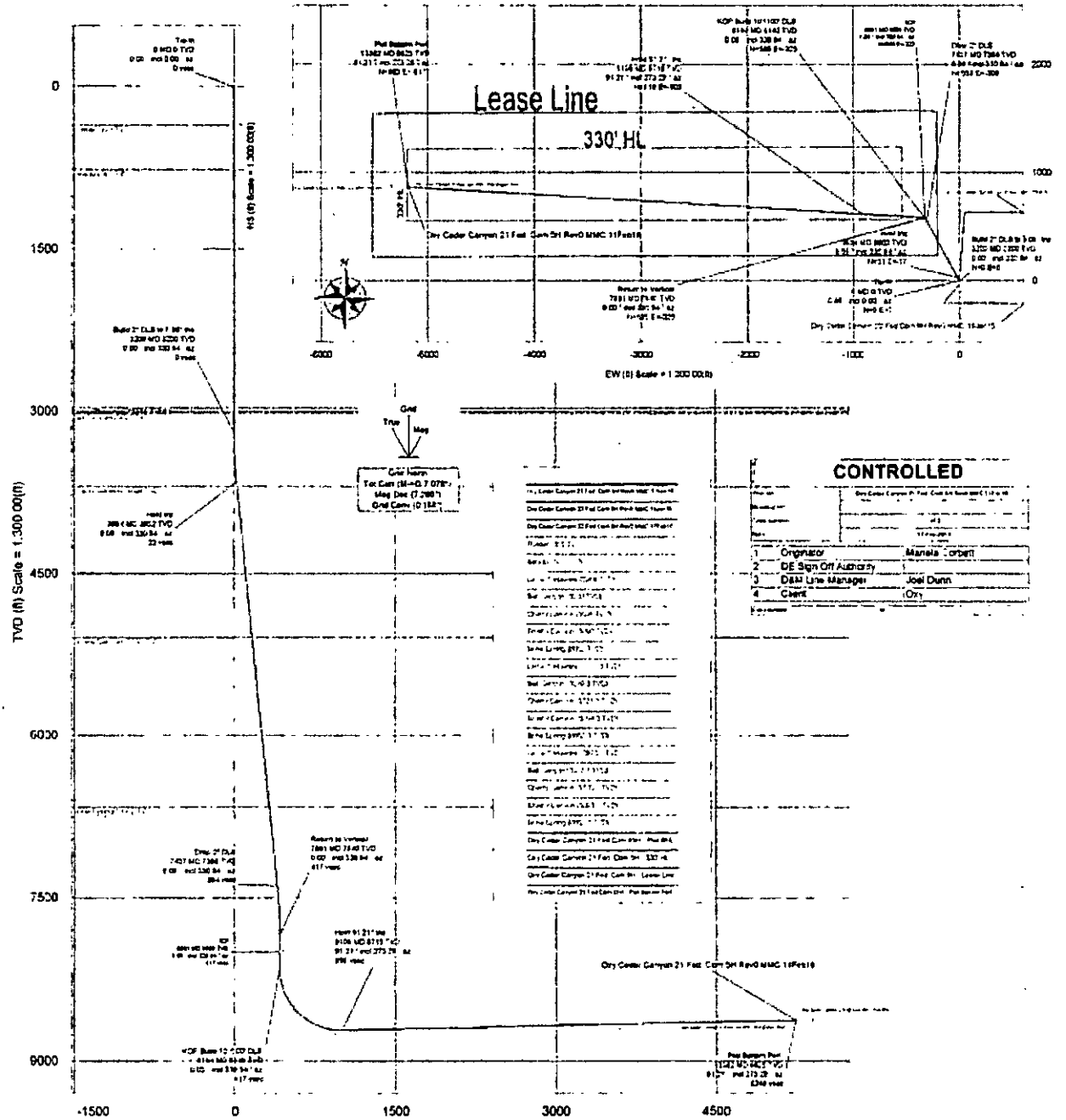
Name	Title	Office Phone	Mobile Phone
Richard Mercer	Drilling Engineer	(713)366-5174	(832) 523-6392
Diego Tellez	Drilling Engineering Team Lead	(713)350-4602	(713) 303-4932
Ryan Farrell	Drilling Engineer Supervisor	(713)366-5058	(832) 914-7443
Travis Samford	Drilling Superintendent	(713)522-8652	(281) 684-6897
Daniel Holderman	Drilling Manager	(713)497-2006	(832) 525-9029

DP-1

Plan - Rev0 **OXY** RKB 26.5ft **Schlumberger**

Borehole:	Well:	Field:	Structure:
Original Borehole	Cedar Canyon 21 Fed. Com 5H	NM Eddy County (NAD 27)	H&P 636





Vertical Section (ft) Azm = 279.468° Scale = 1:300.00(ft) Origin = 0N/-S, 0E/-W

DP-2

Schlumberger

Oxy Cedar Canyon 21 Fed. Com 5H Rev0 MMC 11Feb16 Proposal Geodetic Report

(Non-Def Plan)

Report Date:	February 17, 2016 - 01:46 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	279.466 ° (Grid North)
Field:	NM Eddy County (NAD 27)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Cedar Canyon 21 Fed. Com 5H / Oxy Cedar Canyon 21 Fed. Com 5H	**TVD Reference Datum:**	RKB
Well:	Cedar Canyon 21 Fed. Com 5H	**TVD Reference Elevation:**	2956.900 ft above MSL
Borehole:	Cedar Canyon 21 Fed. Com 5H - Original Borehole	**Seabed / Ground Elevation:**	2939.700 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	7.266 °
Survey Name:	Oxy Cedar Canyon 21 Fed. Com 5H Rev0 MMC 11Feb16	**Total Gravity Field Strength:**	998.467mgn (9.80665 Based)
Survey Date:	February 11, 2016	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	109.377 ° / 5526.877 ft / 5.968 / 0.634	**Total Magnetic Field Strength:**	48259.241 nT
Coordinate Reference System:	NAD27 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	60.047 °
Location Lat / Long:	N 32° 11' 54.77552", W 103° 58' 47.00630"	**Declination Date:**	February 11, 2016
Location Grid N/E Y/X:	N 436131.720 ftUS, E 609380.460 ftUS	**Magnetic Declination Model:**	HDGM 2015
CRS Grid Convergence Angle:	0.1884 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99992279	**Grid Convergence Used:**	0.1884 °
Version / Patch:	2.9.365.0	**Total Corr Mag North->Grid North:**	7.0773 °
		Local Coord Referenced To:	Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Tie-In	0.00	0.00	0.00	0.00	-2956.90	0.00	0.00	0.00	N/A	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
Build 2° DLS to 9.08° Inc	3200.00	0.00	330.94	3200.00	243.10	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
Hold Inc	3654.16	9.08	330.94	3652.26	695.36	22.38	31.40	-17.45	2.00	436163.12	609363.01	N 32 11 55.09	W 103 58 47.21
Drop 2° DLS	7457.08	9.08	330.94	7387.74	4430.84	394.40	553.41	-307.55	0.00	436685.08	609072.93	N 32 12 0.26	W 103 58 50.56
Return to Vertical	7891.24	0.00	330.94	7840.00	4883.10	416.77	584.81	-325.00	2.00	436716.48	609055.49	N 32 12 0.57	W 103 58 50.77
KOP	8051.24	0.00	330.94	8000.00	5043.10	416.77	584.81	-325.00	0.00	436716.48	609055.49	N 32 12 0.57	W 103 58 50.77
KOP Build 10°/100' DLS	8193.74	0.00	330.94	8142.50	5185.60	416.77	584.81	-325.00	0.00	436716.48	609055.49	N 32 12 0.57	W 103 58 50.77
Hold 91.21° Inc	9105.84	91.21	273.29	8715.33	5748.43	998.43	618.34	-909.10	10.00	436750.01	608471.43	N 32 12 0.92	W 103 58 57.56
Plat Bottom Perf.	13381.66	91.21	273.29	8625.00	5658.10	5246.44	663.37	-5176.94	0.00	436995.02	604203.93	N 32 12 3.48	W 103 59 47.22

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	27.200	1/100.000	30.000	30.000		SLB_MWD-STD_HDGM-Depth Only	Cedar Canyon 21 Fed. Com 5H - Original Borehole - Oxy Cedar Canyon 21 Fed. Com 5H Rev0
	1	27.200	13381.664	1/100.000	30.000	30.000		SLB_MWD-STD_HDGM	Cedar Canyon 21 Fed. Com 5H - Original Borehole - Oxy Cedar

DP-3

Schlumberger

Oxy Cedar Canyon 21 Fed. Com 5H Rev0 MMC 11Feb16 Proposal Geodetic Report

(Non-Def Plan)

