HAND DELIVERED 10-30-13

orm 3160-3
March 2012)

UNORTHODOX LOCATION

OCD Hobbs

HOBBS OCD

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER DEC 23 2013

RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

5. Lease Serial No.
NMNM006413

6. If Indian, Allotee or Tribe Name

a. Type of Work: ☑ DRILL ☐ REENTER

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

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

8. Lease Name and Well No. <39460>
Prickly Pear 6 Federal #2H

Name of Operator
COG Operating LLC. <229137>

9. API Well No.
30-025-41572

Address
2208 West Main Street
Artesia, NM 88210

3b. Phone No. *(include area code)*
575-748-6940

10. Field and Pool, or Exploratory <97983>
WC-025 G-08 S203506D; Bone Spring

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

At surface 190' FNL & 1790' FEL Lot 2 (NWNE) SHL Sec 6-T20S-R35E

At proposed prod. Zone 330' FSL & 1980' FEL Unit Letter O (SWSE) BHL Sec 6-T20S-R35E

11. Sec., T.R.M. or Blk and Survey or Area
Section 6 - T20S - R35E

Distance in miles and direction from nearest town or post office*
Approximately 12 miles from Monument

12. County or Parish
Lea County

13. State
NM

Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. Unit line, if any) 190'	16. No. of acres in lease 600.12	17. Spacing Unit dedicated to this well 160.65
Distance from location* to nearest well, drilling, completed, applied for, on this lease, ft. SHL: 1401' BHL: 4177'	19. Proposed Depth TVD: 11,210' MD: 15,744' PH: 11,400'	20. BLM/BIA Bond No. on file NMB000740 &NMB000215
Elevations (Show whether DF, KDB, RT, GL, etc.) 3697.4' GL	22. Approximate date work will start* 6/1/2013	23. Estimated duration 30 days

24. Attachments

e following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
- 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- 5. Operator certification
- 6. Such other site specific information and/or plans as may be required by the authorized officer.

Signature	Name *(Printed/Typed)*	Date
Mayte Reyes	Mayte Reyes	3/12/2013

e
Regulatory Analyst

oroved by *(Signature)* /S/ STEPHEN J. CAFFEY	Name *(Printed/Typed)*	Date
e FIELD MANAGER	Office CARLSBAD FIELD OFFICE	DEC 19 2013

lication approval does not warrant or certify that the applicant holds legan or equitable title to those rights in the subject lease which would entitle the applicant to duct operations theron.
iditions of approval, if any, are attached.

e 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 es any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

ntinued on page 2)

*(Instructions on page 2)

LEA COUNTY CONTROLLED WATER BASIN

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

KG
12/26/13

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

DEC 30 2013

COG Operating LLC
DRILLING AND OPERATIONS PROGRAM
Prickly Pear 6 Federal 2H
SHL: 190' FNL & 1790' FEL
BHL: 330' FSL & 1980' FEL
Section 6, T20S R35E
Lea County, New Mexico

In conjunction with Form 3160-3, Application for Permit to Drill subject well, COG Operating LLC submits the following eleven items of pertinent information in accordance with BLM requirements.

1. Geological surface formation: Permian

2. The estimated tops of geologic markers & estimated depths at which anticipated water, oil or gas formations are expected to be encountered are as follows:

Fresh Water	59'	
Rustler	1,851'	
Top of Salt	1,941'	
Base of Salt	3,359'	
Yates	3,592'	
Seven Rivers	4,000'	
Queen	4,598'	Oil
Cherry Canyon	5,549'	Oil
Bone Spring	8,139'	Oil
1st BS Sand	9,581'	Oil
2nd BS Sand	10,189'	Oil
3rd BS Sand	10,994'	Oil
Wolfcamp	11,165'	Oil
PH TD/TVD	11,400'	
TD TVD	11,210'	
TV MD	15,744'	

No other formations are expected to give up oil, gas or fresh water in measurable quantities.

The surface fresh water sands will be protected by setting 13 3/8" casing at ~~1,900'~~ 1930' and circulating cement back to surface.

The salt sections will be isolated by setting 9 5/8" casing at 3,650' and circulating cement back to surface.

All intervals within the production section will be isolated by setting 5 1/2" casing to total depth and circulating cement to ~3,350' (300' overlap).

3. Proposed Casing Program: All casing is new and API approved

See COA

Hole Size	Depths 1930'	Section	OD Casing	New/ Used	Wt	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17 ½"	0' – ~~1,900'~~	Surface	13 3/8"	New	54.5#	STC	J-55	1.125	1.125	1.6
12 ¼"	0' – 3,650'	Intrmd	9 5/8"	New	36#	LTC	J-55	1.125	1.125	1.6
7 7/8"	0' – 15,744'	Production Curve & Lateral	5 1/2"	New	17#	LTC	P-110	1.125	1.125	1.6

- While running all casing strings, the pipe will be kept a minimum of 1/3 full at all times to avoid approaching the collapse pressure of casing.
- Will run one centralizer per joint in lateral section of well.

