

NM OIL CONSERVATION

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ARTESIA DISTRICT
OCT 30 2015 ArtesiaFORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.
NMNM94851

6. If Indian, Allottee or Tribe Name

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

SUBMIT IN TRIPLICATE - Other instructions on reverse side.8. Well Name and No
CEDAR CANYON 23 FEDERAL 3H9. API Well No.
30-015-4329010. Field and Pool, or Exploratory
PIERCE CROSSING BN SPRG,E11. County or Parish, and State
EDDY COUNTY, NM

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other2. Name of Operator
OXY USA INC.Contact: DAVID STEWART
E-Mail: david_stewart@oxy.com3a. Address
P.O. BOX 50250
MIDLAND, TX 797103b. Phone No. (include area code)
Ph: 432-685-5717
Fx: 432-685-5742

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 22 T24S R29E SENE 2540FSL 200FEL
32.202503 N Lat, 103.963914 W Lon**12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original APD
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

OXY USA Inc. respectfully requests approval for the following changes to the approved APD:

1. Extend Pad to a multi-well pad to accommodate two additional wells and skidding the rig.
2. Amend horizontal lateral
3. Amend casing/cementing/mud programs
4. Propose to run the wellhead through the rotary prior to cementing surface casing.

Proposed TD - 16359'M 8987'V

1. Amended C-102 and plats attached

New - SL 2540 FSL 200 FEL SENE Sec 22 - BHL 2250 FNL 2470 FWL SENW Sec 24

Old - SL 2540 FSL 200 FEL SENE Sec 22 - BHL 2260 FSL 2460 FWL NESW Sec 24

Accepted for record

10-29-15 NMOC 11/6/15

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

14. I hereby certify that the foregoing is true and correct

Electronic Submission #321901 verified by the BLM Well Information System
For OXY USA INC., sent to the Carlsbad

Name (Printed/Typed) DAVID STEWART

Title SR. REGULATORY ADVISOR

Signature (Electronic Submission)

Date 10/28/2015

THIS SPACE FOR FEDERAL OR STATE OFFICE USEApproved By *Chc Wells*

For

Title AFM

Date 10/30/15

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

Office CARLSBAD FIELD OFFICE

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.

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

Additional data for EC transaction #321901 that would not fit on the form

32. Additional remarks, continued

2. Amended Directional Plan attached

3. Amended casing/cementing/mud programs

a. Surface Casing

10-3/4" 45.5# J-55 BT&C new csg @ 0-480', 14-3/4" hole w/ 8.4# mud
Coll Rating (psi)-2090 Burst Rating (psi)-3580
SF Coll-10.94 SF Burst-1.40 SF Ten-6.11

b. Intermediate Casing - Deep

7-5/8" 29.7# L80 BT&C new csg @ 0-8170', 9-7/8" hole w/ 9.4# mud
Coll Rating (psi)-4790 Burst Rating (psi)-6890
SF Coll-5.00 SF Burst-1.31 SF Ten-2.19

Setting depth will be +/- 100' of approved depending on how formation tops affect planned KOP.
DVT/ACP to be set @ +/-3075', if cement circulates to surface on 1st stage, cancellation cone will be dropped.

c. Production Casing

5-1/2" 20# P-110 USF new csg @ 0-9000'M, 6-3/4" hole w/ 9.2# mud
Coll Rating (psi)-11100 Burst Rating (psi)-12600
SF Coll-2.69 SF Burst-1.22 SF Ten-2.05
4-1/2" 13.5# P-110 BT&C new csg @ 9000-16359'M, 6-3/4" hole w/ 9.2# mud
Coll Rating (psi)-10670 Burst Rating (psi)-12410
SF Coll-2.42 SF Burst-1.23 SF Ten-2.15

Collapse and burst loads calculated using Stress Check with anticipated loads, see attached for design assumptions

Cement program modifications detailed below.

a. Surface - Circulate cement to surface w/ 550sx PP cmt w/ 2% CaCl₂, 14.8ppg 1.35 yield, 500# CS in 6.50hr, 150% Excess.

b. Intermediate - Circulate cement to surface w/ 1100sx Tuned Light (TM) system cmt w/ 3#/sx Kol-Seal + .125#/sx Poly-E-Flake + .8% HR-601, 10.2ppg 3.05 yield, 500# CS in 15.07hr, 125% Excess followed by 150sx Super H cmt w/ 3#/sx salt + .1% HR-800 + .3% CFR-3 + .5% Halad(R)-344 + 2#/sx Kol-Seal, 13.2ppg 1.65 yield, 500# CS in 12.57hr, 15% Excess.

Contingency 2nd Stage - Circulate cement to surface w/ 490sx HES light PP cmt w/ 5% Salt + .1% HR-800, 12.9ppg 1.87 yield, 500# CS in 12.44hr, 75% Excess followed by 182sx PP cmt, 14.8ppg 1.33 yield, 500# CS in 6.31hr, 125% Excess.

c. Production - Cement w/ 150sx Super H cmt w/ 3#/sx salt + .1% HR-800 + .3% CFR-3 + .5% Halad(R)-344 + 2#/sx Kol-Seal, 13.2ppg 1.65 yield, 500# CS in 12.57hr, 50% Excess. Estimated TOC @ 7170'.

Description of Cement Additives: Calcium Chloride, Salt (Accelerator); CFR-3 (Dispersant); Kol-Seal, Poly-E-Flake (Lost Circulation Additive); Halad-344 (Low Fluid Loss Control); HR-601, HR-800 (Retarder)

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

Mud Program

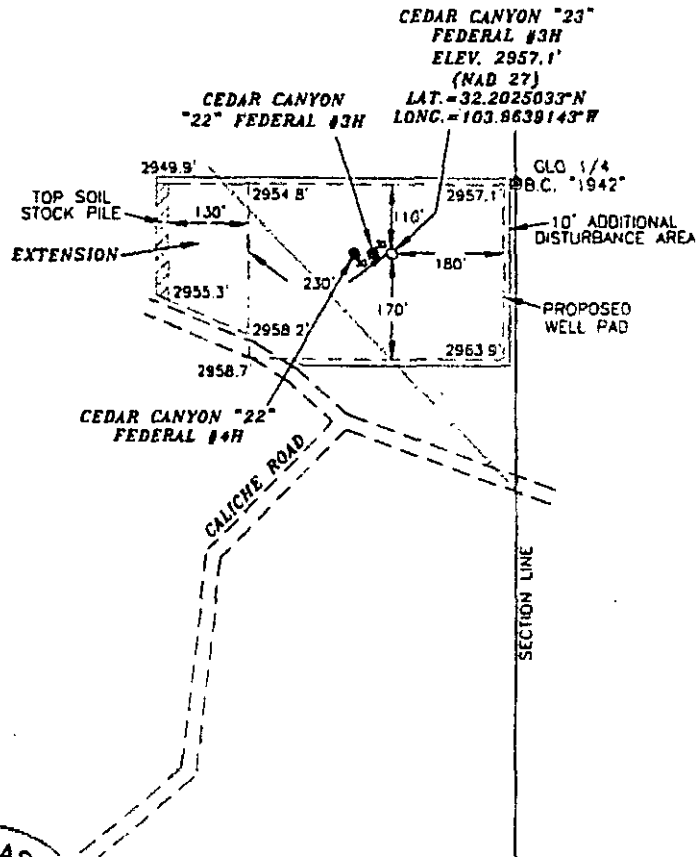
Depth	Mud WT	Vis Sec	Fluid Loss	Type
0-480'	8.4-8.8	28-38	NC	FW Gel
480-3075'	9.8-10	28-32	NC	NaCl Brine
3075-8170'	8.8-9.6	38-50	50-75cc/30min	EnerSeal (MMH)
8170'-TD	8.8-9.4	28-100	NC	Oil Based Mud

Remarks: 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. Oxy proposes to drill out the 10-3/4" surface casing shoe with a saturated brine system from 480-3075', which is the base of the salt system. At this point we will swap fluid systems to a high viscosity mixed metal hydroxide system and will drill with this system to the intermediate TD @ 8170'. We are also proposing to change the production mud system back to a oil based mud system.

WJ2# 151027W1-a (K)

Site Plan

OXY USA INC. CEDAR CANYON "23" FEDERAL #3H SITE PLAN



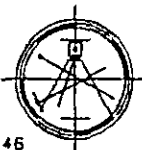
SURVEYORS CERTIFICATE

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 10/28/2015
Terry J. Asel N.M. R.P.L.S. No. 15079

Asel Surveying

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



LEGEND

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

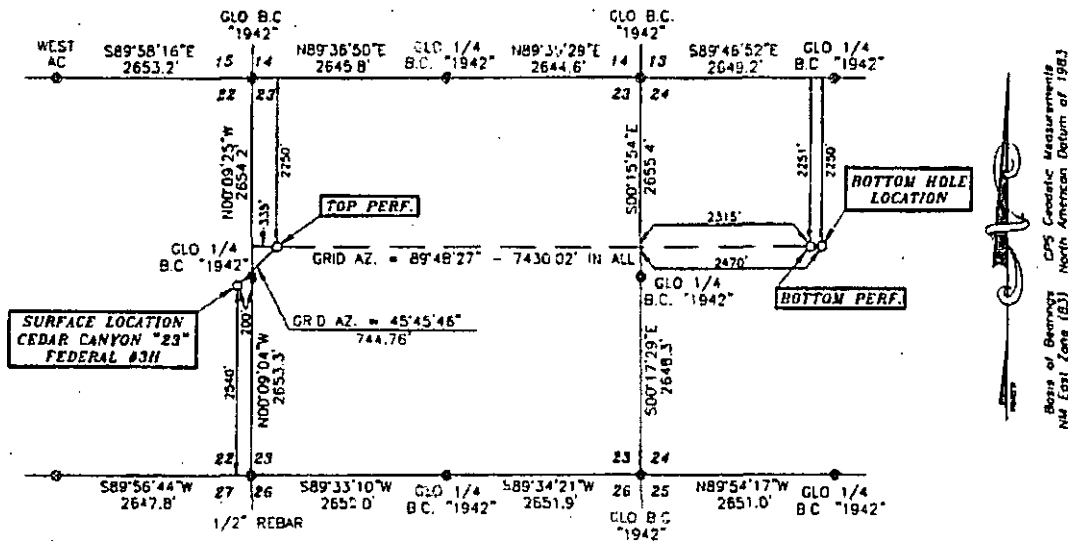
300' 0 300' 600' FEET
SCALE: 1"=300'

OXY USA INC.