Report Date	February 17, 2016 - 01:48 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	279.466 ° (Grid North)
Field:	NM Eddy County (NAD 27)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Cedar Canyon 21 Fed. Com 5H / Oxy Cedar Canyon 21 Fed. Com 5H	**TVD Reference Datum:**	RKB
Well:	Cedar Canyon 21 Fed. Com 5H	**TVD Reference Elevation:**	2966.900 ft above MSL
Borehole:	Cedar Canyon 21 Fed. Com 5H - Original Borehole	**Seabed / Ground Elevation:**	2939.700 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	7.256 °
Survey Name:	Oxy Cedar Canyon 21 Fed. Com 5H Rev0 MMC 11Feb16	**Total Gravity Field Strength:**	998.4670mgn (9.80665 Based)
Survey Date:	February 11, 2016	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	109.377 ° / 5528.977 ft / 5.968 / 0.634	**Total Magnetic Field Strength:**	48259.241 nT
Coordinate Reference System:	NAD27 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	60.047 °
Location Lat / Long:	N 32° 11' 54.77552", W 103° 58' 47.00630"	**Dec Ination Date:**	February 11, 2016
Location Grid N/E Y/X:	N 436131.720 ftUS, E 609380.460 ftUS	**Magnet ic Declination Model:**	HDGM 2015
CRS Grid Convergence Angle:	0.1884 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99992279	**Grid Convergence Used:**	0.1884 °
Version / Patch	2.9.365.0	**Total Corr Mag North->Grid North:**	7.0773 °
		Local Coord Referenced To:	Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (NAD 27)	Longitude (E/W ° ' ")
Tie-In	0.00	0.00	0.00	0.00	-2966.90	0.00	0.00	0.00	N/A	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	100.00	0.00	330.94	100.00	-2866.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	200.00	0.00	330.94	200.00	-2766.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	300.00	0.00	330.94	300.00	-2666.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
Rustler	*355.00*	*0.00*	*330.94*	*355.00*	*-2611.90*	*0.00*	*0.00*	*0.00*	*0.00*	*436131.72*	*609380.46*	*N 32 11 54.78*	*W 103 58 47.01*
	400.00	0.00	330.94	400.00	-2566.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	500.00	0.00	330.94	500.00	-2466.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	600.00	0.00	330.94	600.00	-2366.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	700.00	0.00	330.94	700.00	-2266.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
Salado	*767.00*	*0.00*	*330.94*	*767.00*	*-2199.90*	*0.00*	*0.00*	*0.00*	*0.00*	*436131.72*	*609380.46*	*N 32 11 54.78*	*W 103 58 47.01*
	800.00	0.00	330.94	800.00	-2166.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	900.00	0.00	330.94	900.00	-2066.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	1000.00	0.00	330.94	1000.00	-1966.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	1100.00	0.00	330.94	1100.00	-1866.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	1200.00	0.00	330.94	1200.00	-1766.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	1300.00	0.00	330.94	1300.00	-1666.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	1400.00	0.00	330.94	1400.00	-1566.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	1500.00	0.00	330.94	1500.00	-1466.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	1600.00	0.00	330.94	1600.00	-1366.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	1700.00	0.00	330.94	1700.00	-1266.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	1800.00	0.00	330.94	1800.00	-1166.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	1900.00	0.00	330.94	1900.00	-1066.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	2000.00	0.00	330.94	2000.00	-966.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	2100.00	0.00	330.94	2100.00	-866.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	2200.00	0.00	330.94	2200.00	-766.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	2300.00	0.00	330.94	2300.00	-666.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	2400.00	0.00	330.94	2400.00	-566.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	2500.00	0.00	330.94	2500.00	-466.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	2600.00	0.00	330.94	2600.00	-366.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	2700.00	0.00	330.94	2700.00	-266.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	2800.00	0.00	330.94	2800.00	-166.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	2900.00	0.00	330.94	2900.00	-66.90	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
Lamar/Delaware	*2966.00*	*0.00*	*330.94*	*2966.00*	*0.10*	*0.00*	*0.00*	*0.00*	*0.00*	*436131.72*	*609380.46*	*N 32 11 54.78*	*W 103 58 47.01*
	3000.00	0.00	330.94	3000.00	33.10	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
Bell Canyon	*3020.90*	*0.00*	*330.94*	*3020.00*	*53.10*	*0.00*	*0.00*	*0.00*	*0.00*	*436131.72*	*609380.46*	*N 32 11 54.78*	*W 103 58 47.01*
	3100.00	0.00	330.94	3100.00	133.10	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
Build 2° DLS to 9.08° Inc	3200.00	0.00	330.94	3200.00	233.10	0.00	0.00	0.00	0.00	436131.72	609380.46	N 32 11 54.78	W 103 58 47.01
	3300.00	2.00	330.94	3299.98	333.08	1.09	1.53	-0.85	2.00	436133.25	609379.61	N 32 11 54.79	W 103 58 47.02
	3400.00	4.00	330.94	3399.84	432.94	4.35	6.10	-3.39	2.00	436137.82	609377.07	N 32 11 54.84	W 103 58 47.05
	3500.00	6.00	330.94	3499.45	532.55	9.78	13.72	-7.62	2.00	436145.44	609372.84	N 32 11 54.91	W 103 58 47.09
	3600.00	8.00	330.94	3598.70	631.80	17.37	24.37	-13.54	2.00	436156.09	609366.92	N 32 11 55.02	W 103 58 47.18
Hold Inc	3654.16	9.08	330.94	3652.26	685.36	22.38	31.40	-17.45	2.00	436163.12	609363.01	N 32 11 55.09	W 103 58 47.23
	3700.00	9.08	330.94	3697.53	730.63	26.89	37.73	20.97	0.00	436169.44	609359.50	N 32 11 55.15	W 103 58 47.25
Cherry Canyon	*3709.48*	*9.08*	*330.94*	*3706.90*	*739.10*	*28.83*	*37.79*	*-21.00*	*0.00*	*436169.51*	*609359.46*	*N 32 11 55.15*	*W 103 58 47.25*
	3800.00	9.08	330.94	3796.27	829.37	36.72	51.53	-28.63	0.00	436183.24	609351.83	N 32 11 55.29	W 103 58 47.34
	3900.00	9.08	330.94	3895.02	928.12	46.55	65.32	-36.30	0.00	436197.04	609344.16	N 32 11 55.42	W 103 58 47.43
	4000.00	9.08	330.94	3993.76	1026.86	56.39	79.12	-43.97	0.00	436210.84	609336.49	N 32 11 55.56	W 103 58 47.51
	4100.00	9.08	330.94	4092.51	1125.61	66.22	92.92	-51.64	0.00	436224.63	609328.82	N 32 11 55.70	W 103 58 47.60
	4200.00	9.08	330.94	4191.26	1224.36	76.06	106.72	-59.31	0.00	436238.43	609321.15	N 32 11 55.83	W 103 58 47.69
	4300.00	9.08	330.94	4290.00	1323.10	85.89	120.52	-66.98	0.00	436252.23	609313.49	N 32 11 55.97	W 103 58 47.78
	4400.00	9.08	330.94	4388.75	1421.85	95.73	134.32	-74.65	0.00	436266.03	609305.82	N 32 11 56.11	W 103 58 47.87
	4500.00	9.08	330.94	4487.49	1520.59	105.56	148.12	-82.32	0.00	436279.83	609298.15	N 32 11 56.24	W 103 58 47.96
	4600.00	9.08	330.94	4586.24	1619.34	115.39	161.92	-89.98	0.00	436293.62	609290.48	N 32 11 56.38	W 103 58 48.05
	4700.00	9.08	330.94	4684.99	1718.09	125.23	175.72	-97.65	0.00	436307.42	609282.82	N 32 11 56.52	W 103 58 48.14
	4800.00	9.08	330.94	4783.73	1816.83	135.06	189.52	-105.32	0.00	436321.22	609275.15	N 32 11 56.65	W 103 58 48.22
	4900.00	9.08	330.94	4882.48	1915.58	144.90	203.31	-112.99	0.00	436335.02	609267.48	N 32 11 56.79	W 103 58 48.31
	5000.00	9.08	330.94	4981.22	2014.32	154.73	217.11	-120.66	0.00	436348.82	609259.81	N 32 11 56.93	W 103 58 48.40
	5100.00	9.08	330.94	5079.97	2113.07	164.56	230.91	-128.33	0.00	436362.61	609252.14	N 32 11 57.06	W 103 58 48.49
Brushy Canyon	*5110.16*	*9.08*	*330.94*	*5090.00*	*2123.10*	*165.56*	*232.31*	*-129.11*	*0.00*	*436364.02*	*609251.36*	*N 32 11 57.08*	*W 103 58 48.50*
	5200.00	9.08	330.94	5178.72	2211.82	174.40	244.71	-136.00	0.00	436376.41	609244.48	N 32 11 57.20	W 103 58 48.58
	5300.00	9.08	330.94	5277.46	2310.56	184.23	258.51	-143.66	0.00	436390.21	609236.81	N 32 11 57.34	W 103 58 48.67
	5400.00	9.08	330.94	5376.21	2409.31	194.07	272.31	-151.33	0.00	436404.01	609229.14	N 32 11 57.48	W 103 58 48.76
	5500.00	9.08	330.94	5474.95	2508.05	203.90	286.11	-159.00	0.00	436417.81	609221.47	N 32 11 57.61	W 103 58 48.85
	5600.00	9.08	330.94	5573.70	2606.80	213.73	299.91	-166.67	0.00	436431.60	609213.80	N 32 11 57.75	W 103 58 48.93
	5700.00	9.08	330.94	5672.45	2705.55	223.57	313.71	-174.34	0.00	436445.40	609206.13	N 32 11 57.89	W 103 58 49.02
	5800.00	9.08	330.94	5771.19	2804.29	233.40	327.51	-182.01	0.00	436459.20	609198.47	N 32 11 58.02	W 103 58 49.11
	5900.00	9.08	330.94	5869.94	2903.04	243.24	341.30	-189.68	0.00	436473.00	609190.80	N 32 11 58.16	W 103 58 49.20
	6000.00	9.08	330.94	5968.68	3001.78	253.07	355.10	-197.34	0.00	436486.80	609183.13	N 32 11 58.30	W 103 58 49.29
	6100.00	9.08	330.94	6067.43	3100.53	262.91	368.90	-205.01	0.00	436500.59	609175.46	N 32 11 58.43	W 103 58 49.38
	6200.00	9.08	330.94	6166.18	3199.28	272.74	382.70	-212.68	0.00	436514.39	609167.79	N 32 11 58.57	W 103 58 49.47
	6300.00	9.08	330.94	6264.92	3298.02	282.57	396.50	-220.35	0.00	436528.19	609160.13	N 32 11 58.71	W 103 58 49.56
	6400.00	9.08	330.94	6363.67	3396.77	292.41	410.30	-228.02	0.00	436541.99	609152.46	N 32 11 58.84	W 103 58 49.64
	6500.00	9.08	330.94	6462.41	3495.51	302.24	424.10	-235.69	0.00	436555.78	609144.79	N 32 11 58.98	W 103 58 49.73