4. Proposed Cement Program

a. 13 3/8" Surface
Lead: 890 sx Class C + 4% Gel + 2% $CaCl_2$ (13.5 ppg /1.75 cuft/sk)
Tail: 225 sx Class C + 2% $CaCl_2$ (14.8 ppg / 1.34 cuft/sk)
**Calculated w/40% excess on OH volumes

b. 9 5/8" Intermediate:
Lead: 825 sx Class C + 4% Gel + 1% $CaCl_2$ (13.5 ppg /1.75 cuft/sk)
Tail: 200 sx Class C + 2% $CaCl_2$ (14.8 ppg / 1.34 cuft/sk)
**Calculated w/80% excess on OH volumes

c. 5 1/2" Production
Lead: 900 sx 50:50:10 H w/ 8# salt, 5# kolseal, 0.5% Halad-322, 0.3% HR-601 & 1/4# D-Air 5000 (11.9 ppg / 2.51 cuft/sk)
Tail: 1140 sx 50:50:2 H w/ 1% salt, 0.4% GasStop, 0.3% CFR-3 & 0.1% HR601, & CFR-3 (14.4 ppg /1.25 cuft/sk)
**Calculated w/70% excess on OH volumes

See COA

- The above cement volumes could be revised pending caliper measurements.
- All strings are designed to circulate to surface.
- Pilot hole will be plugged back with the following plug:
  1000' plug f/10,400' – 11,400' with 380 sx Class H @ 17.2 ppg/0.98 yield

5. **Minimum Specifications for Pressure Control:**

See COA

Nipple up on 13 3/8" with minimum 2M annular BOP. Annular will be tested to 50% of WP and remainder of system will be tested to 2000 psi by independent tester.

Nipple up on 9 5/8" with minimum 5M annular and double ram preventers. Annular will be tested to 50% of WP and remainder of system tested to 5000 psi by independent tester.

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. A 2" kill line and a minimum 3" choke line will be included in the drilling spool located below the ram-type BOP. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold with 5000 psi WP rating.

6. **Estimated BHP & BHT:**

Lateral TD = 4897 psi
Lateral TD = 169° F
PHTD = 5454 psi
PHTD = 171° F

7. **Mud Program:** The applicable depths and properties of this system are as follows:

See COA

Depth 1930'	Type System	Mud Weight	Viscosity (sec)	Waterloss (cc)
0' - ~~1,900'~~	Fresh Water	8.4	29	N.C.
~~1,900'~~ - 3,650'	Brine	10.0	29	N.C.
3,650' - 11,400' (PH)	Cut Brine	8.6 - 9.6	29	N.C.
10,663' - 15,744' (Lateral)	Cut Brine	8.6 - 9.2	29	N.C.

- The necessary mud products for weight addition and fluid loss control will be on location at all times.
- A visual and electronic mud monitoring system will be rigged up prior to spud to detect changes in the volume of mud system. The electronic system consists of a pit volume totalizer, stroke counter and flow sensor at flow line.
- If weight and/or viscosity are introduced to the mud system a daily mud check will be performed by mud contractor, along with tourly check by rig personnel.
- After setting intermediate casing, a third party gas unit detection system will be installed at the flow line.

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

a. A Kelly cock will be in the drill string at all times.
b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 5 1/2" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

See COA

9. Testing, Logging and Coring Program:

a. Drill stem tests will be based on geological sample shows.
b. If open hole electrical logging is performed, the program will be:
   i. Total Depth to Intermediate Casing: Dual Laterolog-Micro Laterolog and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
   ii. Total Depth to Surface: Compensated Neutron with Gamma Ray
   iii. No coring program is planned
   iv. Additional testing will be initiated subsequent to setting the 5 1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

10. Potential Hazards:

a. No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area. If H2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. No H2S is anticipated to be encountered.

See COA

11. Anticipated starting date and Duration of Operations:

a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 30 days.

PATHFINDER
A Schlumberger Company

COG Prickly Pear 6 Federal #2H Rev1 MDT 11Jun13 Proposal Geodetic Report

(Non-Def Plan)