CEDAR CANYON "23" FEDERAL #3H LOCATED
AT 2540' FSL & 200' FEL IN SECTION 22,
TOWNSHIP 24 SOUTH, RANGE 29 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 10/27/15	Sheet 1 of 1 Sheets
W.O. Number: 151027WL-a	Drawn By: KA Rev:
Date: 10/27/15	151027WL-a Scale: 1"=300'

SECTIONS 22, 23, & 24, 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 0.8 MILES, TURN LEFT ON COUNTY
ROAD #745 (HARROUN ROAD) AND GO
NORTH FOR 1.0 MILES, TURN RIGHT AND GO
EAST/NORTHEAST FOR 2.1 MILES, TURN
RIGHT ON DOG TOWN ROAD AND GO
SOUTHEAST FOR 1.3 MILES, TURN LEFT ON
CALICHE ROAD AND GO EAST/SOUTHEAST
FOR 2.1 MILES, CONTINUE SOUTH FOR 1.6
MILES, TURN LEFT AND GO NORTHEAST
THEN SOUTHEAST FOR 1.1 MILES TO
LOCATION



SURVEYORS CERTIFICATE

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

Terry J. Asel 10/20/2015
Terry J. Asel, N.M. R.P.L.S. No. 15079

Asel Surveying



P.O. BOX 393 - 310 W TAYLOR
HOBBS, NEW MEXICO - 575-393-8148

LEGEND

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

2000' 0 2000' 4000' FEET
SCALE 1"=2000'

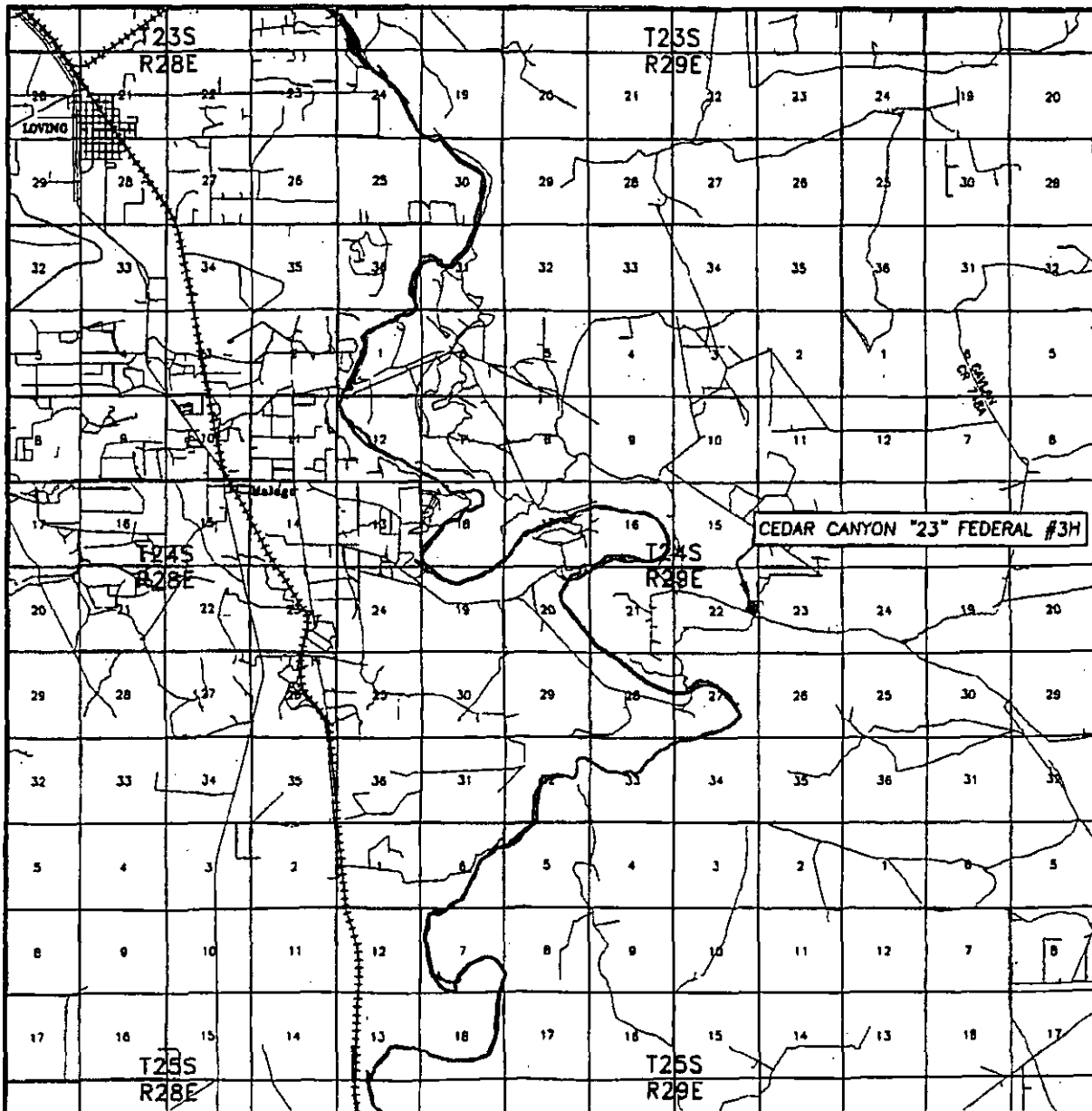
OXY USA INC.

CEDAR CANYON "23" FEDERAL #3H LOCATED
AT 2540' FSL & 200' FEL IN SECTION 22,
TOWNSHIP 24 SOUTH, RANGE 29 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 10/27/15	Sheet 1 of 1 Sheets
W.O. Number: 151027WL-a	Drawn By: KA Rev.
Date: 10/27/15	151027WL-a Scale: 1"=2000'

VM

VICINITY MAP

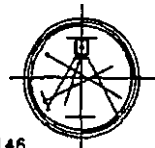


SEC. 22 TWP. 24-S RGE. 29-E
 SURVEY N.M.P.M.
 COUNTY EDDY
 DESCRIPTION 2540' FSL & 200' FEL
 ELEVATION 2957.1'
 OPERATOR OXY USA INC.