DP-4

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	6600 00	9 09	330 94	6581 16	3594 26	312 08	437 90	-243 36	0 00	438569 58	609137 12	N 32 11 59 12	W 103 58 49 82
	6700 00	9 08	330 94	6659 91	3683 01	321 91	451 70	-251 03	0 00	438583 38	609129 45	N 32 11 59 25	W 103 58 49 91
Bone Spring	*6782 12*	*9 08*	*330 94*	*6662 00*	*3685 10*	*322 12*	*451 99*	*-251 19*	*0 00*	*438583 67*	*609129 29*	*N 32 11 59 26*	*W 103 58 49 91*
	6800 00	9 09	330 94	6758 65	3781 75	331 74	465 50	-258 69	0 00	438597 18	609121 79	N 32 11 59 39	W 103 58 50 00
	6900 00	9 08	330 94	6857 40	3880 50	341 58	479 29	-266 36	0 00	438610 98	609114 12	N 32 11 59 53	W 103 58 50 09
	7000 00	9 08	330 94	6956 14	3979 24	351 41	493 09	-274 03	0 00	438624 77	609106 45	N 32 11 60 06	W 103 58 50 18
	7100 00	9 08	330 94	7054 89	4077 99	361 25	506 89	-281 70	0 00	438638 57	609098 78	N 32 11 59 80	W 103 58 50 27
	7200 00	9 08	330 94	7153 64	4176 74	371 08	520 69	-289 37	0 00	438652 37	609091 11	N 32 11 59 94	W 103 58 50 35
	7300 00	9 08	330 94	7252 39	4275 49	380 91	534 49	-297 04	0 00	438666 17	609083 45	N 32 12 0 07	W 103 58 50 44
	7400 00	9 08	330 94	7351 13	4374 23	390 75	548 29	-304 71	0 00	438679 97	609075 78	N 32 12 0 21	W 103 58 50 53
Drop 2° DLS	7437 08	9 08	330 94	7387 74	4410 84	394 40	553 41	-307 55	0 00	438685 09	609072 93	N 32 12 0 26	W 103 58 50 58
	7500 00	7 82	330 94	7449 98	4473 08	400 16	561 49	-312 04	2 00	438693 17	609068 44	N 32 12 0 34	W 103 58 50 62
	7600 00	5 82	330 94	7549 27	4572 37	407 56	571 68	-317 82	2 00	438703 35	609062 67	N 32 12 0 44	W 103 58 50 68
	7700 00	3 82	330 94	7648 91	4672 01	412 80	579 23	-321 90	2 00	438710 90	609058 58	N 32 12 0 52	W 103 58 50 73
	7800 00	1 82	330 94	7748 78	4771 88	416 67	583 54	-324 29	2 00	438715 21	609056 19	N 32 12 0 56	W 103 58 50 76
Return to Vertical	7891 24	0 00	330 94	7840 00	4863 10	416 77	584 81	-325 00	2 00	438716 48	609055 49	N 32 12 0 57	W 103 58 50 77
	7900 00	0 00	330 94	7848 76	4871 86	416 77	584 81	-325 00	0 00	438716 48	609055 49	N 32 12 0 57	W 103 58 50 77
	8000 00	0 00	330 94	7948 76	4971 86	416 77	584 81	-325 00	0 00	438716 48	609055 49	N 32 12 0 57	W 103 58 50 77
KOP	8051 24	0 00	330 94	8000 00	5023 10	416 77	584 81	-325 00	0 00	438716 48	609055 49	N 32 12 0 57	W 103 58 50 77
	8100 00	0 00	330 94	8048 76	5071 86	416 77	584 81	-325 00	0 00	438716 48	609055 49	N 32 12 0 57	W 103 58 50 77
KOP Build 10°/100' DLS	8183 74	0 00	330 94	8142 50	5175 60	416 77	584 81	-325 00	0 00	438716 48	609055 49	N 32 12 0 57	W 103 58 50 77
	8200 00	0 63	273 29	8148 76	5181 86	416 81	584 81	-325 03	10 00	438716 48	609055 45	N 32 12 0 57	W 103 58 50 77
	8300 00	10 63	273 29	8248 16	5281 26	426 54	585 37	-334 81	10 00	438717 04	609045 68	N 32 12 0 58	W 103 58 50 68
	8400 00	20 63	273 29	8344 34	5377 44	453 29	589 91	-361 67	10 00	438719 58	609018 82	N 32 12 0 60	W 103 58 51 19
	8500 00	30 63	273 29	8434 39	5467 49	496 23	595 39	-404 79	10 00	438721 06	608975 70	N 32 12 0 62	W 103 58 51 69
	8600 00	40 63	273 29	8515 57	5548 67	554 07	602 72	-462 87	10 00	438724 39	608917 62	N 32 12 0 66	W 103 58 52 37
	8700 00	50 63	273 29	8585 41	5618 51	625 04	596 81	-534 14	10 00	438728 49	608846 38	N 32 12 0 70	W 103 58 53 20
	8800 00	60 63	273 29	8641 80	5674 90	707 00	601 54	-616 44	10 00	438733 21	608764 07	N 32 12 0 75	W 103 58 54 16
	8900 00	70 63	273 29	8683 01	5716 11	797 44	606 75	-707 26	10 00	438738 42	608673 25	N 32 12 0 80	W 103 58 55 21
	9000 00	80 63	273 29	8707 81	5740 91	893 62	612 30	-803 85	10 00	438743 97	608576 67	N 32 12 0 86	W 103 58 56 34
	9100 00	90 63	273 29	8715 42	5748 52	992 63	618 01	-903 27	10 00	438749 68	608477 26	N 32 12 0 92	W 103 58 57 49
Hold 91.21° Inc	9105 84	91 21	273 29	8715 33	5748 43	998 43	618 34	-909 10	10 00	438750 01	608471 43	N 32 12 0 92	W 103 58 57 56
	9200 00	91 21	273 29	8713 34	5746 44	1092 02	623 74	-1003 08	0 00	438755 41	608377 46	N 32 12 0 98	W 103 58 58 66
	9300 00	91 21	273 29	8711 23	5744 33	1191 42	629 47	-1102 90	0 00	438761 14	608277 85	N 32 12 1 04	W 103 58 59 82
	9400 00	91 21	273 29	8709 12	5742 22	1290 82	635 20	-1202 71	0 00	438766 87	608177 85	N 32 12 1 10	W 103 59 0 98
	9500 00	91 21	273 29	8707 00	5740 10	1390 21	640 93	-1302 52	0 00	438772 60	608078 04	N 32 12 1 16	W 103 59 2 14
	9600 00	91 21	273 29	8704 89	5737 99	1489 61	646 66	-1402 34	0 00	438778 33	607978 23	N 32 12 1 22	W 103 59 3 30
	9700 00	91 21	273 29	8702 78	5735 88	1589 00	652 39	-1502 15	0 00	438784 06	607878 43	N 32 12 1 28	W 103 59 4 46
	9800 00	91 21	273 29	8700 67	5733 77	1688 40	658 12	-1601 96	0 00	438789 79	607778 62	N 32 12 1 34	W 103 59 5 62
	9900 00	91 21	273 29	8698 55	5731 65	1787 80	663 85	-1701 78	0 00	438795 52	607678 82	N 32 12 1 40	W 103 59 6 79
	10000 00	91 21	273 29	8696 44	5729 54	1887 19	669 58	-1801 59	0 00	438801 25	607579 01	N 32 12 1 46	W 103 59 7 95
	10100 00	91 21	273 29	8694 33	5727 43	1986 59	675 31	-1901 40	0 00	438808 98	607479 21	N 32 12 1 52	W 103 59 9 11
	10200 00	91 21	273 29	8692 22	5725 32	2085 99	681 04	-2001 22	0 00	438812 71	607379 40	N 32 12 1 58	W 103 59 10 27
	10300 00	91 21	273 29	8690 10	5723 20	2185 38	686 77	-2101 03	0 00	438818 44	607279 60	N 32 12 1 64	W 103 59 11 43
	10400 00	91 21	273 29	8687 99	5721 09	2284 78	692 50	-2200 84	0 00	438824 17	607179 79	N 32 12 1 70	W 103 59 12 59
	10500 00	91 21	273 29	8685 88	5718 98	2384 17	698 23	-2300 66	0 00	438829 90	607079 99	N 32 12 1 76	W 103 59 13 75
	10600 00	91 21	273 29	8683 76	5716 86	2483 57	703 96	-2400 47	0 00	438835 63	606980 18	N 32 12 1 82	W 103 59 14 91
	10700 00	91 21	273 29	8681 65	5714 75	2582 97	709 69	-2500 28	0 00	438841 36	606880 38	N 32 12 1 88	W 103 59 16 08
	10800 00	91 21	273 29	8679 54	5712 64	2682 36	715 43	-2600 10	0 00	438847 09	606780 57	N 32 12 1 94	W 103 59 17 24
	10900 00	91 21	273 29	8677 43	5710 53	2781 76	721 16	-2699 91	0 00	438852 82	606680 76	N 32 12 2 00	W 103 59 18 40
	11000 00	91 21	273 29	8675 31	5708 41	2881 15	726 89	-2799 72	0 00	438858 55	606580 96	N 32 12 2 06	W 103 59 19 56
	11100 00	91 21	273 29	8673 20	5706 30	2980 55	732 62	-2899 54	0 00	438864 28	606481 15	N 32 12 2 12	W 103 59 20 72
	11200 00	91 21	273 29	8671 09	5704 19	3079 95	738 35	-2999 35	0 00	438870 01	606381 35	N 32 12 2 18	W 103 59 21 88
	11300 00	91 21	273 29	8668 98	5702 08	3179 34	744 08	-3099 16	0 00	438875 74	606281 54	N 32 12 2 24	W 103 59 23 04
	11400 00	91 21	273 29	8666 86	5699 98	3278 74	749 81	-3198 98	0 00	438881 47	606181 74	N 32 12 2 30	W 103 59 24 21
	11500 00	91 21	273 29	8664 75	5697 85	3378 14	755 54	-3298 79	0 00	438887 20	606081 93	N 32 12 2 36	W 103 59 25 37
	11600 00	91 21	273 29	8662 64	5695 74	3477 53	761 27	-3398 60	0 00	438892 93	605982 13	N 32 12 2 42	W 103 59 26 53
	11700 00	91 21	273 29	8660 53	5693 63	3576 93	767 00	-3498 42	0 00	438898 66	605882 32	N 32 12 2 48	W 103 59 27 69
	11800 00	91 21	273 29	8658 41	5691 51	3676 32	772 73	-3598 23	0 00	438904 39	605782 52	N 32 12 2 54	W 103 59 28 85
	11900 00	91 21	273 29	8656 30	5689 40	3775 72	778 46	-3698 04	0 00	438910 12	605682 71	N 32 12 2 60	W 103 59 30 01
	12000 00	91 21	273 29	8654 19	5687 29	3875 12	784 19	-3797 86	0 00	438915 85	605582 91	N 32 12 2 66	W 103 59 31 17
	12100 00	91 21	273 29	8652 08	5685 18	3974 51	789 92	-3897 67	0 00	438921 58	605483 10	N 32 12 2 72	W 103 59 32 33
	12200 00	91 21	273 29	8649 96	5683 06	4073 91	795 65	-3997 48	0 00	438927 31	605383 29	N 32 12 2 78	W 103 59 33 50
	12300 00	91 21	273 29	8647 85	5680 95	4173 31	801 38	-4097 30	0 00	438933 04	605283 49	N 32 12 2 84	W 103 59 34 66
	12400 00	91 21	273 29	8645 74	5678 84	4272 70	807 11	-4197 11	0 00	438938 77	605183 68	N 32 12 2 90	W 103 59 35 82
	12500 00	91 21	273 29	8643 63	5676 73	4372 10	812 84	-4296 92	0 00	438944 50	605083 88	N 32 12 2 96	W 103 59 36 98
	12600 00	91 21	273 29	8641 51	5674 61	4471 49	818 57	-4396 74	0 00	438950 23	604984 07	N 32 12 3 02	W 103 59 38 14
	12700 00	91 21	273 29	8639 40	5672 50	4570 89	824 31	-4496 55	0 00	438955 96	604884 27	N 32 12 3 08	W 103 59 39 30
	12800 00	91 21	273 29	8637 29	5670 39	4670 29	830 04	-4596 36	0 00	438961 69	604784 46	N 32 12 3 14	W 103 59 40 46
	12900 00	91 21	273 29	8635 18	5668 28	4769 68	835 77	-4696 18	0 00	438967 42	604684 66	N 32 12 3 20	W 103 59 41 83
	13000 00	91 21	273 29	8633 06	5666 16	4869 08	841 50	-4795 99	0 00	438973 15	604584 85	N 32 12 3 26	W 103 59 42 79
	13100 00	91 21	273 29	8630 95	5664 05	4968 48	847 23	-4895 80	0 00	438978 88	604485 05	N 32 12 3 31	W 103 59 43 95
	13200 00	91 21	273 29	8628 84	5661 94	5067 87	852 96	-4995 62	0 00	438984 61	604385 24	N 32 12 3 37	W 103 59 45 11
	13300 00	91 21	273 29	8626 73	5659 83	5167 27	858 69	-5095 43	0 00	438990 34	604285 43	N 32 12 3 43	W 103 59 46 27
Plat Bottom Perf.	13381 66	91 21	273 29	8625 00	5658 10	5248 44	863 37	-5176 94	0 00	438995 02	604203 93	N 32 12 3 48	W 103 59 47 22

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95 000% Confidence 2 7955 sigma
Survey Program:

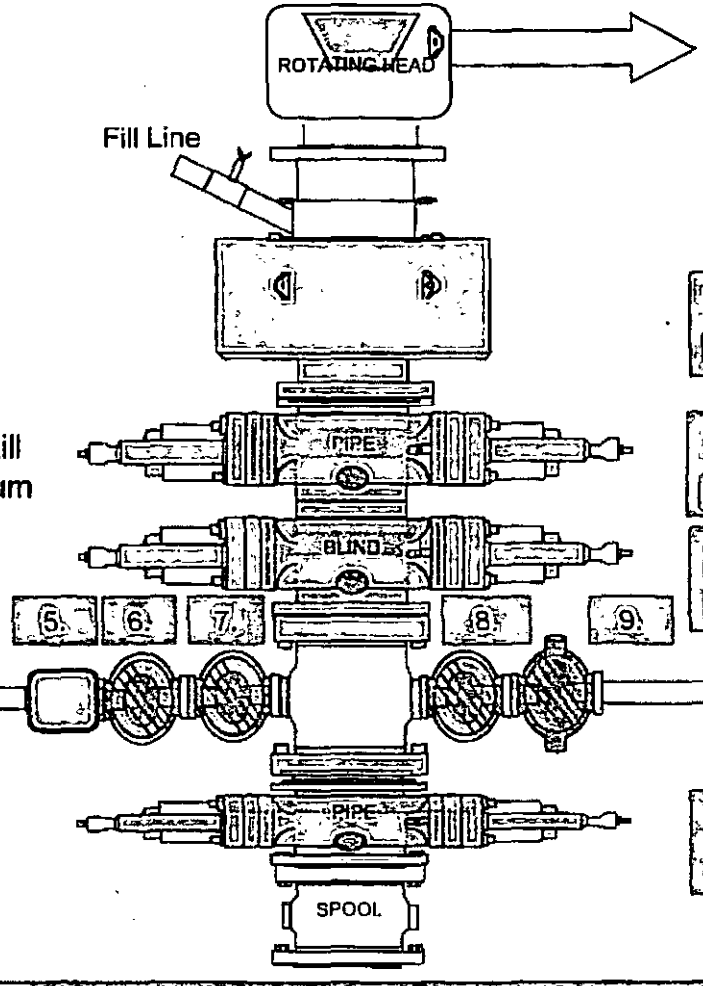
Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0 000	27 200	1/100 000	30 000	30 000		SLB_MWD-STD_HDGM-Depth Only	Cedar Canyon 21 Fed. Com 5H Original Borehole / Oxy Cedar Canyon 21 Fed Com 5H Rev0
	1	27 200	13381 664	1/100 000	30 000	30 000		SLB_MWD-STD_HDGM	Cedar Canyon 21 Fed. Com 5H - Original Borehole / Oxy Cedar

5M BOP Stack

Mud Cross Valves:

5. 5M Check Valve
6. Outside 5M Kill Line Valve
7. Inside 5M Kill Line
8. Outside 5M Kill Line Valve
9. 5M HCR Valve

*Minimum ID = 2-1/16" on Kill Line side and 3" minimum ID on choke line side



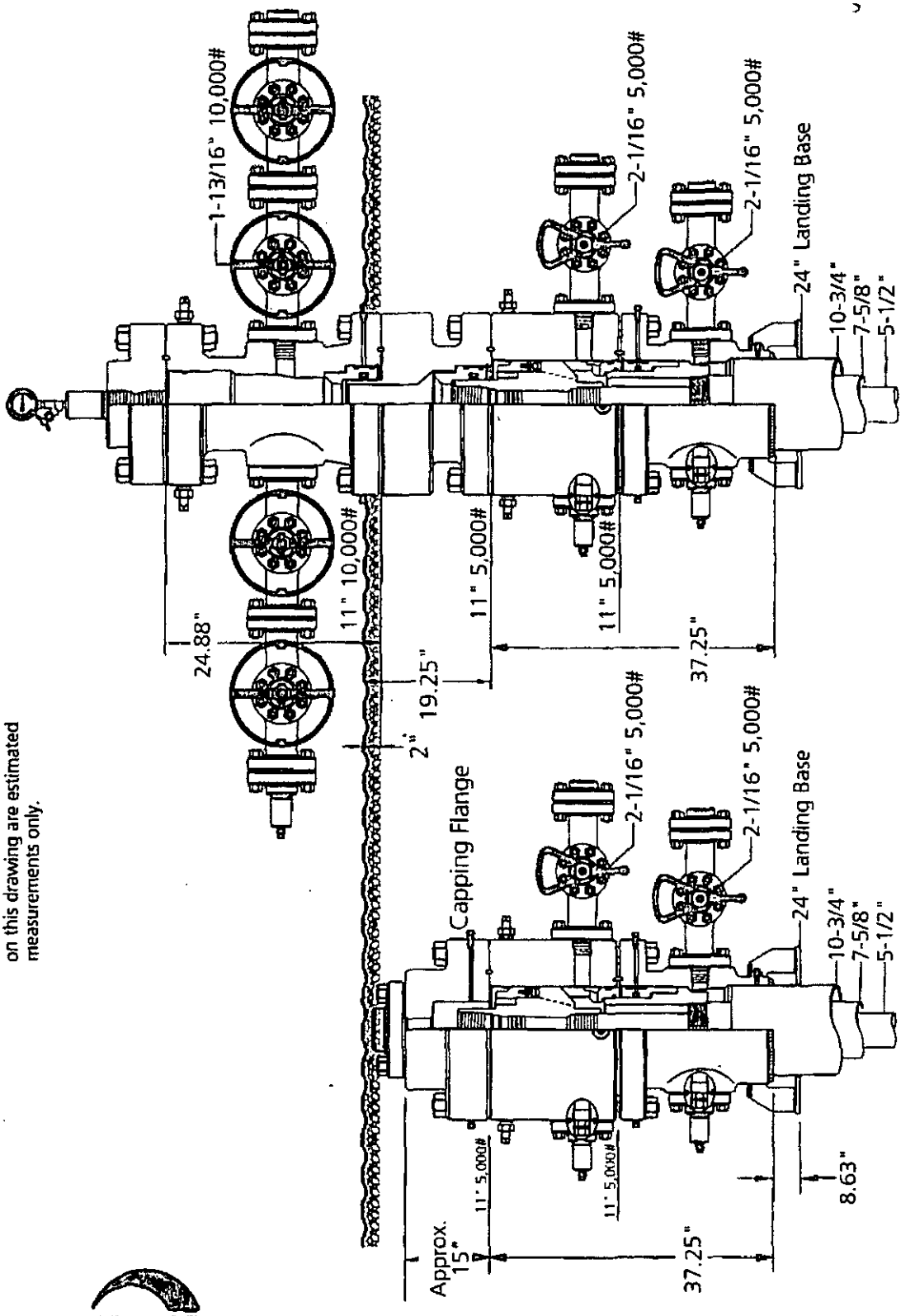
To Kill Line

To Co-Flex and Choke Manifold

1. 5000 psi Annular (13-3/8" ID)
2. 5,000 psi Upper Pipe Ram (13-3/8" ID)
3. 5,000 psi Blind Ram (13-3/8" ID)
4. 5,000 psi Lower Pipe Ram (13-3/8" ID)

BOP-1

BOP-2



Note: Dimensional information reflected on this drawing are estimated measurements only.

OXY

11" 10K MBS w/ 5.5" Mandrel

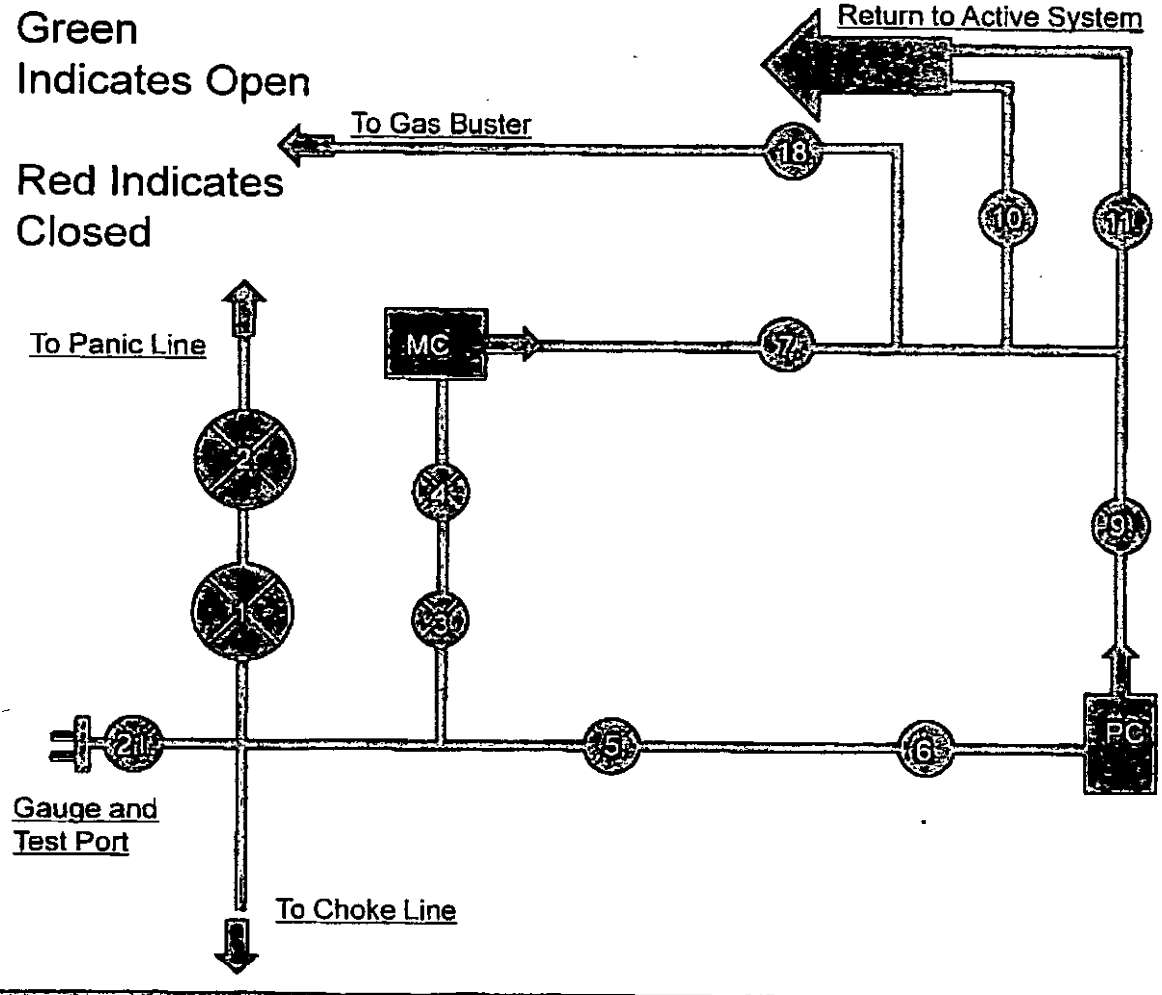
CAMERON

Jeanette	8-5-15	#	J-9579-4

5M Choke Panel

Green
Indicates Open

Red Indicates
Closed



1. 4" Choke Manifold Valve
2. 4" Choke Manifold Valve
3. 3" Choke Manifold Valve
4. 3" Choke Manifold Valve
5. 3" Choke Manifold Valve
6. 3" Choke Manifold Valve
7. 3" Choke Manifold Valve
8. PC – Power Choke
9. 3" Choke Manifold Valve
10. 3" Choke Manifold Valve
11. Choke Manifold Valve
12. MC – Manual Choke