Report Date:	June 11, 2013 - 10:41 AM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	COG	**Vertical Section Azimuth:**	181.743 ° (Grid North)
Field:	NM Lea County (NAD 27)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	COG Prickly Pear 6 Federal #2H / COG Prickly Pear 6 Federal #2H	**TVD Reference Datum:**	RKB
Well:	COG Prickly Pear 6 Federal #2H	**TVD Reference Elevation:**	3714.400 ft above
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3697.400 ft above
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	7.437 °
Survey Name:	COG Prickly Pear 6 Federal #2H Rev1 MDT 11Jun13	**Total Gravity Field Strength:**	998.4907mgn (9.80665 Based)
Survey Date:	June 11, 2013	**Total Magnetic Field Strength:**	48850.507 nT
Tort / AHD / DDI / ERD Ratio:	89.076 ° / 4607.902 ft / 5.779 / 0.429	**Magnetic Dip Angle:**	60.500 °
Coordinate Reference System:	NAD27 New Mexico State Plane, Eastern Zone, US Feet	**Declination Date:**	June 11, 2013
Location Lat / Long:	N 32° 36' 32.14448", W 103° 29' 36.22922"	**Magnetic Declination Model:**	BGGM 2013
Location Grid N/E Y/X:	N 586261.600 ftUS, E 758644.300 ftUS	**North Reference:**	Grid North
CRS Grid Convergence Angle:	0.4527 °	**Grid Convergence Used:**	0.4527 °
Grid Scale Factor:	0.9999657	**Total Corr Mag North->Grid North:**	6.9847 °
		Local Coord Referenced To:	Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL	0.00	0.00	181.74	0.00	0.00	0.00	0.00	N/A	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	100.00	0.00	181.74	100.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	200.00	0.00	181.74	200.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	300.00	0.00	181.74	300.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	400.00	0.00	181.74	400.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	500.00	0.00	181.74	500.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	600.00	0.00	181.74	600.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	700.00	0.00	181.74	700.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	800.00	0.00	181.74	800.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	900.00	0.00	181.74	900.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	1000.00	0.00	181.74	1000.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	1100.00	0.00	181.74	1100.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	1200.00	0.00	181.74	1200.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	1300.00	0.00	181.74	1300.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	1400.00	0.00	181.74	1400.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	1500.00	0.00	181.74	1500.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	1600.00	0.00	181.74	1600.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	1700.00	0.00	181.74	1700.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	1800.00	0.00	181.74	1800.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	1900.00	0.00	181.74	1900.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	2000.00	0.00	181.74	2000.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	2100.00	0.00	181.74	2100.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	2200.00	0.00	181.74	2200.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	2300.00	0.00	181.74	2300.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	2400.00	0.00	181.74	2400.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	2500.00	0.00	181.74	2500.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	2600.00	0.00	181.74	2600.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	2700.00	0.00	181.74	2700.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	2800.00	0.00	181.74	2800.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	2900.00	0.00	181.74	2900.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	3000.00	0.00	181.74	3000.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	3100.00	0.00	181.74	3100.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	3200.00	0.00	181.74	3200.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	3300.00	0.00	181.74	3300.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	3400.00	0.00	181.74	3400.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	3500.00	0.00	181.74	3500.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	3600.00	0.00	181.74	3600.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	3700.00	0.00	181.74	3700.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	3800.00	0.00	181.74	3800.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	3900.00	0.00	181.74	3900.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	4000.00	0.00	181.74	4000.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	4100.00	0.00	181.74	4100.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	4200.00	0.00	181.74	4200.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	4300.00	0.00	181.74	4300.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	4400.00	0.00	181.74	4400.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	4500.00	0.00	181.74	4500.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	4600.00	0.00	181.74	4600.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	4700.00	0.00	181.74	4700.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	4800.00	0.00	181.74	4800.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	4900.00	0.00	181.74	4900.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	5000.00	0.00	181.74	5000.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	5100.00	0.00	181.74	5100.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	5200.00	0.00	181.74	5200.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	5300.00	0.00	181.74	5300.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	5400.00	0.00	181.74	5400.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	5500.00	0.00	181.74	5500.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	5600.00	0.00	181.74	5600.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	5700.00	0.00	181.74	5700.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	5800.00	0.00	181.74	5800.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	5900.00	0.00	181.74	5900.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	6000.00	0.00	181.74	6000.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	6100.00	0.00	181.74	6100.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	6200.00	0.00	181.74	6200.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	6300.00	0.00	181.74	6300.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	6400.00	0.00	181.74	6400.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	6500.00	0.00	181.74	6500.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	6600.00	0.00	181.74	6600.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	6700.00	0.00	181.74	6700.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	6800.00	0.00	181.74	6800.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	6900.00	0.00	181.74	6900.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	7000.00	0.00	181.74	7000.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	7100.00	0.00	181.74	7100.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	7200.00	0.00	181.74	7200.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	7300.00	0.00	181.74	7300.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	7400.00	0.00	181.74	7400.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	7500.00	0.00	181.74	7500.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	7600.00	0.00	181.74	7600.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	7700.00	0.00	181.74	7700.