SCALE: 1" = 2 MILES

Asel Surveying

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

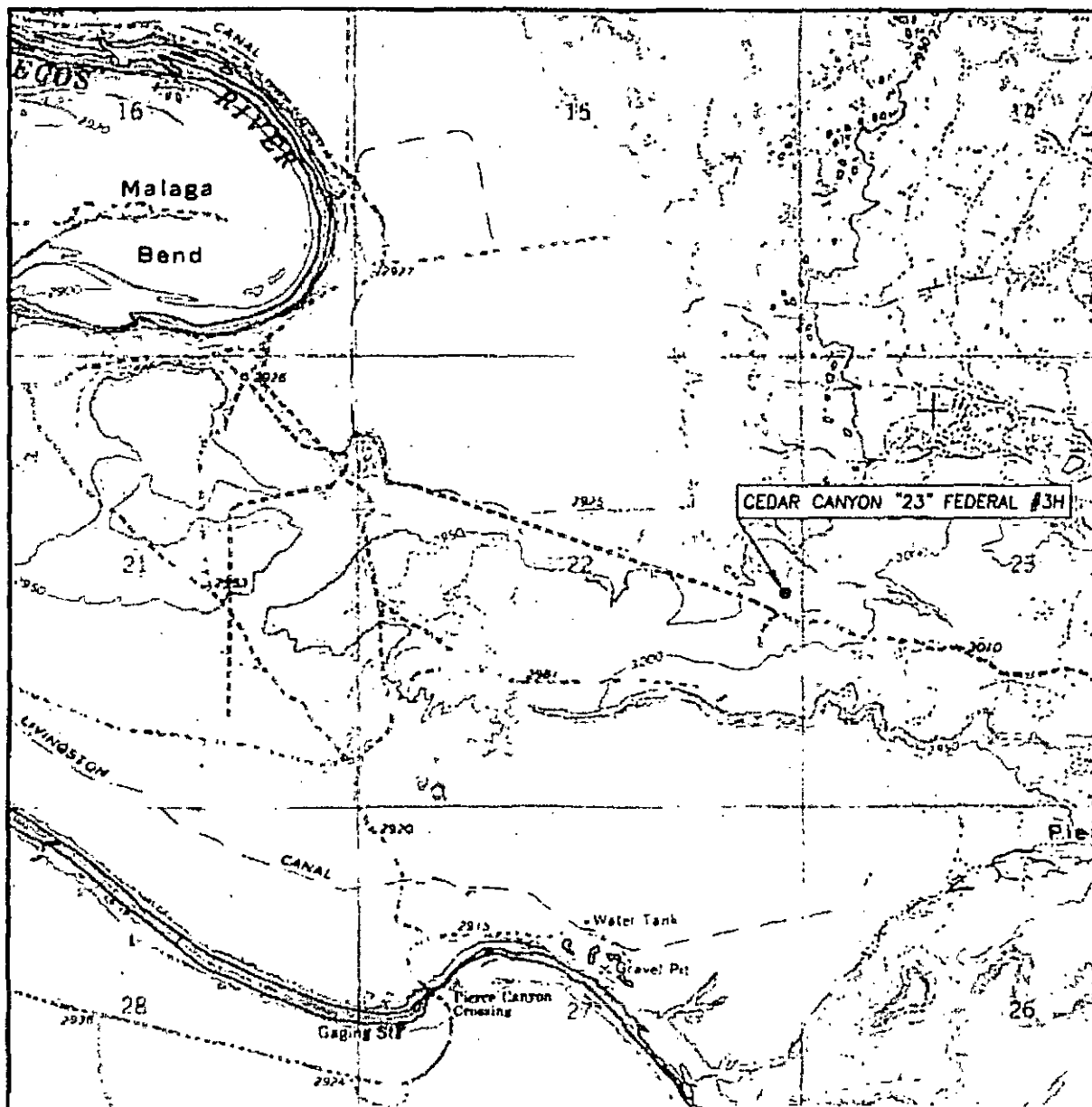


LEASE CEDAR CANYON "23" FEDERAL #3H

DIRECTIONS FROM THE INTERSECTION OF U.S. HWY. #285 AND BLACK RIVER VILLAGE ROAD IN MALAGA,
 GO EAST ON COUNTY ROAD #720 FOR 0.8 MILES, TURN LEFT ON COUNTY ROAD #745 (HARROUN
 ROAD) AND GO NORTH FOR 1.0 MILES, TURN RIGHT AND GO EAST/NORTHEAST FOR 2.1 MILES, TURN
 RIGHT ON DOG TOWN ROAD AND GO SOUTHEAST FOR 1.3 MILES, TURN LEFT ON CALICHE ROAD AND
 GO EAST/SOUTHEAST FOR 2.1 MILES, CONTINUE SOUTH FOR 1.6 MILES, TURN LEFT AND GO
 NORTHEAST THEN SOUTHEAST FOR 1.1 MILES TO LOCATION.

LVM

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 2540' FSL & 200' FEL

ELEVATION 2957.1'

OPERATOR OXY USA INC.

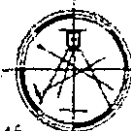
LEASE CEDAR CANYON "23" FEDERAL #3H

U.S.G.S. TOPOGRAPHIC MAP

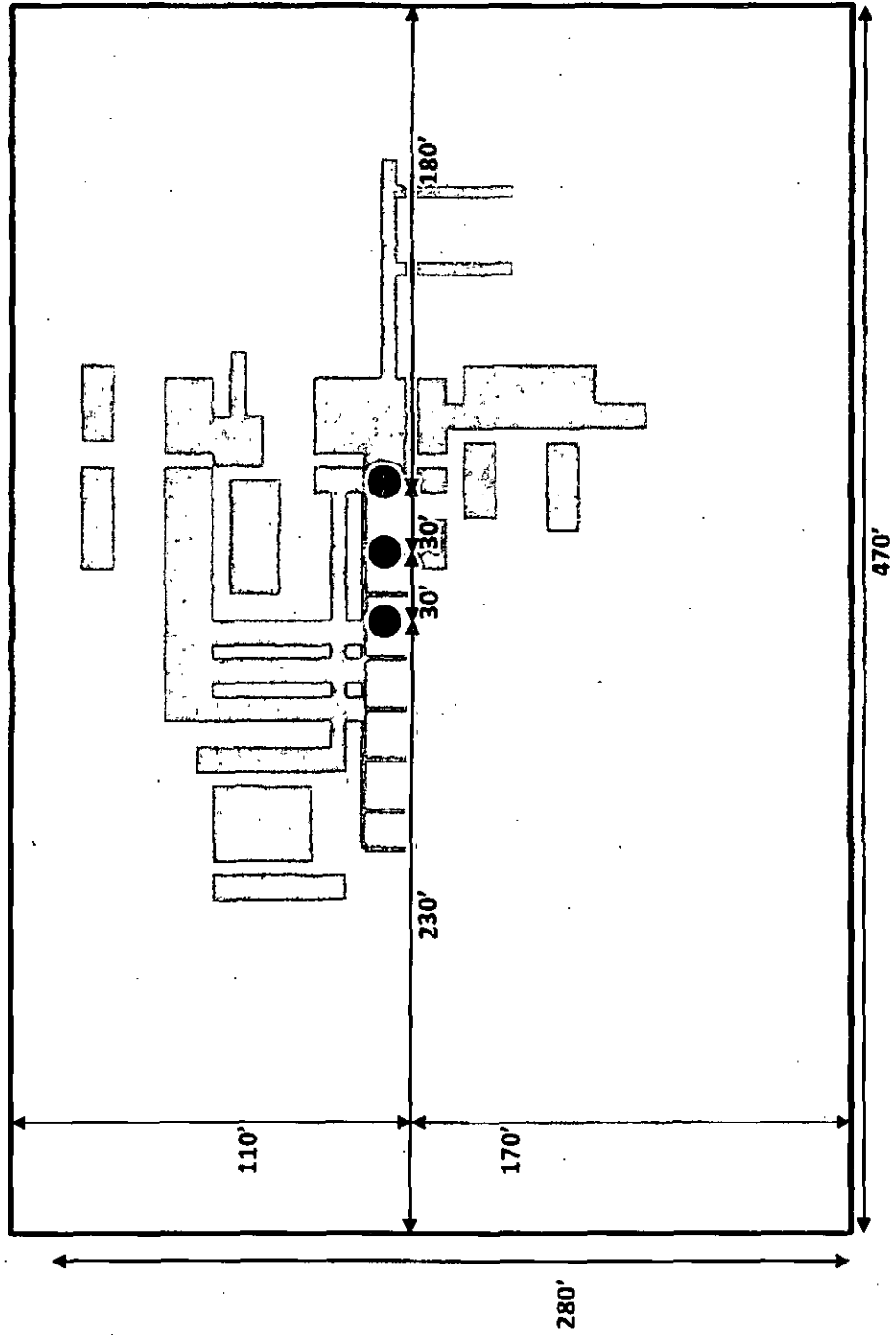
PIERCE CANYON, N.M.

Asel Surveying

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

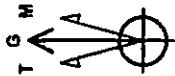


Pad Site Overall Rig Layout
3 Well Pad Site – Cedar Canyon 23 Fed #3H Pad



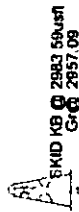


CEDAR CANYON 23 FEDERAL 3H
CEDAR CANYON
Northing: 437586.70
Easting: 614265.88
OXY PLAN #1



Azimuths to Grid North
True North: -0.20°
Magnetic North: 7.73°
Magnetic Field
Strength: 48739.25nT
Dip Angle: 60.15°
Date: 12/31/2009
Model: IGRF200510

To convert a Magnetic Direction to a Grid Direction, Add 7.73°
To convert a True Direction to a Grid Direction, Subtract 0.20°



EMID KB 2983 50u/sft
Grd 2957.09

3000
3500
4000
4500
5000
5500
6000
6500
7000
7500
8000
8500
9000
9500

WELL DETAILS
CEDAR CANYON 23 FEDERAL 3H

+N/S 0.00
MD 0.00
Inc 0.00
Azi 0.00
TVD 0.00
+E/W 0.00
Northing 437586.70
Easting 614265.88
Ground Level: 2957.09
Latitude 32.202503
Longitude -103.963814

SECTION DETAILS

MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	VSecl
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4999.99	0.00	0.00	4999.99	0.00	0.00	0.00	0.00	0.00
5474.82	11.87	24.21	5471.43	44.70	20.10	2.50	24.21	23.10
7767.57	11.87	24.21	7715.15	474.85	213.50	0.00	0.00	245.40
8242.39	0.00	0.00	8186.58	519.55	233.60	0.00	0.00	268.50
9290.91	88.99	89.81	8861.58	521.69	896.76	2.50	180.00	268.50
16358.83	88.99	89.81	8986.58	544.52	7983.54	0.00	0.00	7982.13

True Vertical Depth (1000 usft/m)

South(-)/North(+) (1200 usft/m)

West(-)/East(+) (1200 usft/m)

Vertical Section at 86.09° (1000 usft/m)

DESIGN TARGET DETAILS

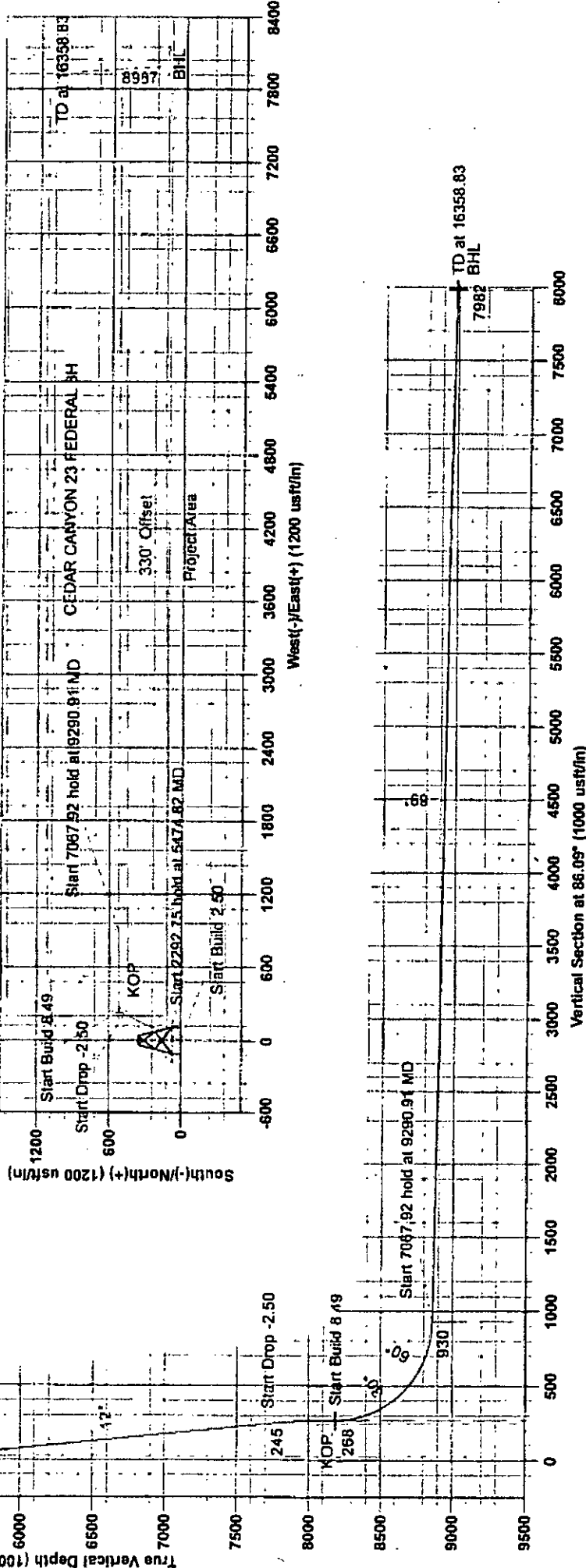
Name	TVD	+N/S	+E/W	Northing	Easting
Project Area	0.00	1440.22	196.10	439026.92	614461.98
330' Offset	2983.59	1440.22	196.10	439026.92	614461.98
KOP	8186.58	519.55	233.60	438106.25	614489.48
BHL	8986.58	544.52	7963.54	438131.22	622229.42