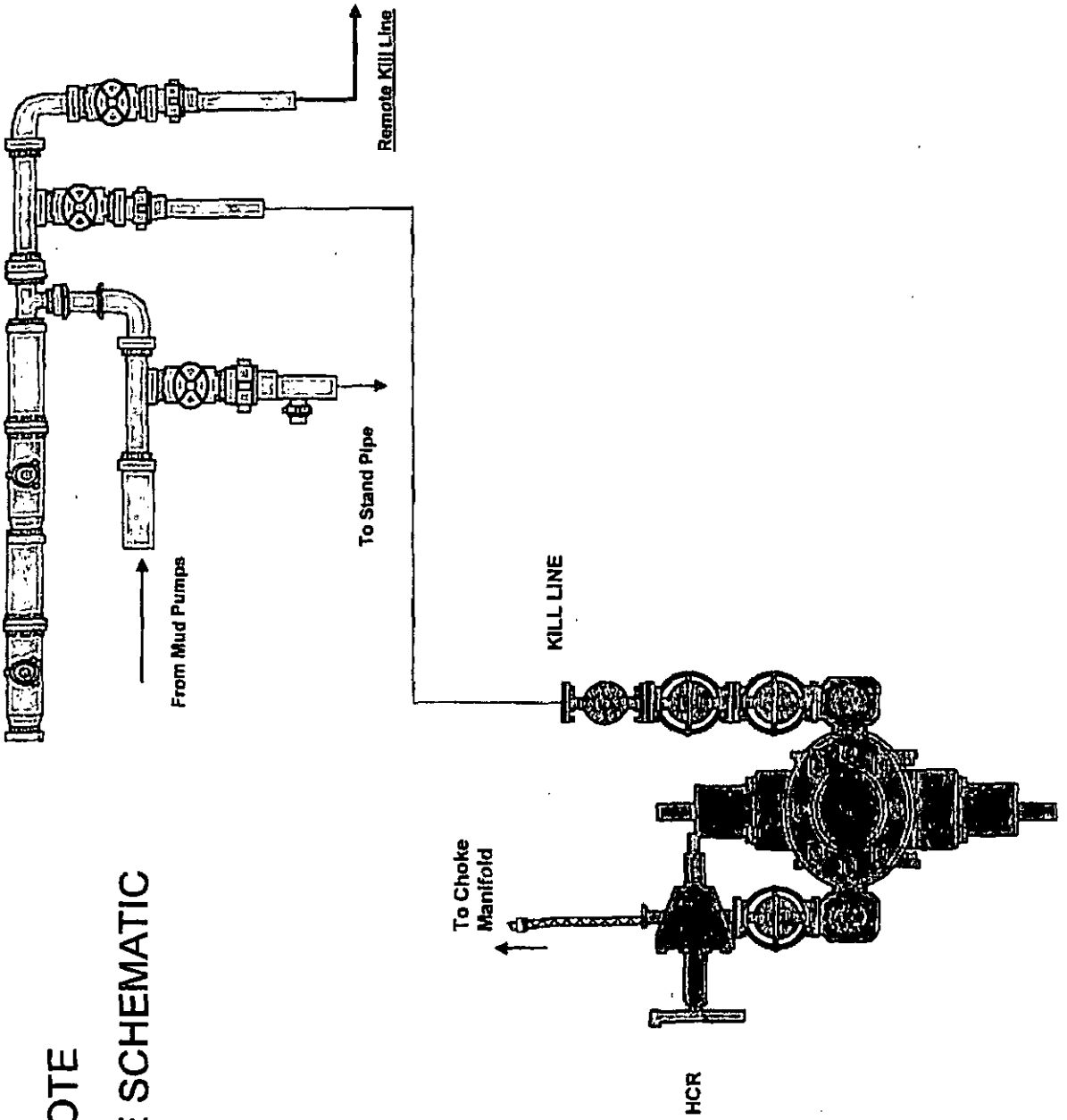
18. Choke Manifold Valve

21. Vertical Choke Manifold Valve

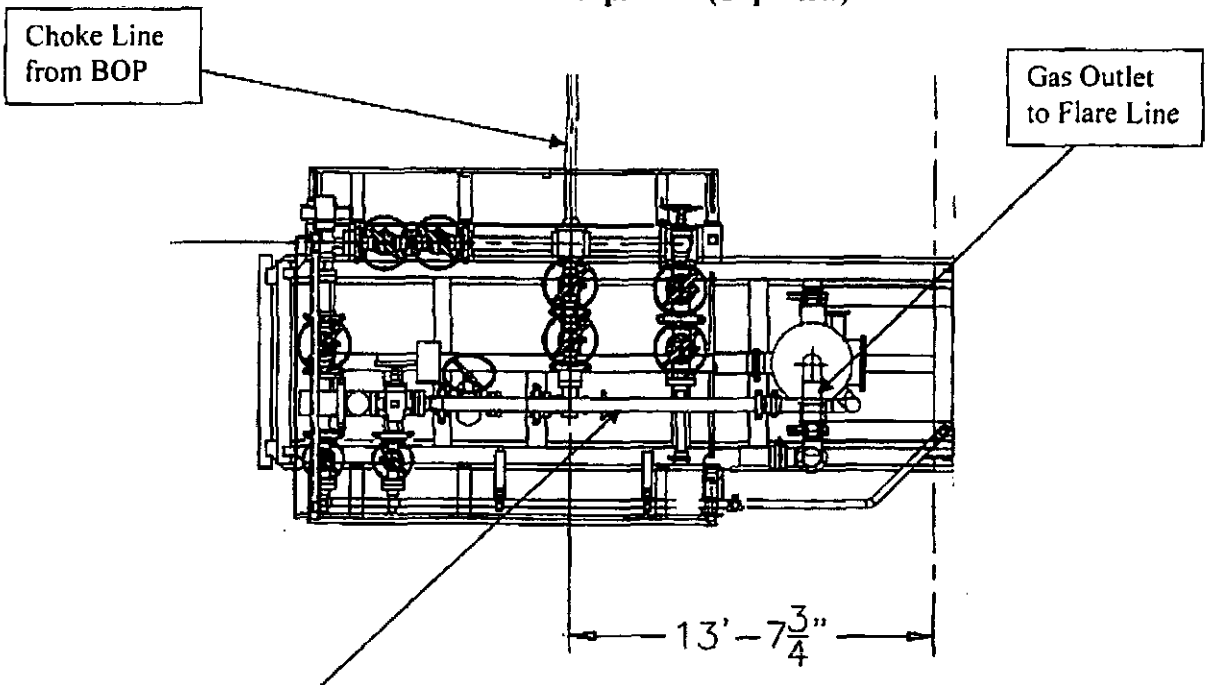
***All Valves 3" minimum**

CM-1

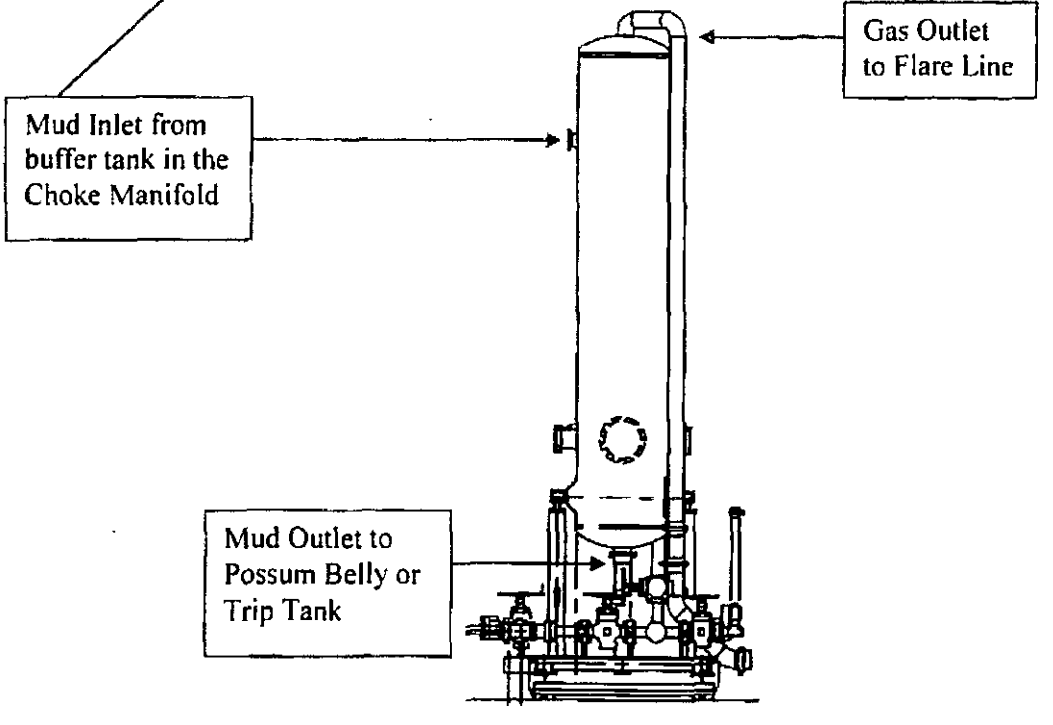
10M REMOTE KILL LINE SCHEMATIC



Choke Manifold – Gas Separator (Top View)

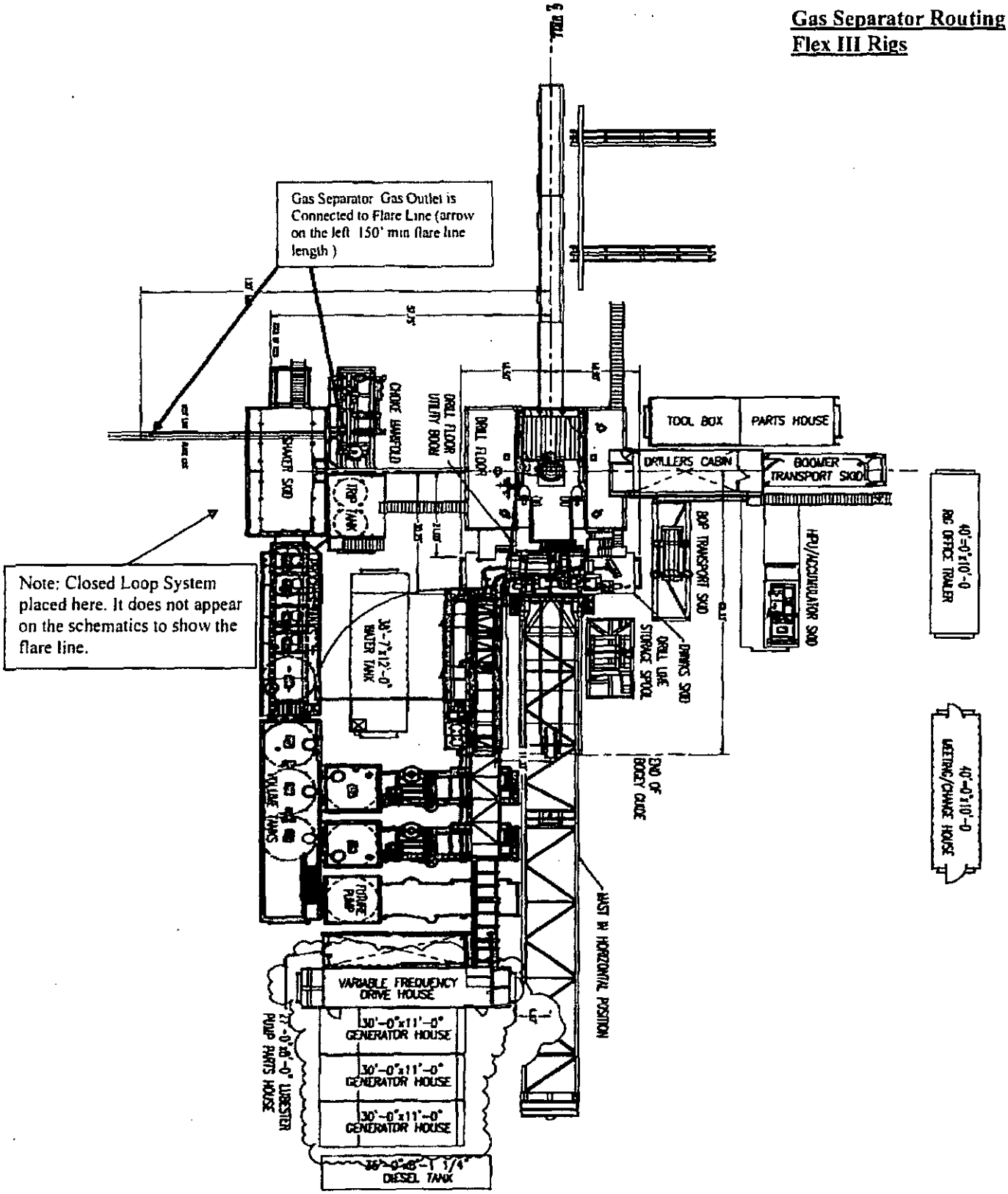


Choke Manifold – Gas Separator (Side View)