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	7800.00	0.00	181.74	7800.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	7900.00	0.00	181.74	7900.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	8000.00	0.00	181.74	8000.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	8100.00	0.00	181.74	8100.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	8200.00	0.00	181.74	8200.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	8300.00	0.00	181.74	8300.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	8400.00	0.00	181.74	8400.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	8500.00	0.00	181.74	8500.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	8600.00	0.00	181.74	8600.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	8700.00	0.00	181.74	8700.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	8800.00	0.00	181.74	8800.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	8900.00	0.00	181.74	8900.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	9000.00	0.00	181.74	9000.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	9100.00	0.00	181.74	9100.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	9200.00	0.00	181.74	9200.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	9300.00	0.00	181.74	9300.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	9400.00	0.00	181.74	9400.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	9500.00	0.00	181.74	9500.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	9600.00	0.00	181.74	9600.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	9700.00	0.00	181.74	9700.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	9800.00	0.00	181.74	9800.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	9900.00	0.00	181.74	9900.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	10000.00	0.00	181.74	10000.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	10100.00	0.00	181.74	10100.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	10200.00	0.00	181.74	10200.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	10300.00	0.00	181.74	10300.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	10400.00	0.00	181.74	10400.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	10500.00	0.00	181.74	10500.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	10600.00	0.00	181.74	10600.00	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
KOP Build @ 12° DLS	10662.60	0.00	181.74	10662.60	0.00	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.14	W 103 29 36.23
	10700.00	4.49	181.74	10699.96	1.46	-1.46	-0.04	12.00	586260.14	758644.26	N 32 36 32.13	W 103 29 36.23
	10800.00	16.49	181.74	10798.11	19.63	-19.62	-0.53	12.00	586241.98	758643.70	N 32 36 31.95	W 103 29 36.24
	10900.00	28.49	181.74	10890.34	57.81	-57.79	-1.76	12.00	586203.81	758642.54	N 32 36 31.57	W 103 29 36.26
	11000.00	40.49	181.74	10972.61	114.33	-114.28	-3.48	12.00	586147.32	758640.82	N 32 36 31.01	W 103 29 36.28
	11100.00	52.49	181.74	11041.34	186.72	-186.64	-5.68	12.00	586074.97	758638.62	N 32 36 30.30	W 103 29 36.31
	11200.00	64.49	181.74	11093.51	271.82	-271.69	-8.27	12.00	585989.91	758636.03	N 32 36 29.46	W 103 29 36.35
	11300.00	76.49	181.74	11126.85	365.91	-365.74	-11.13	12.00	585895.87	758633.17	N 32 36 28.53	W 103 29 36.39
	11400.00	88.49	181.74	11139.90	464.87	-464.65	-14.14	12.00	585796.96	758630.16	N 32 36 27.55	W 103 29 36.44
Landing Point	11404.90	89.08	181.74	11140.00	469.78	-469.54	-14.28	12.00	585792.08	758630.02	N 32 36 27.50	W 103 29 36.44
	11500.00	89.08	181.74	11141.54	564.85	-564.59	-17.19	0.00	585697.02	758627.12	N 32 36 26.56	W 103 29 36.48
	11600.00	89.08	181.74	11143.15	664.84	-664.53	-20.22	0.00	585597.08	758624.08	N 32 36 25.57	W 103 29 36.53
	11700.00	89.08	181.74	11144.76	764.83	-764.47	-23.26	0.00	585497.14	758621.04	N 32 36 24.58	W 103 29 36.57
	11800.00	89.08	181.74	11146.38	864.81	-864.41	-26.30	0.00	585397.20	758618.00	N 32 36 23.59	W 103 29 36.62
	11900.00	89.08	181.74	11147.99	964.80	-964.35	-29.34	0.00	585297.26	758614.96	N 32 36 22.60	W 103 29 36.66
	12000.00	89.08	181.74	11149.60	1064.78	-1064.30	-32.38	0.00	585197.32	758611.92	N 32 36 21.62	W 103 29 36.71
	12100.00	89.08	181.74	11151.22	1164.77	-1164.24	-35.42	0.00	585097.38	758608.88	N 32 36 20.63	W 103 29 36.75
	12200.00	89.08	181.74	11152.83	1264.76	-1264.18	-38.46	0.00	584997.44	758605.84	N 32 36 19.64	W 103 29 36.80
	12300.00	89.08	181.74	11154.44	1364.75	-1364.12	-41.50	0.00	584897.50	758602.80	N 32 36 18.65	W 103 29 36.84
	12400.00	89.08	181.74	11156.06	1464.74	-1464.06	-44.54	0.00	584797.57	758599.76	N 32 36 17.68	W 103 29 36.89
	12500.00	89.08	181.74	11157.67	1564.72	-1564.00	-47.58	0.00	584697.63	758596.72	N 32 36 16.67	W 103 29 36.93
	12600.00	89.08	181.74	11159.28	1664.71	-1663.94	-50.62	0.00	584597.69	758593.68	N 32 36 15.68	W 103 29 36.97
	12700.00	89.08	181.74	11160.90	1764.70	-1763.88	-53.66	0.00	584497.75	758590.64	N 32 36 14.70	W 103 29 37.02
	12800.00	89.08	181.74	11162.51	1864.68	-1863.82	-56.70	0.00	584397.81	758587.60	N 32 36 13.71	W 103 29 37.06
	12900.00	89.08	181.74	11164.12	1964.67	-1963.76	-59.74	0.00	584297.87	758584.56	N 32 36 12.72	W 103 29 37.11
	13000.00	89.08	181.74	11165.74	2064.66	-2063.70	-62.78	0.00	584197.93	758581.52	N 32 36 11.73	W 103 29 37.15
	13100.00	89.08	181.74	11167.35	2164.64	-2163.64	-65.82	0.00	584097.99	758578.48	N 32 36 10.74	W 103 29 37.20
	13200.00	89.08	181.74	11168.96	2264.63	-2263.58	-68.86	0.00	583998.05	758575.44	N 32 36 9.75	W 103 29 37.24
	13300.00	89.08	181.74	11170.58	2364.62	-2363.52	-71.91	0.00	583898.11	758572.40	N 32 36 8.76	W 103 29 37.29
	13400.00	89.08	181.74	11172.19	2464.61	-2463.47	-74.95	0.00	583798.17	758569.36	N 32 36 7.78	W 103 29 37.33
	13500.00	89.08	181.74	11173.80	2564.59	-2563.41	-77.99	0.00	583698.24	758566.32	N 32 36 6.79	W 103 29 37.38
	13600.00	89.08	181.74	11175.42	2664.58	-2663.35	-81.03	0.00	583598.30	758563.27	N 32 36 5.80	W 103 29 37.42
	13700.00	89.08	181.74	11177.03	2764.57	-2763.29	-84.07	0.00	583498.36	758560.23	N 32 36 4.81	W 103 29 37.47
	13800.00	89.08	181.74	11178.64	2864.55	-2863.23	-87.11	0.00	583398.42	758557.19	N 32 36 3.82	W 103 29 37.51
	13900.00	89.08	181.74	11180.26	2964.54	-2963.17	-90.15	0.00	583298.48	758554.15	N 32 36 2.83	W 103 29 37.56
	14000.00	89.08	181.74	11181.87	3064.53	-3063.11	-93.19	0.00	583198.54	758551.11	N 32 36 1.84	W 103 29 37.60
	14100.00	89.08	181.74	11183.48	3164.51	-3163.05	-96.23	0.00	583098.60	758548.07	N 32 36 0.86	W 103 29 37.65
	14200.00	89.08	181.74	11185.10	3264.50	-3262.99	-99.27	0.00	582998.66	758545.03	N 32 35 59.87	W 103 29 37.69
	14300.00	89.08	181.74	11186.71	3364.49	-3362.93	-102.31	0.00	582898.72	758541.99	N 32 35 58.88	W 103 29 37.74
	14400.00	89.08	181.74	11188.32	3464.48	-3462.87	-105.35	0.00	582798.78	758538.95	N 32 35 57.89	W 103 29 37.78
	14500.00	89.08	181.74	11189.94	3564.46	-3562.81	-108.39	0.00	582698.84	758535.91	N 32 35 56.90	W 103 29 37.83
	14600.00	89.08	181.74	11191.55	3664.45	-3662.75	-111.43	0.00	582598.91	758532.87	N 32 35 55.91	W 103 29 37.87
	14700.00	89.08	181.74	11193.16	3764.44	-3762.70	-114.47	0.00	582498.97	758529.83	N 32 35 54.92	W 103 29 37.91
	14800.00	89.08	181.74	11194.78	3864.42	-3862.64	-117.51	0.00	582399.03	758526.79	N 32 35 53.93	W 103 29 37.96
	14900.00	89.08	181.74	11196.39	3964.41	-3962.58	-120.55	0.00	582299.09	758523.75	N 32 35 52.95	W 103 29 38.00
	15000.00	89.08	181.74	11198.00	4064.40	-4062.52	-123.59	0.00	582199.15	758520.71	N 32 35 51.96	W 103 29 38.05