SITE DETAILS:

CEDAR CANYON 23
Site Centre Northing: 0.00
Easting: 0.00
Positional Uncertainty: 0.00
Convergence: -0.82
Local North: Grid

PROJECT DETAILS:

CEDAR CANYON
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level





Scientific Drilling Planning Report



DP-2

Database: CompassC
Company: OXY USA PERMIAN RESOURCES NM
Project: CEDAR CANYON
Site: CEDAR CANYON 23
Well: CEDAR CANYON 23 FEDERAL 3H
Wellbore: ORIG HOLE
Design: OXY PLAN #1

Local Co-ordinate Reference: Well CEDAR CANYON 23 FEDERAL 3H
TVD Reference: SKID KB @ 2983.59usft
MD Reference: SKID KB @ 2983.59usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	CEDAR CANYON, North America		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	CEDAR CANYON 23		
Site Position:	Map	Northing:	0.00 usft
From:		Easting:	0.00 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	30.990142
		Longitude:	-105.928927
		Grid Convergence:	-0.82'

Well	CEDAR CANYON 23 FEDERAL 3H		
Well Position	+N-S	437,586.70 usft	Northing:
	+E-W	614,265.88 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	2,957.09 usft
		Latitude:	32.202503
		Longitude:	-103.963915
		Ground Level:	

Wellbore	ORIG HOLE		
Magnetics	Model Name	Sample Date	Declination
	IGRF200510	12/31/09	7.93
			Dip Angle
			60.15
			Field Strength
			48,739

Design	OXY PLAN #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			86.09

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,999.99	0.00	0.00	4,999.99	0.00	0.00	0.00	0.00	0.00	0.00	
5,474.82	11.87	24.21	5,471.43	44.70	20.10	2.50	2.50	0.00	24.21	
7,767.57	11.87	24.21	7,715.15	474.85	213.50	0.00	0.00	0.00	0.00	
8,242.39	0.00	0.00	8,186.58	519.55	233.60	2.50	-2.50	0.00	180.00	KOP
9,290.91	88.99	89.81	8,861.58	521.69	896.76	8.49	8.49	0.00	89.81	
16,358.83	88.99	89.81	8,986.58	544.52	7,963.54	0.00	0.00	0.00	0.00	BHL



Scientific Drilling

Planning Report



Scientific Drilling

Database: CompassC
 Company: OXY USA PERMIAN RESOURCES NM
 Project: CEDAR CANYON
 Site: CEDAR CANYON 23
 Well: CEDAR CANYON 23 FEDERAL 3H
 Wellbore: ORIG HOLE
 Design: OXY PLAN #1

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:

Well CEDAR CANYON 23 FEDERAL 3H
 SKID KB @ 2983.59usft
 SKID KB @ 2983.59usft
 Grid
 Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,999.99	0.00	0.00	4,999.99	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	2.50	24.21	5,099.97	1.99	0.89	1.03	2.50	2.50	0.00
5,200.00	5.00	24.21	5,199.75	7.95	3.58	4.11	2.50	2.50	0.00
5,300.00	7.50	24.21	5,299.14	17.88	8.04	9.24	2.50	2.50	0.00



Scientific Drilling Planning Report



Database: CompassC
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Site: CEDAR CANYON 23
Well: CEDAR CANYON 23 FEDERAL 3H
Wellbore: ORIG HOLE
Design: OXY PLAN #1

Local Co-ordinate Reference:
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MD Reference:
North Reference:
Survey Calculation Method:

Well CEDAR CANYON 23 FEDERAL 3H
SKID KB @ 2883.59usft
SKID KB @ 2883.59usft
Grid
Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.00	10.00	24.21	5,397.97	31.78	14.28	16.41	2.50	2.50	0.00
5,474.82	11.87	24.21	5,471.43	44.70	20.10	23.10	2.50	2.50	0.00
5,500.00	11.87	24.21	5,498.07	48.43	22.22	25.54	0.00	0.00	0.00
5,600.00	11.87	24.21	5,593.93	68.19	30.66	35.24	0.00	0.00	0.00
5,700.00	11.87	24.21	5,691.79	66.95	39.09	44.93	0.00	0.00	0.00
5,800.00	11.87	24.21	5,789.86	105.71	47.53	54.63	0.00	0.00	0.00
5,900.00	11.87	24.21	5,887.52	124.47	55.96	64.33	0.00	0.00	0.00
6,000.00	11.87	24.21	5,985.38	143.23	64.40	74.02	0.00	0.00	0.00
6,100.00	11.87	24.21	6,083.24	161.99	72.84	83.72	0.00	0.00	0.00
6,200.00	11.87	24.21	6,181.10	180.75	81.27	93.41	0.00	0.00	0.00
6,300.00	11.87	24.21	6,278.96	199.52	89.71	103.11	0.00	0.00	0.00
6,400.00	11.87	24.21	6,376.82	218.28	98.14	112.80	0.00	0.00	0.00
6,500.00	11.87	24.21	6,474.69	237.04	106.58	122.50	0.00	0.00	0.00
6,600.00	11.87	24.21	6,572.55	255.80	115.01	132.19	0.00	0.00	0.00
6,700.00	11.87	24.21	6,670.41	274.56	123.45	141.89	0.00	0.00	0.00
6,800.00	11.87	24.21	6,768.27	293.32	131.88	151.59	0.00	0.00	0.00
6,900.00	11.87	24.21	6,866.13	312.08	140.32	161.28	0.00	0.00	0.00
7,000.00	11.87	24.21	6,963.99	330.84	148.75	170.98	0.00	0.00	0.00
7,100.00	11.87	24.21	7,061.86	349.60	157.19	180.67	0.00	0.00	0.00
7,200.00	11.87	24.21	7,159.72	368.37	165.62	190.37	0.00	0.00	0.00
7,300.00	11.87	24.21	7,257.58	387.13	174.06	200.08	0.00	0.00	0.00
7,400.00	11.87	24.21	7,355.44	405.89	182.50	209.76	0.00	0.00	0.00
7,500.00	11.87	24.21	7,453.30	424.65	190.93	219.45	0.00	0.00	0.00
7,600.00	11.87	24.21	7,551.16	443.41	199.37	229.15	0.00	0.00	0.00
7,700.00	11.87	24.21	7,649.02	462.17	207.80	238.85	0.00	0.00	0.00
7,767.57	11.87	24.21	7,715.15	474.85	213.50	245.40	0.00	0.00	0.00
7,800.00	11.06	24.21	7,746.93	480.73	216.14	248.44	2.50	-2.50	0.00
7,900.00	6.56	24.21	7,845.46	496.27	223.13	256.47	2.50	-2.50	0.00
8,000.00	6.06	24.21	7,944.64	507.87	228.35	262.46	2.50	-2.50	0.00
8,100.00	3.56	24.21	8,044.28	515.52	231.79	266.41	2.50	-2.50	0.00
8,200.00	1.06	24.21	8,144.19	519.19	233.44	268.31	2.50	-2.50	0.00
8,242.39	0.00	0.00	8,186.58	519.55	233.60	268.50	2.50	-2.50	0.00
8,250.00	0.65	89.81	8,194.19	519.55	233.64	268.54	8.49	8.49	0.00
8,300.00	4.89	89.81	8,244.12	519.58	236.06	270.95	8.49	8.49	0.00
8,350.00	9.13	89.81	8,293.73	519.58	242.16	277.04	8.49	8.49	0.00
8,400.00	13.38	89.81	8,342.76	519.61	251.91	286.77	8.49	8.49	0.00
8,450.00	17.62	89.81	8,390.93	519.65	265.27	300.10	8.49	8.49	0.00
8,500.00	21.86	89.81	8,437.98	519.71	282.15	316.95	8.49	8.49	0.00
8,550.00	26.11	89.81	8,483.68	519.77	302.47	337.23	8.49	8.49	0.00
8,600.00	30.35	89.81	8,527.70	519.85	328.12	360.82	8.49	8.49	0.00
8,650.00	34.59	89.81	8,569.87	519.94	352.96	387.60	8.49	8.49	0.00
8,700.00	38.84	89.81	8,609.94	520.03	382.84	417.42	8.49	8.49	0.00
8,750.00	43.08	89.81	8,647.69	520.14	415.81	450.12	8.49	8.49	0.00
8,800.00	47.32	89.81	8,682.92	520.25	451.08	485.52	8.49	8.49	0.00
8,850.00	51.57	89.81	8,715.42	520.38	489.06	523.42	8.49	8.49	0.00
8,900.00	55.81	89.81	8,745.02	520.51	529.34	563.62	8.49	8.49	0.00
8,950.00	60.05	89.81	8,771.56	520.64	571.70	605.89	8.49	8.49	0.00
9,000.00	64.30	89.81	8,794.89	520.78	615.91	650.00	8.49	8.49	0.00
9,050.00	68.54	89.81	8,814.89	520.93	661.73	695.72	8.49	8.49	0.00
9,100.00	72.78	89.81	8,831.44	521.09	708.89	742.79	8.49	8.49	0.00
9,150.00	77.03	89.81	8,844.48	521.24	757.18	790.95	8.49	8.49	0.00
9,200.00	81.27	89.81	8,853.87	521.40	806.25	839.84	8.49	8.49	0.00
9,250.00	85.51	89.81	8,859.62	521.56	855.91	889.49	8.49	8.49	0.00
9,290.91	88.89	89.81	8,861.58	521.69	898.76	930.28	8.49	8.49	0.00