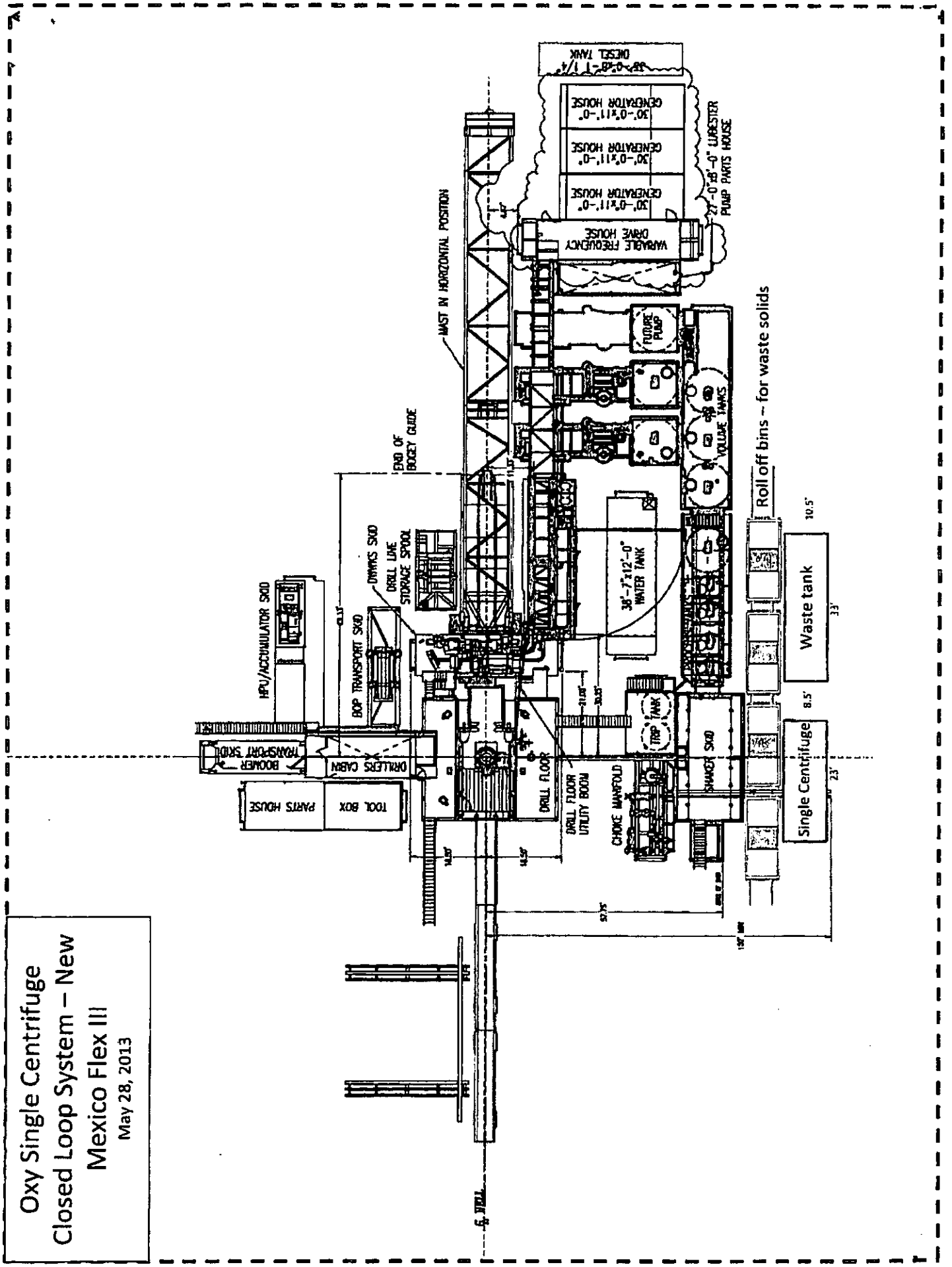


CM-4

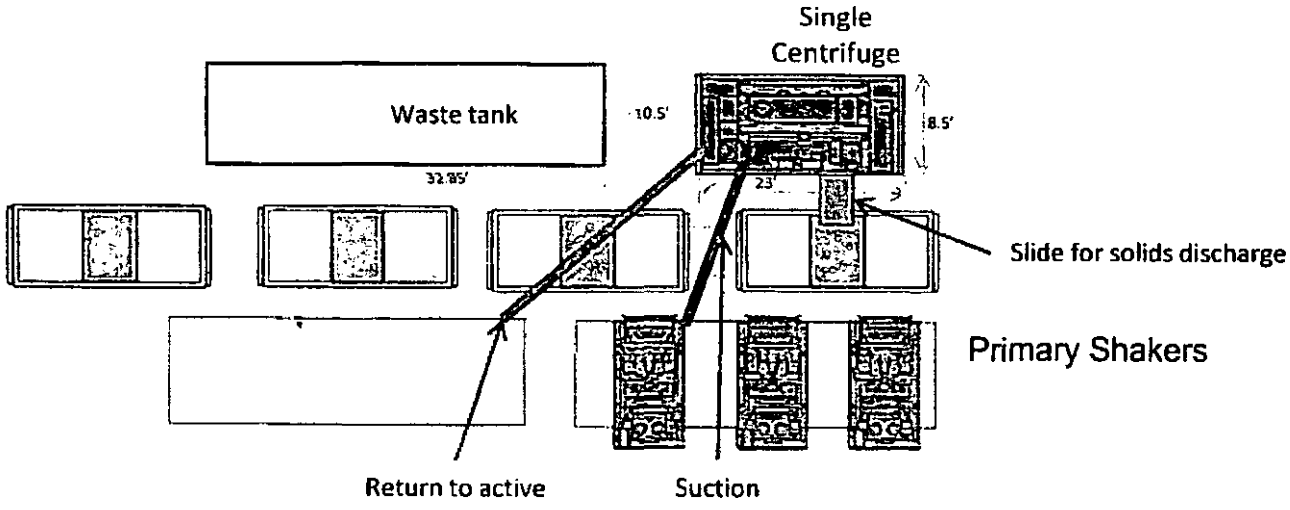
Gas Separator Routing
Flex III Rigs



CL-1


Oxy Single Centrifuge
Closed Loop System – New Mexico Flex III
May 28, 2013
Roll off bins – for waste solids
Waste tank
Single Centrifuge
MAST IN HORIZONTAL POSITION
END OF BOOEY GUIDE
DRILL LINE STORAGE SPOOL
DRAWS SKID
HPU/ACCUMULATOR SKID
BOP TRANSPORT SKID
BOOMER TRANSPORT SKID
DRILLERS CABIN
TOOL BOX
PARTS HOUSE
DRILL FLOOR
DRILL FLOOR UTILITY BOOM
CHOKE MANIFOLD
SHAKER SKID
TRIP TANK
38'-7"x12'-0" WATER TANK
VOLUME TANKS
FUTURE PUMP
VARIABLE FREQUENCY DRIVE HOUSE
GENERATOR HOUSE
GENERATOR HOUSE
GENERATOR HOUSE
DIESEL TANK
27'-0"x8'-0" LUBESTER PUMP PARTS HOUSE

Oxy



Well Head

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

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	T7898A
4 1/16" Flange end		AISI 4130	26984

INFOCHIP INSTALLED

API Spec 16 C
Temperature rate:"B"

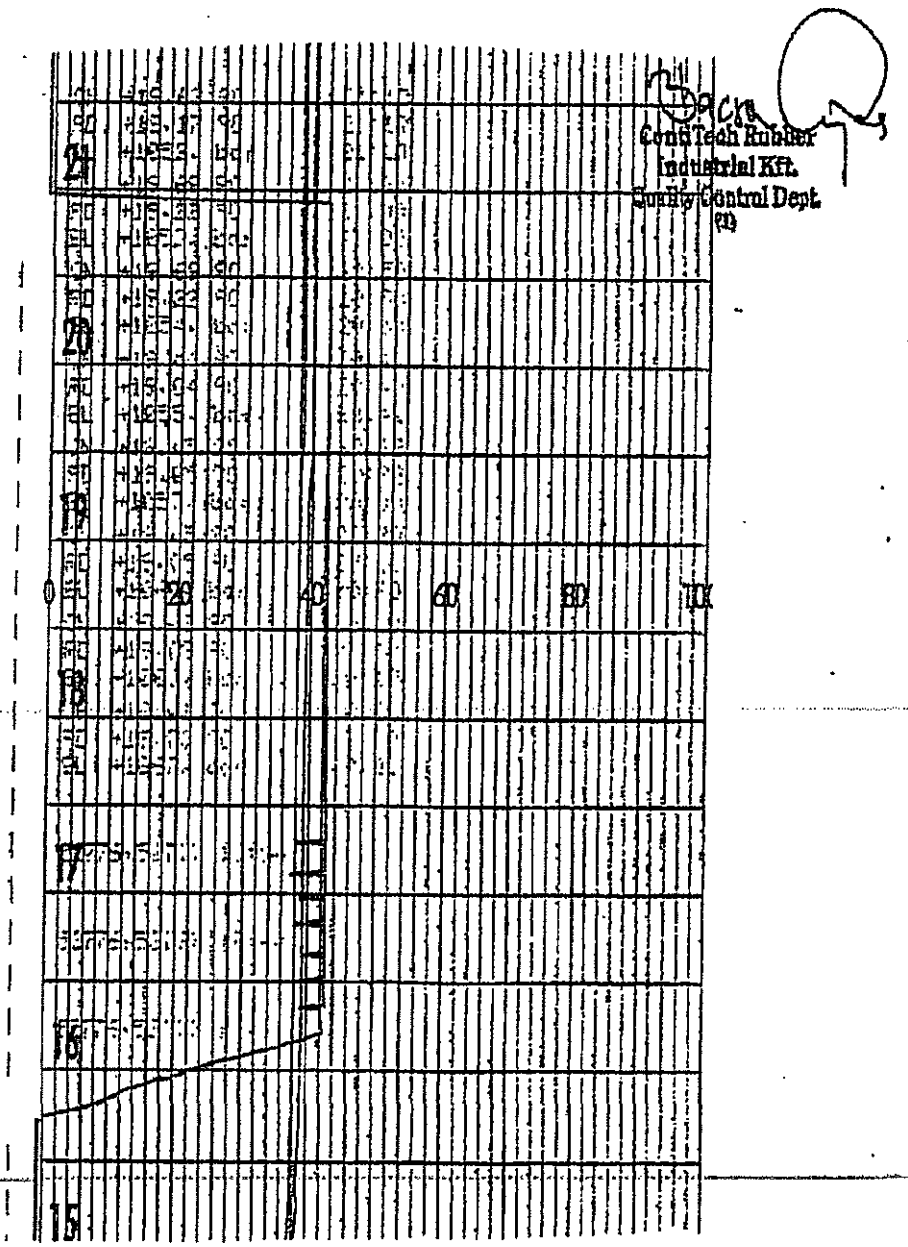
All metal parts are flawless

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-2

Coflex Hose Certification



FH-3

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	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-4

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 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
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.