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	15100.00	89.08	181.74	11199.62	4164.38	-4162.46	-126.63	0.00	582099.21	758517.67	N 32 35 50.97	W 103 29 38.09
	15200.00	89.08	181.74	11201.23	4264.37	-4262.40	-129.67	0.00	581999.27	758514.63	N 32 35 49.98	W 103 29 38.14
	15300.00	89.08	181.74	11202.84	4364.36	-4362.34	-132.71	0.00	581899.33	758511.59	N 32 35 48.99	W 103 29 38.18
	15400.00	89.08	181.74	11204.46	4464.35	-4462.28	-135.76	0.00	581799.39	758508.55	N 32 35 48.00	W 103 29 38.23
	15500.00	89.08	181.74	11206.07	4564.33	-4562.22	-138.80	0.00	581699.45	758505.51	N 32 35 47.01	W 103 29 38.27
	15600.00	89.08	181.74	11207.68	4664.32	-4662.16	-141.84	0.00	581599.51	758502.47	N 32 35 46.03	W 103 29 38.32
	15700.00	89.08	181.74	11209.30	4764.31	-4762.10	-144.88	0.00	581499.57	758499.43	N 32 35 45.04	W 103 29 38.36
COG Prickly Pear 6 Federal #2H PBHL	15743.60	89.08	181.74	11210.00	4807.90	-4805.68	-146.20	0.00	581456.00	758498.10	N 32 35 44.61	W 103 29 38.38