Scientific Drilling Planning Report



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Well: CEDAR CANYON 23 FEDERAL 3H
Wellbore: ORIG HOLE
Design: OXY PLAN #1

Local Co-ordinate Reference:
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MD Reference:
North Reference:
Survey Calculation Method:

Well CEDAR CANYON 23 FEDERAL 3H
SKID KB @ 2983.59usft
SKID KB @ 2983.59usft
Grid
Minimum Curvature

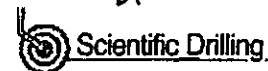
Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,300.00	88.99	89.81	8,861.74	521.72	905.85	939.33	0.00	0.00	0.00
9,400.00	88.99	89.81	8,863.51	522.04	1,005.84	1,039.11	0.00	0.00	0.00
9,500.00	88.99	89.81	8,865.28	522.37	1,105.82	1,138.88	0.00	0.00	0.00
9,600.00	88.99	89.81	8,867.05	522.69	1,205.81	1,238.65	0.00	0.00	0.00
9,700.00	88.99	89.81	8,868.82	523.01	1,305.79	1,338.43	0.00	0.00	0.00
9,800.00	88.99	89.81	8,870.59	523.34	1,405.77	1,438.20	0.00	0.00	0.00
9,900.00	88.99	89.81	8,872.35	523.68	1,505.76	1,537.97	0.00	0.00	0.00
10,000.00	88.99	89.81	8,874.12	523.88	1,605.74	1,637.74	0.00	0.00	0.00
10,100.00	88.99	89.81	8,875.89	524.31	1,705.72	1,737.52	0.00	0.00	0.00
10,200.00	88.99	89.81	8,877.66	524.63	1,805.71	1,837.29	0.00	0.00	0.00
10,300.00	88.99	89.81	8,879.43	524.95	1,905.69	1,937.06	0.00	0.00	0.00
10,400.00	88.99	89.81	8,881.20	525.27	2,005.68	2,036.84	0.00	0.00	0.00
10,500.00	88.99	89.81	8,882.97	525.80	2,105.66	2,136.61	0.00	0.00	0.00
10,600.00	88.99	89.81	8,884.73	525.92	2,205.64	2,236.38	0.00	0.00	0.00
10,700.00	88.99	89.81	8,886.50	526.24	2,305.63	2,336.16	0.00	0.00	0.00
10,800.00	88.99	89.81	8,888.27	526.57	2,405.61	2,435.93	0.00	0.00	0.00
10,900.00	88.99	89.81	8,890.04	526.89	2,505.60	2,535.70	0.00	0.00	0.00
11,000.00	88.99	89.81	8,891.81	527.21	2,605.58	2,635.47	0.00	0.00	0.00
11,100.00	88.99	89.81	8,893.58	527.54	2,705.56	2,735.25	0.00	0.00	0.00
11,200.00	88.99	89.81	8,895.35	527.86	2,805.55	2,835.02	0.00	0.00	0.00
11,300.00	88.99	89.81	8,897.11	528.18	2,905.53	2,934.79	0.00	0.00	0.00
11,400.00	88.99	89.81	8,898.88	528.50	3,005.51	3,034.57	0.00	0.00	0.00
11,500.00	88.99	89.81	8,900.65	528.83	3,105.50	3,134.34	0.00	0.00	0.00
11,600.00	88.99	89.81	8,902.42	529.15	3,205.48	3,234.11	0.00	0.00	0.00
11,700.00	88.99	89.81	8,904.19	529.47	3,305.47	3,333.89	0.00	0.00	0.00
11,800.00	88.99	89.81	8,905.96	529.80	3,405.45	3,433.66	0.00	0.00	0.00
11,900.00	88.99	89.81	8,907.73	530.12	3,505.43	3,533.43	0.00	0.00	0.00
12,000.00	88.99	89.81	8,909.49	530.44	3,605.42	3,633.20	0.00	0.00	0.00
12,100.00	88.99	89.81	8,911.26	530.76	3,705.40	3,732.98	0.00	0.00	0.00
12,200.00	88.99	89.81	8,913.03	531.08	3,805.39	3,832.75	0.00	0.00	0.00
12,300.00	88.99	89.81	8,914.80	531.41	3,905.37	3,932.52	0.00	0.00	0.00
12,400.00	88.99	89.81	8,916.57	531.73	4,005.35	4,032.30	0.00	0.00	0.00
12,500.00	88.99	89.81	8,918.34	532.06	4,105.34	4,132.07	0.00	0.00	0.00
12,600.00	88.99	89.81	8,920.11	532.38	4,205.32	4,231.84	0.00	0.00	0.00
12,700.00	88.99	89.81	8,921.87	532.70	4,305.30	4,331.61	0.00	0.00	0.00
12,800.00	88.99	89.81	8,923.64	533.03	4,405.29	4,431.39	0.00	0.00	0.00
12,900.00	88.99	89.81	8,925.41	533.35	4,505.27	4,531.16	0.00	0.00	0.00
13,000.00	88.99	89.81	8,927.18	533.67	4,605.26	4,630.93	0.00	0.00	0.00
13,100.00	88.99	89.81	8,928.95	533.99	4,705.24	4,730.71	0.00	0.00	0.00
13,200.00	88.99	89.81	8,930.72	534.32	4,805.22	4,830.48	0.00	0.00	0.00
13,300.00	88.99	89.81	8,932.49	534.64	4,905.21	4,930.25	0.00	0.00	0.00
13,400.00	88.99	89.81	8,934.25	534.96	5,005.19	5,030.03	0.00	0.00	0.00
13,500.00	88.99	89.81	8,936.02	535.29	5,105.18	5,129.80	0.00	0.00	0.00
13,600.00	88.99	89.81	8,937.79	535.61	5,205.16	5,229.57	0.00	0.00	0.00
13,700.00	88.99	89.81	8,939.56	535.93	5,305.14	5,329.34	0.00	0.00	0.00
13,800.00	88.99	89.81	8,941.33	536.26	5,405.13	5,429.12	0.00	0.00	0.00
13,900.00	88.99	89.81	8,943.10	536.58	5,505.11	5,528.89	0.00	0.00	0.00
14,000.00	88.99	89.81	8,944.87	536.90	5,605.09	5,628.66	0.00	0.00	0.00
14,100.00	88.99	89.81	8,946.63	537.22	5,705.08	5,728.44	0.00	0.00	0.00
14,200.00	88.99	89.81	8,948.40	537.55	5,805.06	5,828.21	0.00	0.00	0.00
14,300.00	88.99	89.81	8,950.17	537.87	5,905.05	5,927.98	0.00	0.00	0.00
14,400.00	88.99	89.81	8,951.94	538.19	6,005.03	6,027.76	0.00	0.00	0.00
14,500.00	88.99	89.81	8,953.71	538.52	6,105.01	6,127.53	0.00	0.00	0.00
14,600.00	88.99	89.81	8,955.48	538.84	6,205.00	6,227.30	0.00	0.00	0.00



Scientific Drilling

Planning Report



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Well CEDAR CANYON 23 FEDERAL 3H
 SKID KB @ 2983.59usft
 SKID KB @ 2983.59usft
 Grid
 Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,700.00	88.99	89.81	8,957.25	539.16	6,304.98	6,327.07	0.00	0.00	0.00
14,800.00	88.99	89.81	8,959.01	539.48	6,404.97	6,428.85	0.00	0.00	0.00
14,900.00	88.99	89.81	8,960.78	539.81	6,504.95	6,526.82	0.00	0.00	0.00
15,000.00	88.99	89.81	8,962.55	540.13	6,604.93	6,626.39	0.00	0.00	0.00
15,100.00	88.99	89.81	8,964.32	540.45	6,704.92	6,726.17	0.00	0.00	0.00
15,200.00	88.99	89.81	8,966.09	540.78	6,804.90	6,825.94	0.00	0.00	0.00
15,300.00	88.99	89.81	8,967.86	541.10	6,904.88	6,925.71	0.00	0.00	0.00
15,400.00	88.99	89.81	8,969.62	541.42	7,004.87	7,025.48	0.00	0.00	0.00
15,500.00	88.99	89.81	8,971.39	541.75	7,104.85	7,125.26	0.00	0.00	0.00
15,600.00	88.99	89.81	8,973.16	542.07	7,204.84	7,225.03	0.00	0.00	0.00
15,700.00	88.99	89.81	8,974.93	542.39	7,304.82	7,324.80	0.00	0.00	0.00
15,800.00	88.99	89.81	8,976.70	542.72	7,404.80	7,424.58	0.00	0.00	0.00
15,900.00	88.99	89.81	8,978.47	543.04	7,504.79	7,524.35	0.00	0.00	0.00
16,000.00	88.99	89.81	8,980.24	543.36	7,604.77	7,624.12	0.00	0.00	0.00
16,100.00	88.99	89.81	8,982.00	543.68	7,704.76	7,723.90	0.00	0.00	0.00
16,200.00	88.99	89.81	8,983.77	544.01	7,804.74	7,823.67	0.00	0.00	0.00
16,300.00	88.99	89.81	8,985.54	544.33	7,904.72	7,923.44	0.00	0.00	0.00
16,358.83	88.99	89.81	8,986.58	544.52	7,963.54	7,982.13	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Project Area	0.00	0.00	0.00	1,440.22	196.11	439,026.92	614,461.99	32.206461	-103.963265
- plan misses target center by 1453.51usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	0.00	-0.01	439,026.92	614,461.98		
Point 2			0.00	36.10	5,292.74	439,063.02	619,754.73		
Point 3			0.00	28.11	7,942.64	439,055.03	622,404.63		
Point 4			0.00	-1,297.40	7,949.51	437,729.52	622,411.50		
Point 5			0.00	-1,291.55	5,298.84	437,735.37	619,760.83		
Point 6			0.00	-1,327.04	3.60	437,699.88	614,465.59		
Point 7			0.00	0.00	-0.01	439,026.92	614,461.98		
330' Offset	0.00	0.00	2,983.59	1,440.22	196.10	439,026.92	614,461.98	32.206461	-103.963265
- plan misses target center by 1453.51usft at 2983.59usft MD (2983.59 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			2,983.59	-328.63	329.66	438,698.29	614,791.64		
Point 2			2,983.59	-294.78	5,292.67	438,732.14	619,754.65		
Point 3			2,983.59	-301.78	7,613.11	438,725.14	622,075.10		
Point 4			2,983.59	-987.54	7,616.56	438,059.38	622,078.55		
Point 5			2,983.59	-962.43	5,298.37	438,054.49	619,758.35		
Point 6			2,983.59	-995.70	331.47	438,031.22	614,793.45		
Point 7			2,983.59	-328.63	329.66	438,698.29	614,791.64		
Point 8			2,983.59	-328.63	329.66	438,698.29	614,791.64		
Point 9			2,983.59	-328.63	329.66	438,698.29	614,791.64		
KOP	0.00	0.00	8,186.58	519.55	233.60	438,106.25	614,499.48	32.203929	-103.963154
- plan hits target center									
- Point									
BHL	0.00	0.01	8,986.58	544.52	7,963.54	438,131.22	622,229.42	32.203922	-103.938163
- plan hits target center									
- Point									