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-HFF3	LIFTING & SAFETY EQUIPMENT TO			1	2440	002440		M/STK		
SC725-200CS	SAFETY CLAMP 200HH 7.25T	CARBON STEEL		1	2519	H665		22C		
SC725-132CS	SAFETY CLAMP 132HH 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-5

Continental CONTITECH

Fluid Technology

Quality Document

FH-6

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. (2)

Date: 04. April. 2008

Position: Q.C. Manager

H2S-1

Permian Drilling
Hydrogen Sulfide Drilling Operations Plan
Cedar Canyon 21 Federal Com 5H

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 Northwest 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 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.

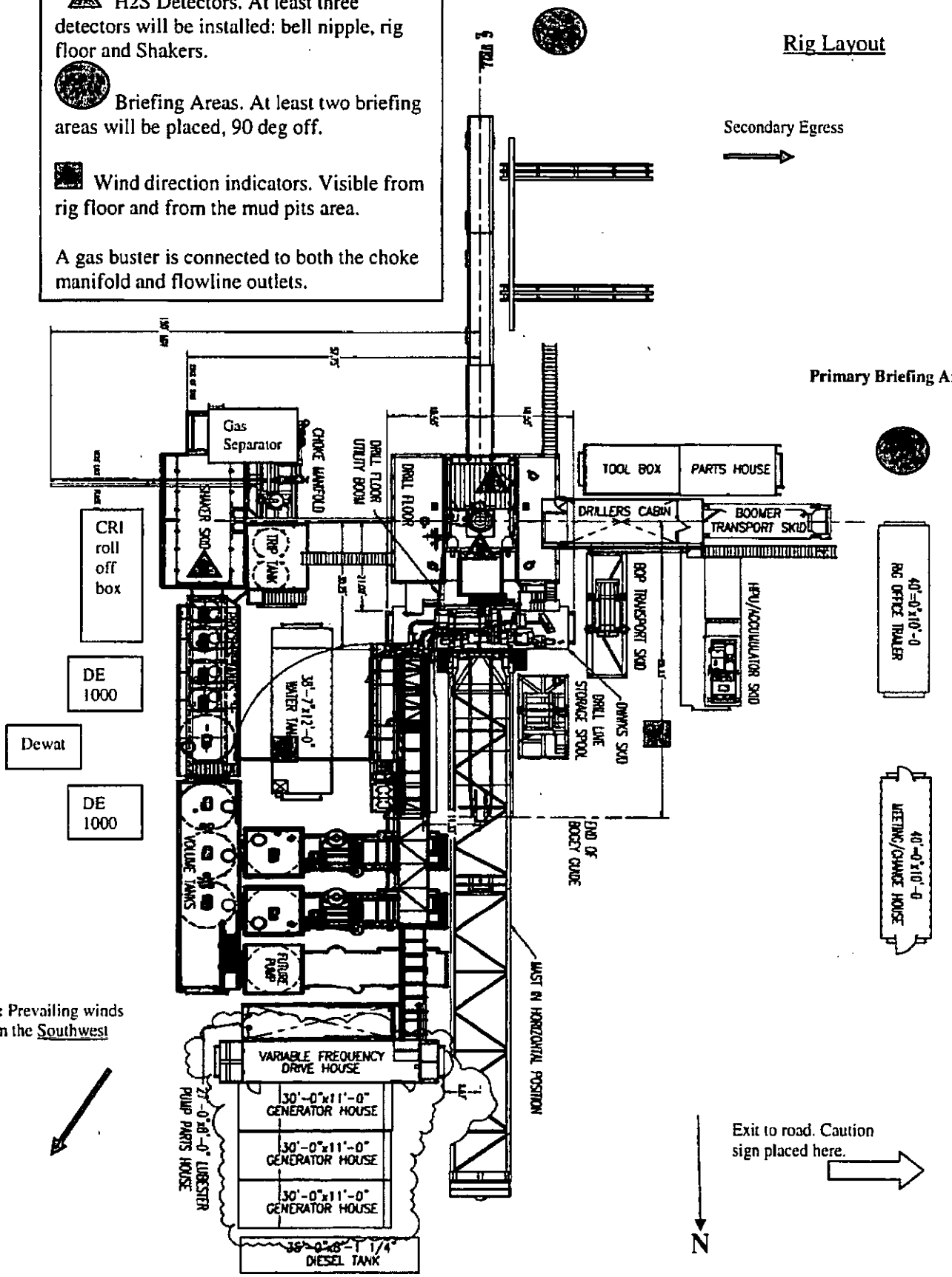
Wind direction indicators. Visible from rig floor and from the mud pits area.

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

Secondary Briefing Area

Rig Layout

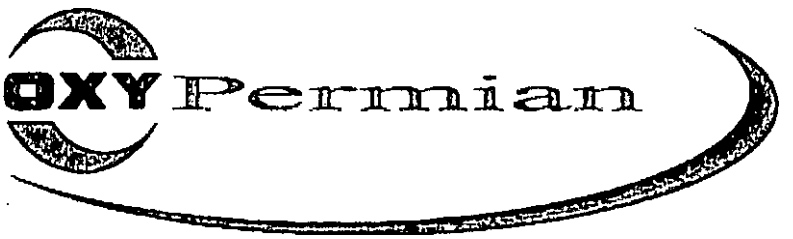
Secondary Egress



WIND: Prevailing winds are from the Southwest

Exit to road. Caution sign placed here.

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. Remotely operated choke.
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

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

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

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

Surface Use Plan of Operations

Operator Name/Number:	**OXY USA Inc. – 16696**
Lease Name/Number:	**Cedar Canyon 21 Federal Com #5H**
Pool Name/Number:	**Corral Draw Bone Spring – 96238**
Surface Location:	**1090 FSL 207 FWL SWSW (M) Sec 22 T24S R29E Fee**
Bottom Hole Location:	**1980 FSL 180 FWL NWSW (L) Sec 21 T24S R29E Fee**

1. Existing Roads

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

b. The well was staked by Terry J. Asel, Certificate No. 15079 on 1/15/16, certified 2/16/16.

c. Directions to Location: From the intersection of USH 285 and Black River Road in Malaga, go east on CR 720 for 1.3 miles. Turn right on CR 746 and go south for 0.8 miles, continue southeast/east for 4.8 miles. Curve to the left for 0.4 miles. Turn left and go west for 0.1 miles. Turn right and go north for 0.5 miles. Turn left on proposed road and go northwest for 209.2 feet to location.

2. New of Reconstructed Access Roads:

a. A new access road will be built. The access road will begin at an existing lease road and will go northwest approximately 209.2' through the pasture to the southwest corner of pad.

b. The maximum width of the road will be 15'. It will be crowned and made up of 6" of rolled and compacted caliche. Water will be deflected, as necessary, to avoid accumulation and prevent surface erosion.

c. Surface material will be native caliche. This material will be obtained from a BLM approved pit nearest in proximity to the location. The average grade will be approximately 1%.

d. No cattle guards, grates or fence cuts will be required. No turnouts are planned.

e. Blade, water and repair existing caliche roads as needed.

f. Water Bars will be incorporated every 200' during the construction of the road, see attached.

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 Facilities:

a. In the event the well is found productive, the Cedar Canyon 22 Federal tank battery would be utilized and the necessary production equipment will be installed at the well site. See proposed Facilities Layout diagram.

b. All flow lines will adhere to API standards. They will consist of 2 – 4" composite flowlines operating < 75% MAWP, and 1 – 4" composite gas life supply line operating < 125 psig on surface, lines to follow surveyed route. Survey for a pipeline approximately 1440' in length crossing Sections 22 T24S R29E, NMPM, Eddy County, NM, see attached.

c. Electric line will follow a route approved by the BLM. Survey for an electric line 143.6' in length crossing Section 22 24S R29E, NMPM, Eddy County, NM, see attached.

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:

Primary

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

Secondary

The secondary way of obtaining caliche to build locations and roads will be by "turning over" the location. This means, caliche will be obtained from the actual well site. A caliche permit will be obtained from BLM prior to pushing up any caliche. 2400 cubic yards is max amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel:

a. The top 6" of topsoil is pushed off and stockpiled along the side of the location.
b. An approximate 120' X 120' area is used within the proposed well site to remove caliche.
c. Subsoil is removed and piled alongside the 120' X 120' within the pad site.
d. When caliche is found, material will be stockpiled within the pad site to build the location and road.
e. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
f. Once the well is drilled the stockpiled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. Neither caliche nor subsoil will be stockpiled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in the attached plat.

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. Solids-CRI, 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 pickup 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 – South CL Tanks – East Pad – 470' X 280' – 3 well pad

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 topsoil will again be returned to the pad and contoured, as close as possible, to the original topography, and the area will be seeded with an approved BLM mixture to re-establish vegetation.

b. If the well is deemed commercially productive, caliche from the areas of the pad site not required for operations will be reclaimed. The original topsoil 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 John D. Brantley, Jr. 706 W. Riverside Dr., Carlsbad, NM 88220 and Henry McDonald, P.O. Box 597, Loving, NM 88256. Surface Use and Compensation Agreement between OXY USA Inc. and John D. Brantley, Jr. and Harry McDonald, as Surface Owners, dated January 27, 2014, copy provided upon request. They will be notified of our intention to drill prior to any activity.
The minerals are owned by the U.S. Government and administered by the BLM.
The surface is of limited use except for the grazing of livestock and the production of oil and gas.

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. There are no dwellings within one mile of the proposed well site.

d. Cultural Resources Examination – This well is located in the Permian Basin MOA and includes a multi-well pad to accommodate batch drilling with skidding operations.

Pad + ¼ mile road	$1552.00	$.20/ft over ¼ mile	$0.00	$1552.00
Pipeline-up to 1 mile	$1433.00	$299 per ¼ mile	$299.00	$1732.00
Electric Line-up to 1 mile	$739.00	$.23/ft over 1 mile	$0.00	$ 739.00
Total	$3724.00		$0.00	$4023.00

e. Copy of this Application has been mailed to CEHMM, 505 N. Main St. Carlsbad, NM 88220.

13. Bond Coverage:

Bond coverage is Individual-NMB000862, Nationwide-ESB00226.