Survey Type: Non-Def Plan

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

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	17.000	1/100.000	30.000	30.000	SLB_MWD-STD-Depth Only	Original Borehole / COG Prickly Pear 6 Federal #2H Rev1 MDT
	17.000	15743.601	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / COG Prickly Pear 6 Federal #2H Rev1 MDT

CONCHO

COG **Rev1**

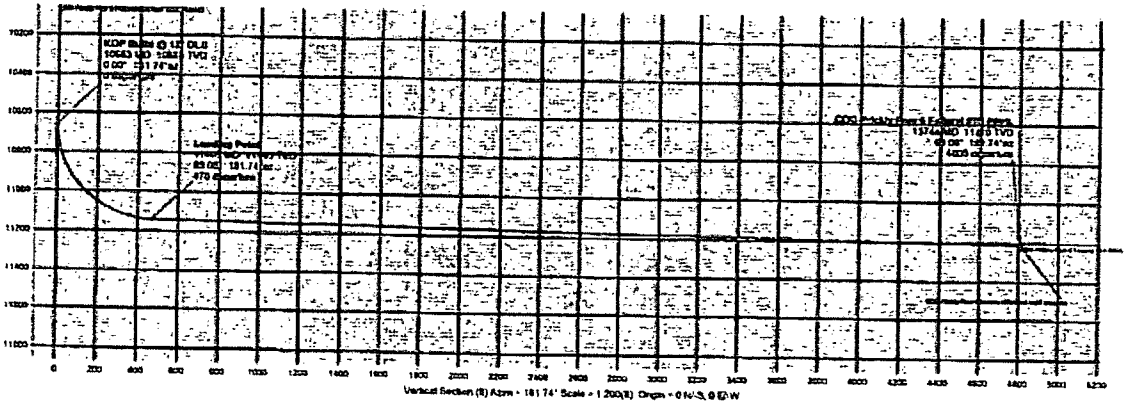
PATHFINDER
A Schlumberger Company

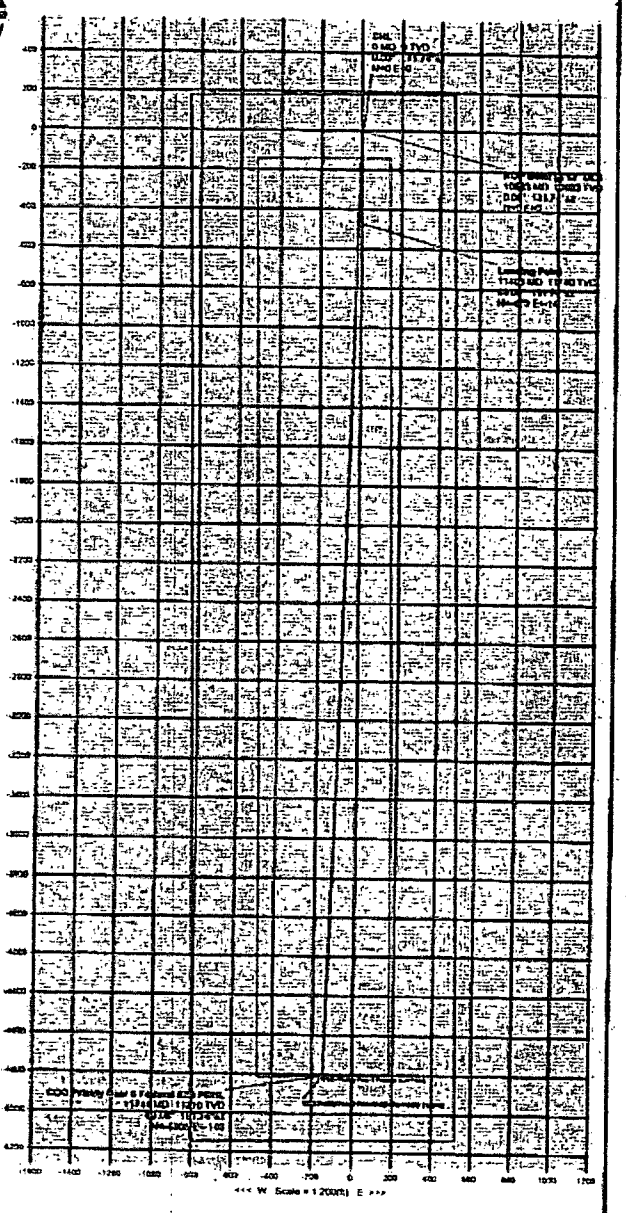
COG Prickly Pear 6 Federal #2H	NM Lea County (NAD 27)	McVay 7

Legend

Grid North
Tot Corr (M->G 6.9847°)
Mag Dec (7.437°)
Grid Conv (0.453°)