OXY USA Inc.
Cedar Canyon 23 Federal

Casing Design Assumptions:

Burst Loads

CSG Test (Surface)

- Internal: Displacement fluid + 70% CSG Burst rating
- External: Pore Pressure from section TD to surface

CSG Test (Intermediate)

- Internal: Displacement fluid + 70% CSG Burst rating
- External: Pore Pressure from the Intermediate hole TD to Surface CSG shoe and MW of the drilling mud that was in the hole when the CSG was run to surface

CSG Test (Production)

- Internal: Fresh water displacement fluid + 80% CSG Burst rating
- External: Pore Pressure from the well TD the Intermediate CSG shoe and MW of the drilling mud that was in the hole when the CSG was run to surface

Gas Kick (Surface/Intermediate)

- Internal: Gas Kick based on Pore Pressure or Fracture Gradient @ CSG shoe with a gas 0.115psi/ft Gas gradient to surface while drilling the next hole section (e.g. Gas Kick while drilling the production hole section is a burst load used to design the intermediate CSG)
- External: Pore Pressure from section TD to previous CSG shoe and MW of the drilling mud that was in the hole when the CSG was run to surface

Stimulation (Production)

- Internal: Displacement fluid + Max Frac treating pressure (not to exceed 80% CSG Burst rating)
- External: Pore Pressure from the well TD to the Intermediate CSG shoe and 8.5 ppg MWE to surface

Collapse Loads

Lost Circulation (Surface/Intermediate)

- Internal: Losses experienced while drilling the next hole section (e.g. losses while drilling the production hole section are used as a collapse load to design the intermediate CSG). After losses there will be a column of mud inside the CSG with an equivalent weight to the Pore Pressure of the lost circulation zone
- External: MW of the drilling mud that was in the hole when the CSG was run

Cementing (Surface/Intermediate/Production)

- Internal: Displacement Fluid
- External: Cement Slurries to TOC, MW to surface

Full Evacuation (Production)

- Internal: Atmospheric Pressure
- External: MW of the drilling mud that was in the hole when the CSG was run

Tension Loads

Running CSG (Surface/Intermediate/Production)

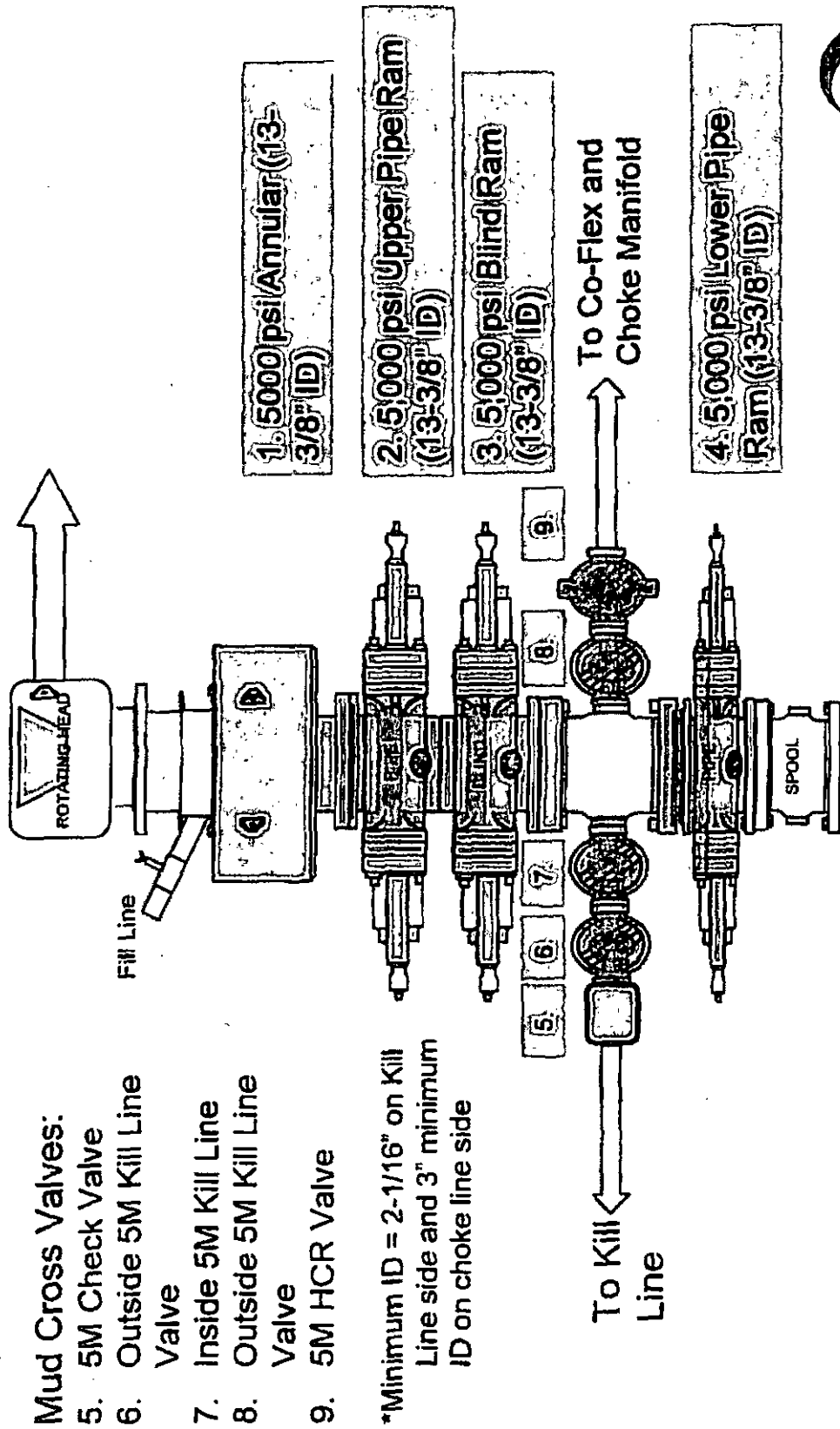
- Axial load of the buoyant weight of the string plus either 100 klb over-pull or string weight in air, whichever is less

Green Cement (Surface/Intermediate/Production)

- Axial load of the buoyant weight of the string plus the cement plug bump pressure (Final displacement pressure + 500 psi)