14. Operators Representatives:

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

Victor Guadian
Production Coordinator
1502 West Commerce Dr.
Carlsbad, NM 88220
Office – 575-628-4006
Cellular – 575-291-9905

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

Jim Wilson
Operation Specialist
P.O. Box 50250
Midland, TX 79710
Cellular – 575-631-2442

Omar Lisigurski
RMT Leader
P.O. Box 4294
Houston, TX 77210
Office – 713-215-7506
Cellular – 281-222-7248

Oxy U.S.A Inc.

New Mexico Staking Form

Date Staked: 1-15-16

Lease/Well Name: Cedar Canyon 21 Fed Com #5H

Legal Description: 1120'FSL 207'FWL Sec 22 T24S R29E

Latitude: 32° 11' 55.51" NAD 83

Longitude: -103° 58' 48.76"

Move Information: 470 x 260

County: Eddy

Surface Owner/Tenant: BLM

Nearest Residence: 1/2 mile

Nearest Water Well:

V-Door: SOUTH

Road Description: Road into SW corner from ~~WEST~~ SOUTH

New Road:

Upgrade Existing Road:

Interim Reclamation: 50' EAST 30' NORTH 30' SOUTH

Source of Caliche:

Top Soil: NORTH

Onsite Date Performed: 1-21-16

Onsite Attendees: Jessie Bassett, Brooke Wilson - BLM Jim Wilson - Oxy
Asel Surucy

Special Notes:

Form NM 8140-9
(March 2008)

United States Department of the Interior
Bureau of Land Management
New Mexico State Office

Permian Basin Cultural Resource Mitigation Fund

The company shown below has agreed to contribute funding to the Permian Basin Cultural Resource Fund in lieu of being required to conduct a Class III survey for cultural resources associated with their project. This form verifies that the company has elected to have the Bureau of Land Management (BLM) follow the procedures specified within the Memorandum of Agreement (MOA) concerning improved strategies for managing historic properties within the Permian Basin, New Mexico, for the undertaking rather than the Protocol to meet the agency's Section 106 obligations.

Company Name: OXY USA Inc.

Address: ATTN: David Stewart
P.O. Box 50250
Midland, TX 79710

Project description: Cedar Canyon 21 Federal Com 5H

Pad / Road - $1552.00

Pipeline - $1732.00

Electric Line - $739.00

1090 FSL 207 FWL SWSW (M)

T. 24S, R. 29E, Section 22 NMPM, Eddy County, New Mexico

Amount of contribution: $ 4023.00

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Oxy USA Incorporated
LEASE NO.:	NMNM13996
WELL NAME & NO.:	5H-Cedar Canyon 21 Federal Com
SURFACE HOLE FOOTAGE:	1090'/S & 207'/W
BOTTOM HOLE FOOTAGE	1980'/S & 180'/W
LOCATION:	Section 22, T.24 S., R.29 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.

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)

Avian Protection
Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all power line structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. The holder without liability or expense shall make such modifications and/or additions to the United States.

Cave and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:
No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:
The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

Tank Battery Liners and Berms:
Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:
Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:
Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

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 strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be

redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area 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. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. 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.

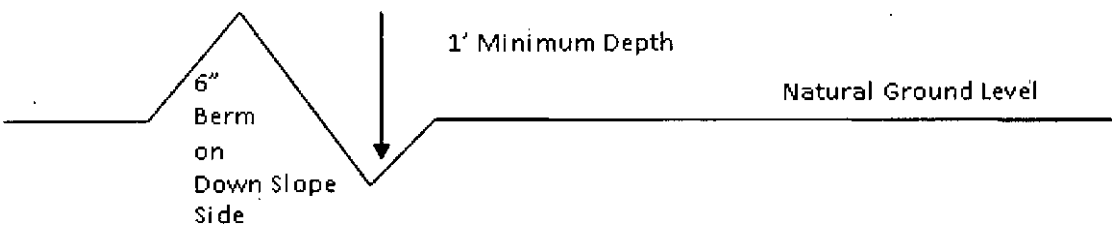
Ditching
Ditching shall be required on both sides of the road.

Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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:

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

Cattleguards

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route 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 cattleguards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted 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 fences.

Public Access

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

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

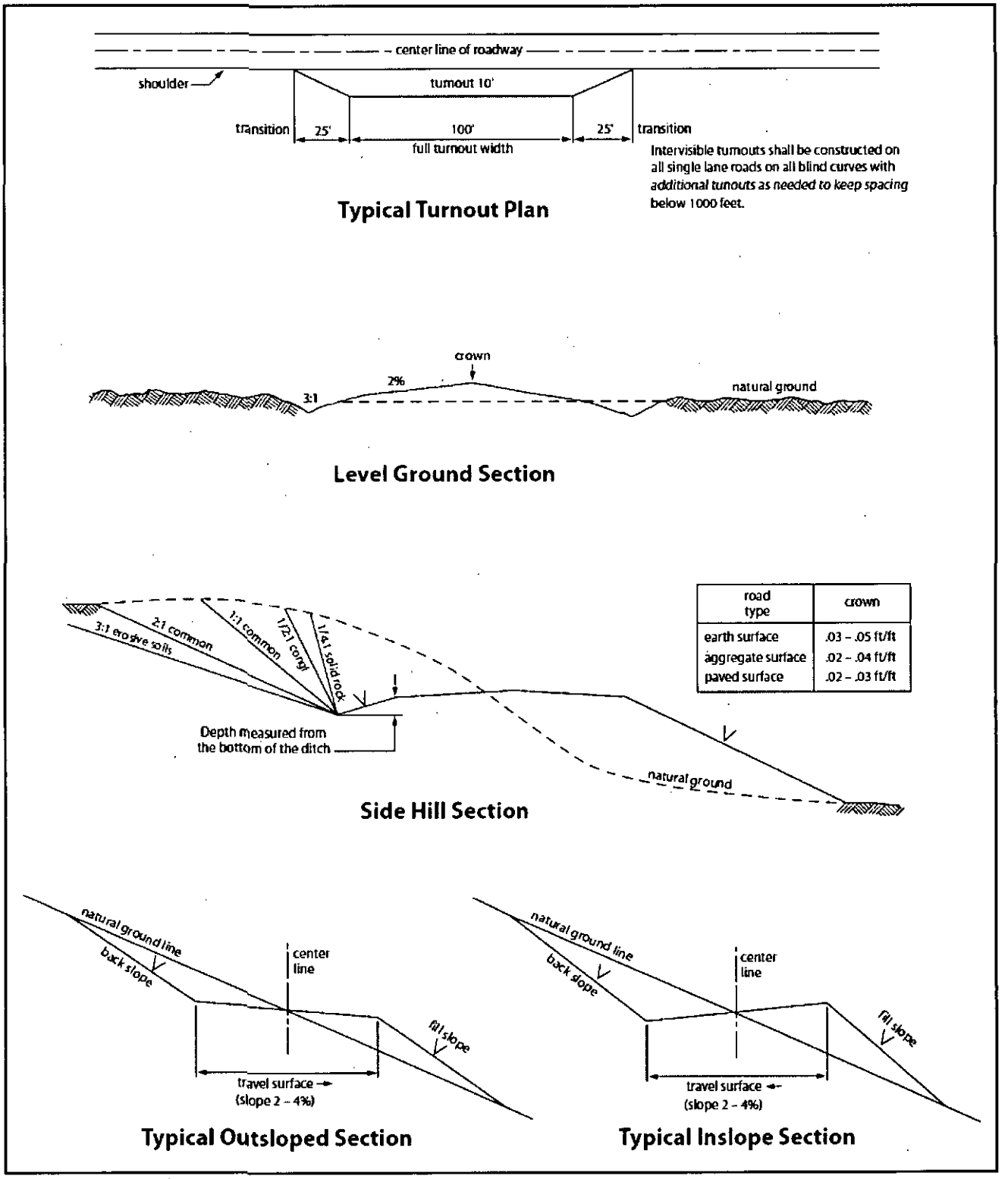


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ **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 H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**

2. **The operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well , after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well.**

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 is 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 or are Non-API. 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.). The initial wellhead installed on the well will remain on the well with spools used as needed.

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

Wait on cement (WOC) for Water Basin:
After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. (For surface casing the BOP can be nippled up after the cement has reached 500 psi compressive strength.)

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

Medium cave/karst
Possible water flows in Castile and Salado.
Posible lost circulation in Rustler, Salado and Delaware.

1. The **10 3/4** inch surface casing shall be set at approximately **400** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, the operator shall set the casing 25' above the salt.**
    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 10-3/4" 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 and the mud weight for the bottom of the hole. Report results to BLM office.

The 7-5/8 inch intermediate casing must be kept liquid filled while running into hole to meet minimum BLM requirements for collapse.

2. The minimum required fill of cement behind the **7-5/8** inch intermediate 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.

Operator has proposed DV tool at depth of 2900', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

   b. Second stage above DV tool:
   ☒ 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 cave/karst.**

If cement does not circulate to surface on the intermediate casing, the cement on the production casing must come to surface.

Formation below the 7-5/8" 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.

3. The minimum required fill of cement behind the **5-1/2 x 4-1/2** inch production casing is:
   ☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.

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. These documents shall be posted in the company man's trailer and on the rig floor.** 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. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. 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.**

    a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
    b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
    c. **Manufacturer representative shall install the test plug for the initial BOP test.**
    d. **Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.**
    e. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**

5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
    a. In a water basin, 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. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not

hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

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

e. 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.**

f. 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. This test shall be performed prior to the test at full stack pressure.

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.

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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.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures
Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

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).

VRM Facility Requirement
Low-profile tanks not greater than eight-feet-high shall be used.

B. PIPELINES
STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the Grant and attachments, including stipulations, survey plat(s) and/or map(s), shall be on location during construction. BLM personnel may request to review a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, Holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC § 2601 *et seq.* (1982) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant (*see* 40 CFR, Part 702-799 and in particular, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193). Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. Holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. § 9601, *et seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et seq.*) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way Holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way Holder on the Right-of-Way. This provision applies without regard to whether a release is caused by Holder, its agent, or unrelated third parties.

4. Holder shall be liable for damage or injury to the United States to the extent

provided by 43 CFR Sec. 2883.1-4. Holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

a. Activities of Holder including, but not limited to: construction, operation, maintenance, and termination of the facility;

b. Activities of other parties including, but not limited to:
   (1) Land clearing
   (2) Earth-disturbing and earth-moving work
   (3) Blasting
   (4) Vandalism and sabotage;

c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars ($1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of Holder, regardless of fault. Upon failure of Holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he/she deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of Holder. Such action by the Authorized Officer shall not relieve Holder of any responsibility as provided herein.

6. All construction and maintenance activity shall be confined to the authorized right-of-way width of **20** feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline shall be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline shall be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity shall be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation shall be allowed unless approved in writing by the Authorized Officer.

8. Holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline shall be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of **24** inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder 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 will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation

measures will be made by the authorized officer after consulting with the holder.

16. 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, powerline 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.

17. Surface pipelines shall be less than or equal to 4 inches and a working pressure below 125 psi.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of

the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder 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 will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:
    - For reclamation remove poles, lines, transformer, etc. and dispose of properly.
    - Fill in any holes from the poles removed.

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).

Seed Mixture 2, for Sandy 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
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

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