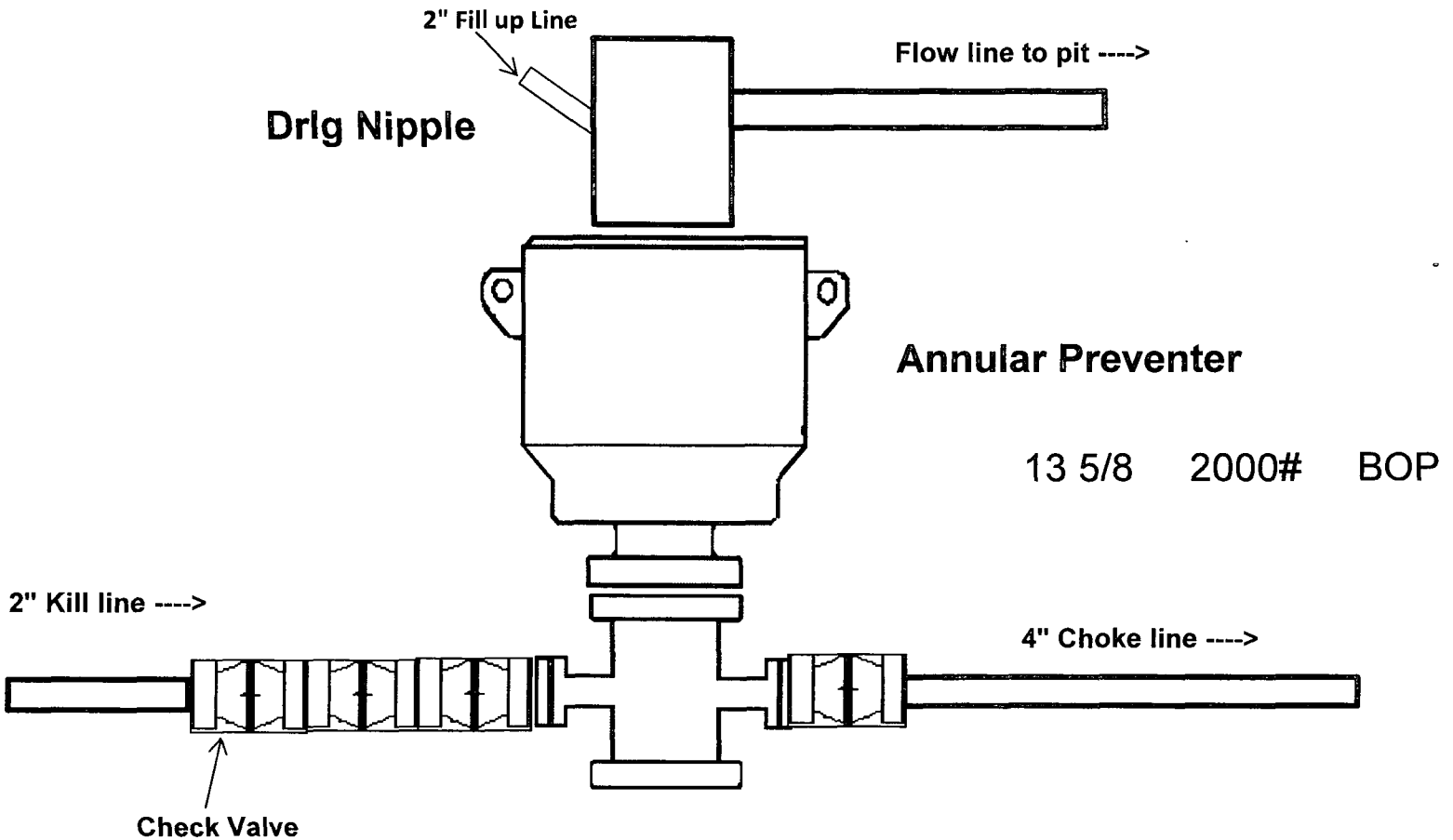
SHL	0.00	0.00	181.74	0.00	-3714.40	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.144	W 103 29 36.229		181.74
KOP Build @ 12° DLS	10662.60	0.00	181.74	10662.60	6948.20	0.00	0.00	0.00	586261.60	758644.30	N 32 36 32.144	W 103 29 36.229	0.00	181.74
Landing Point	11404.90	89.08	181.74	11140.00	7425.60	459.76	-469.54	-14.28	585792.06	758530.02	N 32 36 27.500	W 103 29 36.440	12.00	0.00
COG Prickly Pear 6 Federal #2H PBHL	15743.60	89.08	181.74	11210.00	7495.60	4827.90	-4305.68	-145.20	581456.00	758438.10	N 32 35 44.606	W 103 29 38.382	0.00	