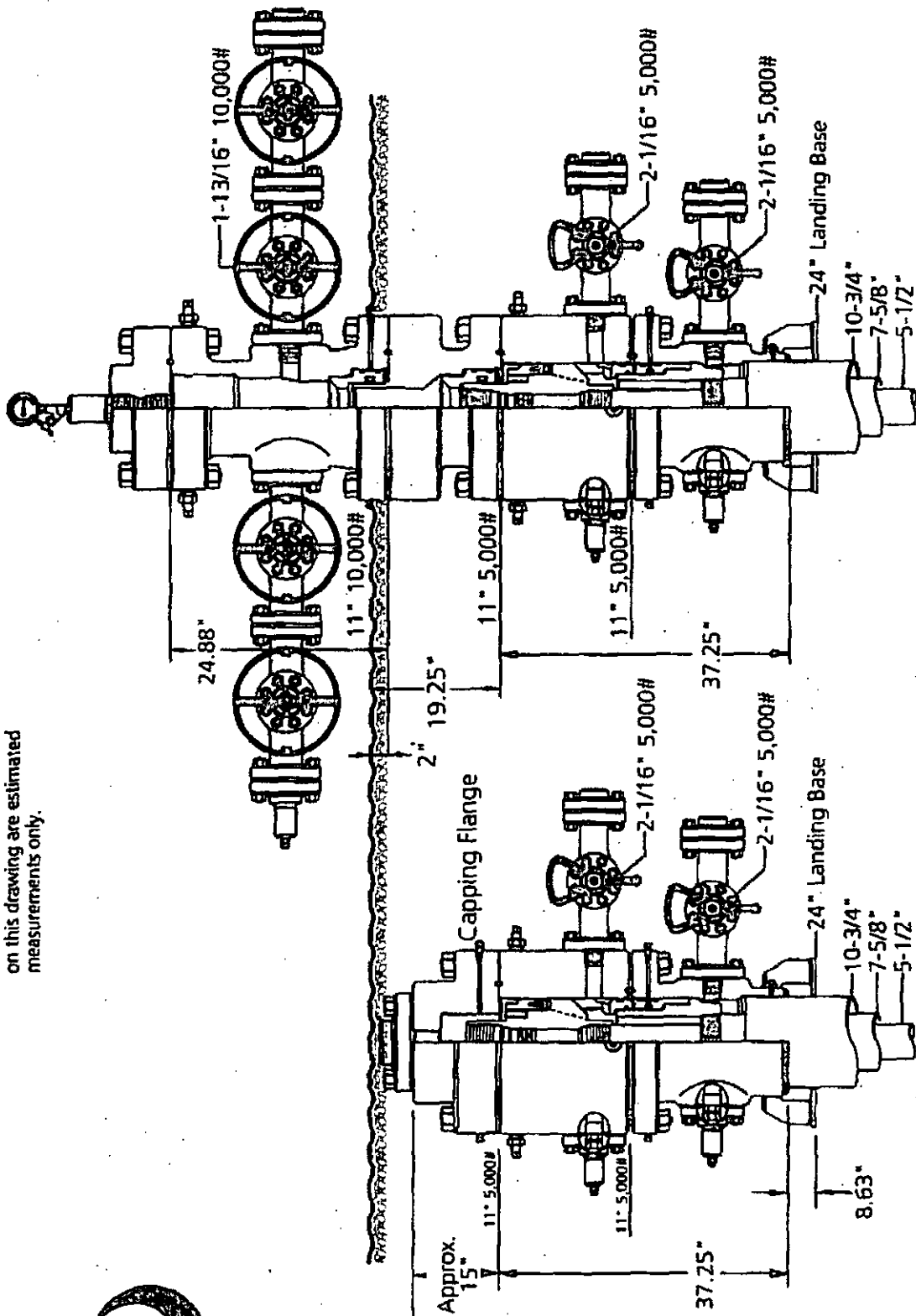
Burst, Collapse and Tensile SF are calculated using Landmark's Stress Check (Casing Design) software.

5M BOP Stack



Wellhead

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

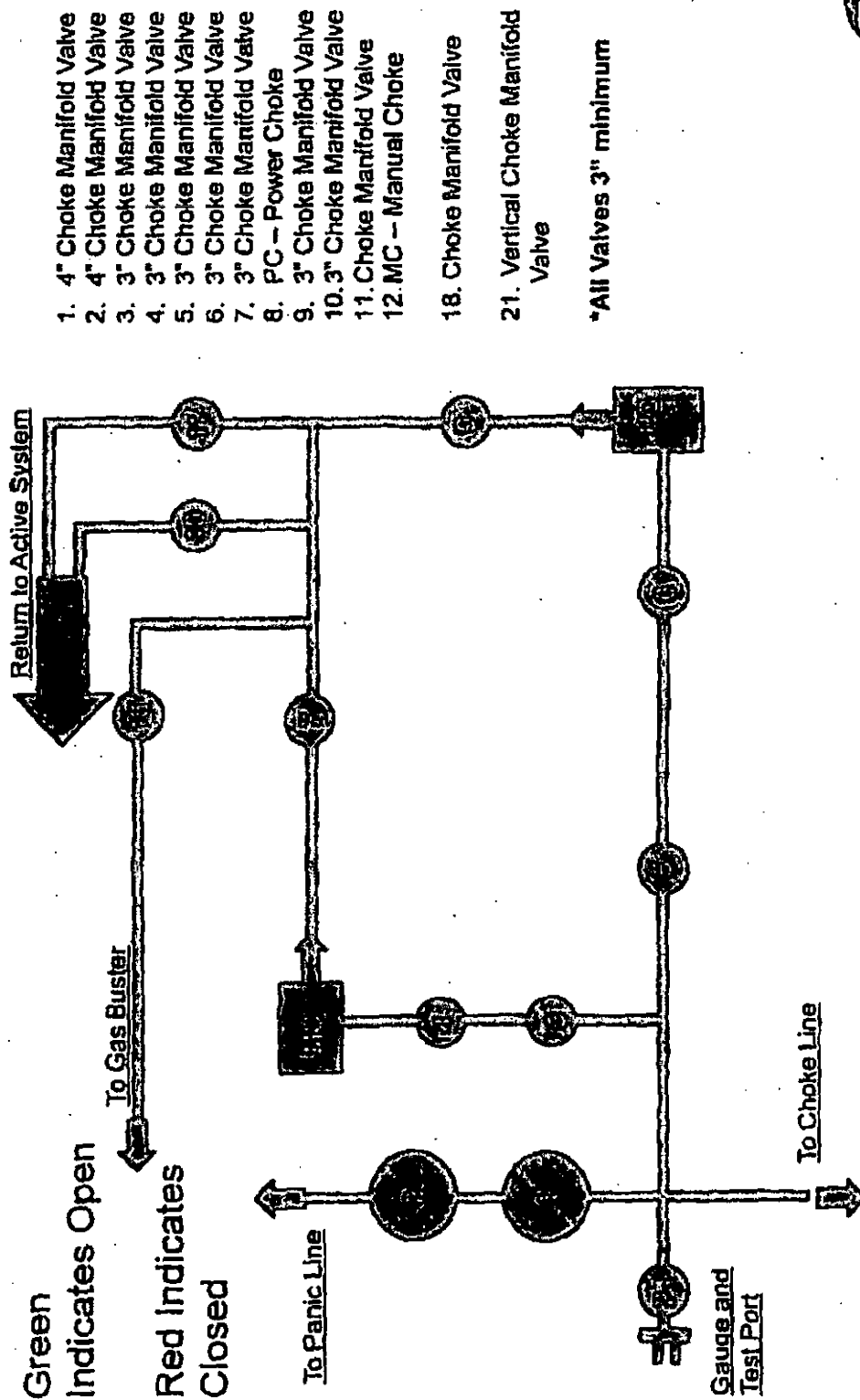


11" 10K MBS w/ 5.5" Mandrel



Jeanette	8-5-15	#	J-9579-4
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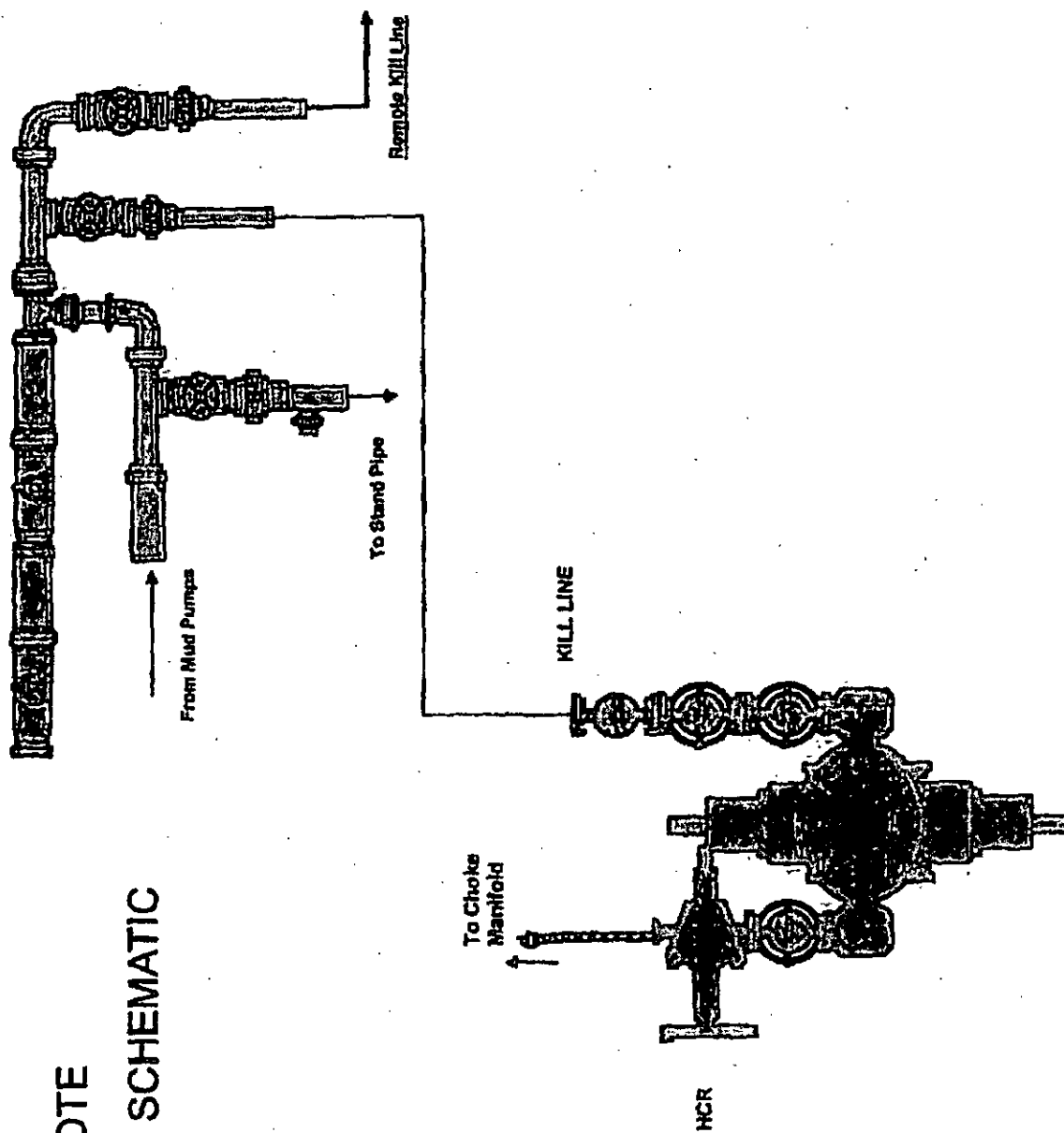
5M Choke Panel



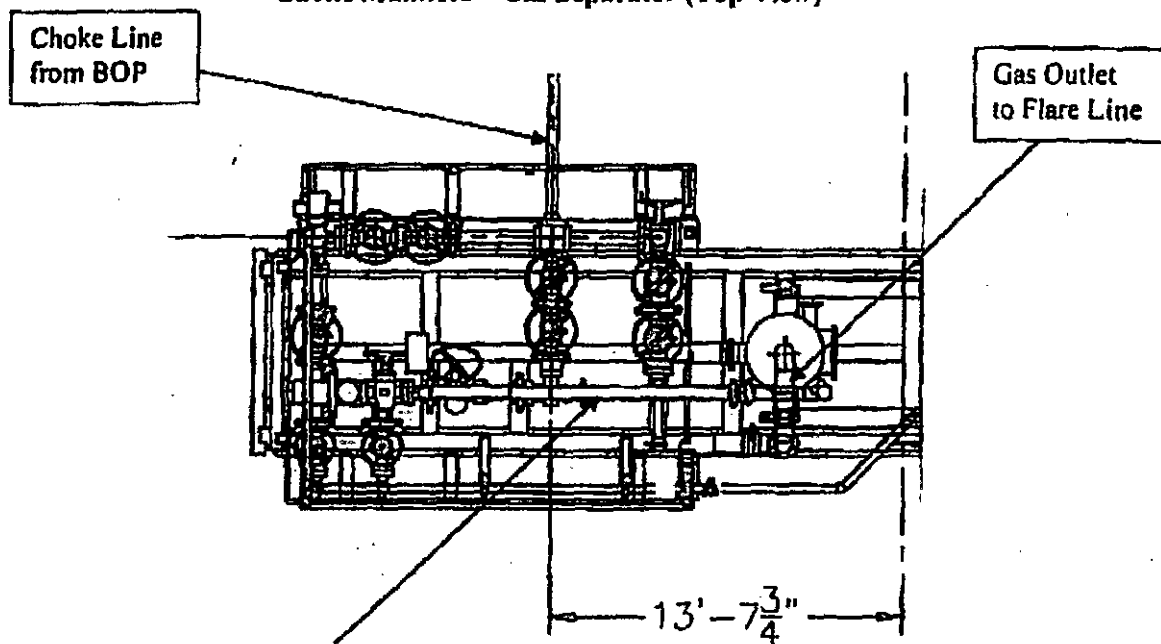
Choke Manifold-1



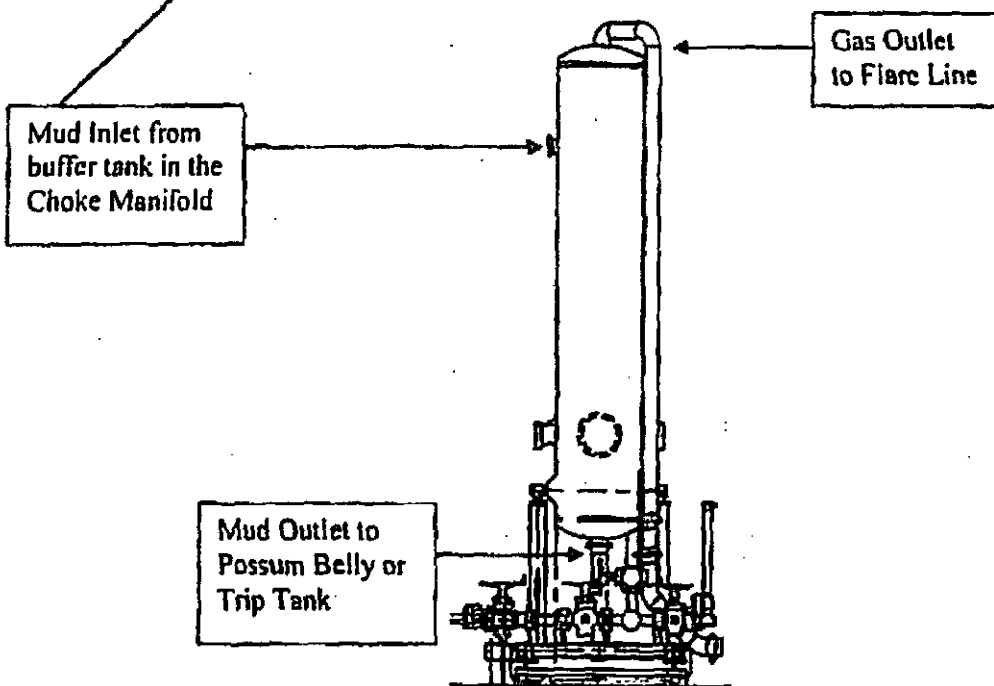
10M REMOTE KILL LINE SCHEMATIC



Choke Manifold - Gas Separator (Top View)

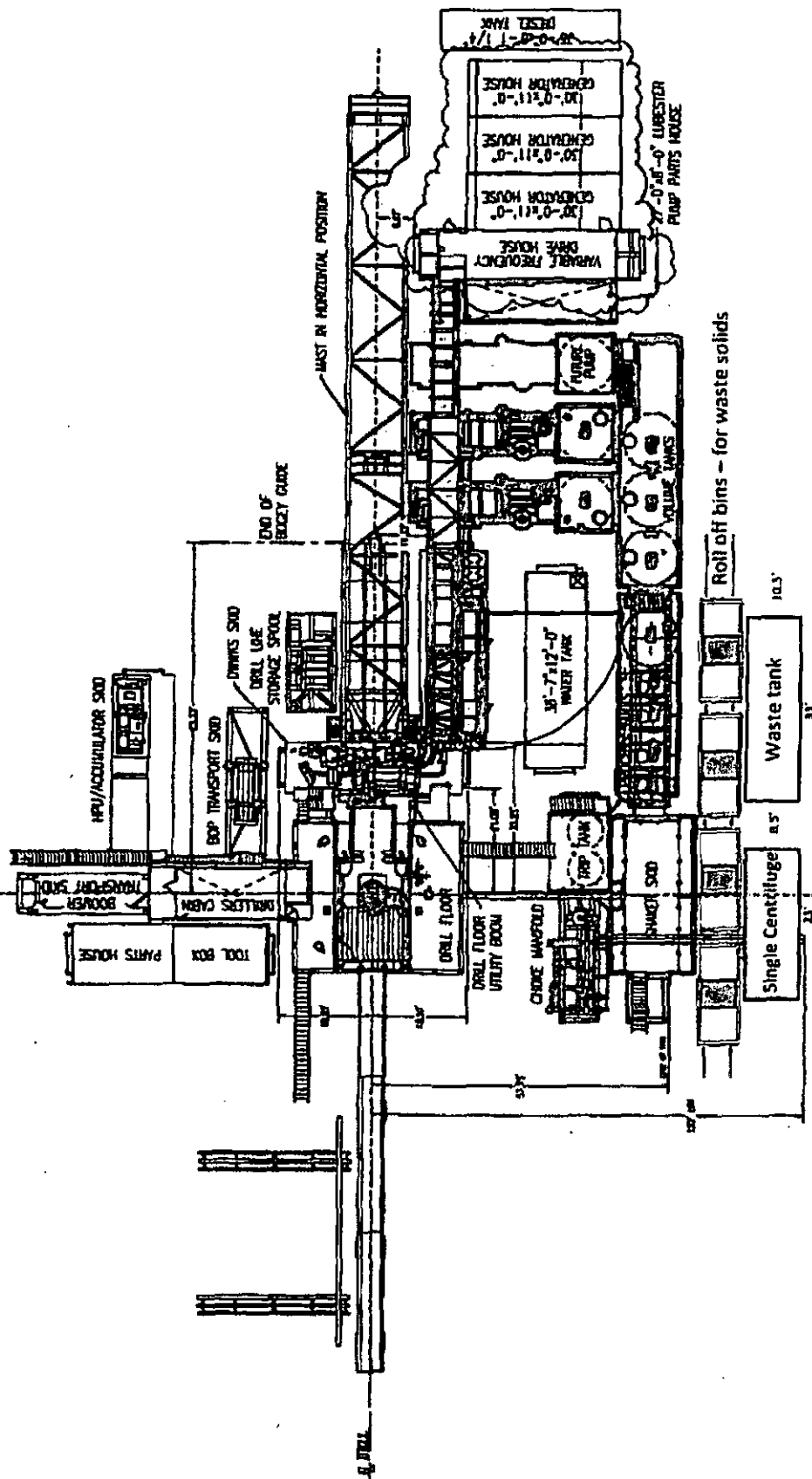


Choke Manifold - Gas Separator (Side View)



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

Closed Loop -1



CL-2



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

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	OXY USA Inc
LEASE NO.:	NM81586
WELL NAME & NO.:	Cedar Canyon 23 Fed Com 3H
SURFACE HOLE FOOTAGE:	2540'/S & 200'/E Sec. 22
BOTTOM HOLE FOOTAGE:	2260'/S & 2460'/W Sec. 24
LOCATION:	Section 24, T. 24 S., R. 29 E., NMPM
COUNTY:	Eddy County, New Mexico

A. 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 nipped 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.

Possible lost circulation in Rustler, Salado and Delaware.

1. The 10 3/4 inch surface casing shall be set at approximately 480 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, **which shall be set in the basal anhydrite of the Castile formation at approximately 3050', 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 a contingency DV tool at 3075'. If operator circulates cement on the first stage, operator is approved to inflate the ACP and run the DV tool cancellation plug and cancel the second stage of the proposed cement plan. If cement does not circulate, operator will inflate ACP and proceed with the second stage.

- 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.

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.

CRW 103015