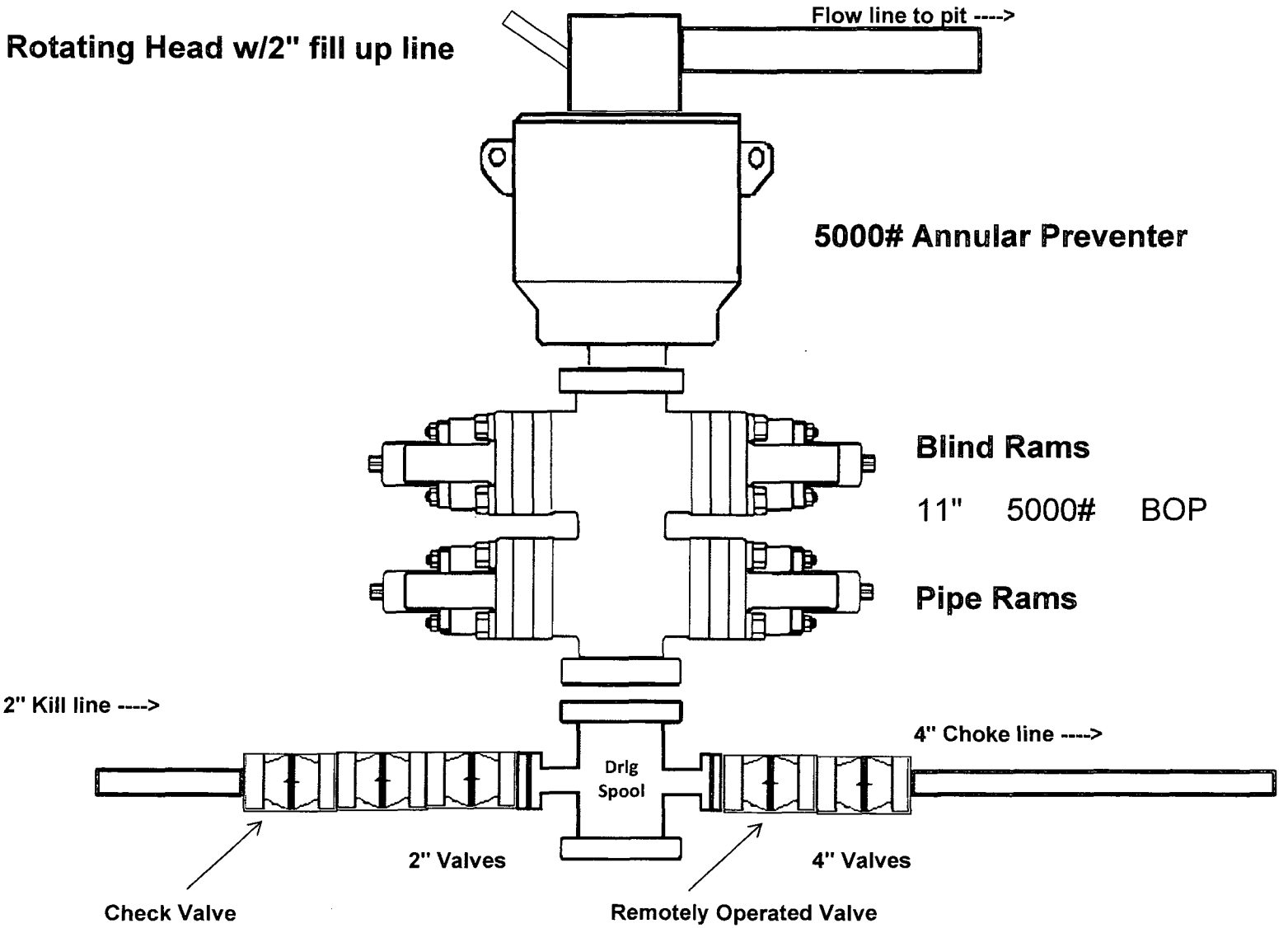


Drawn By	
Date Created	
Checked By	
Checked Date	
Approved By	
Approved Date	
Current User	June 11, 2013 10:35:19 AM

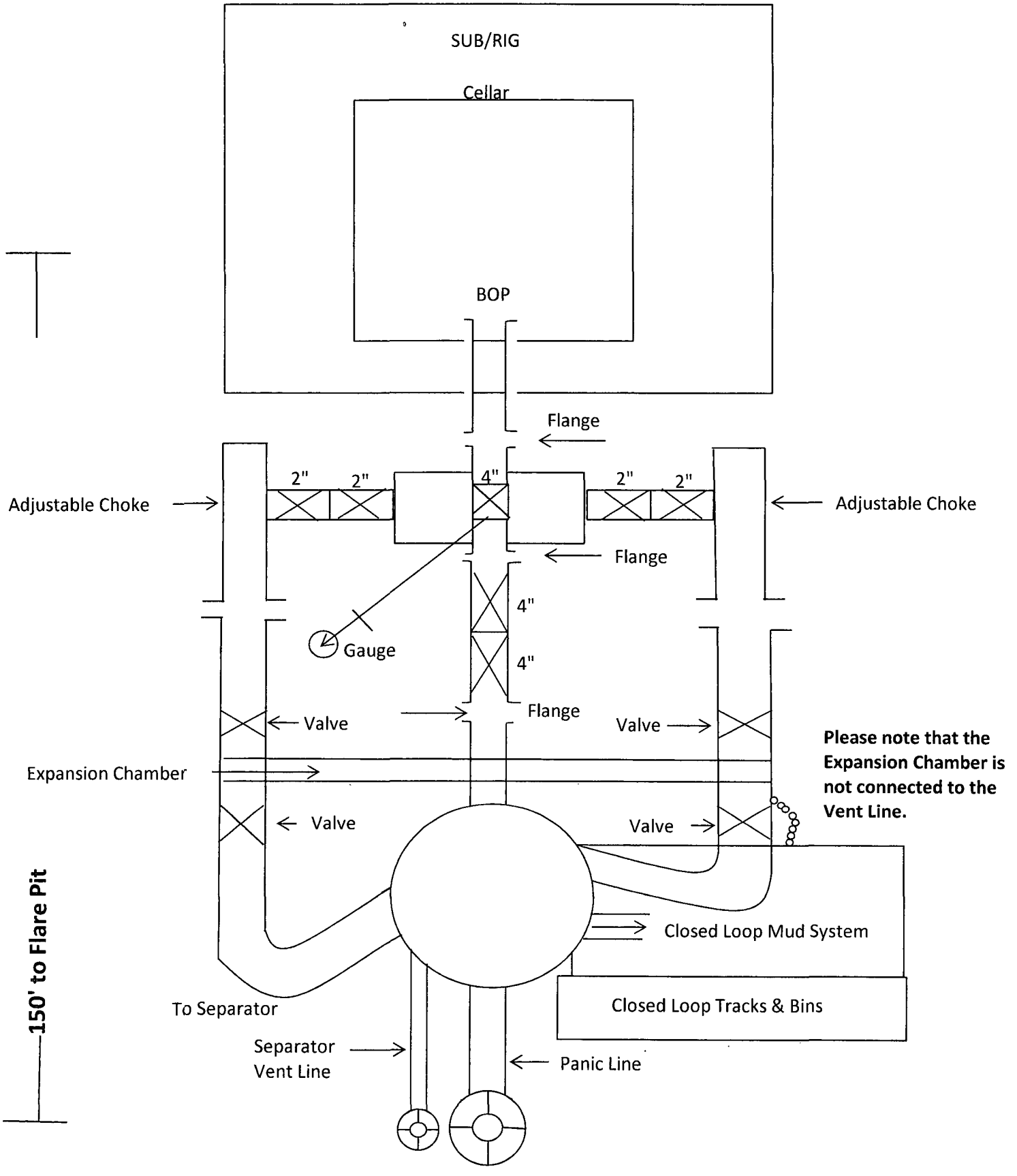
2,000 psi BOP Schematic



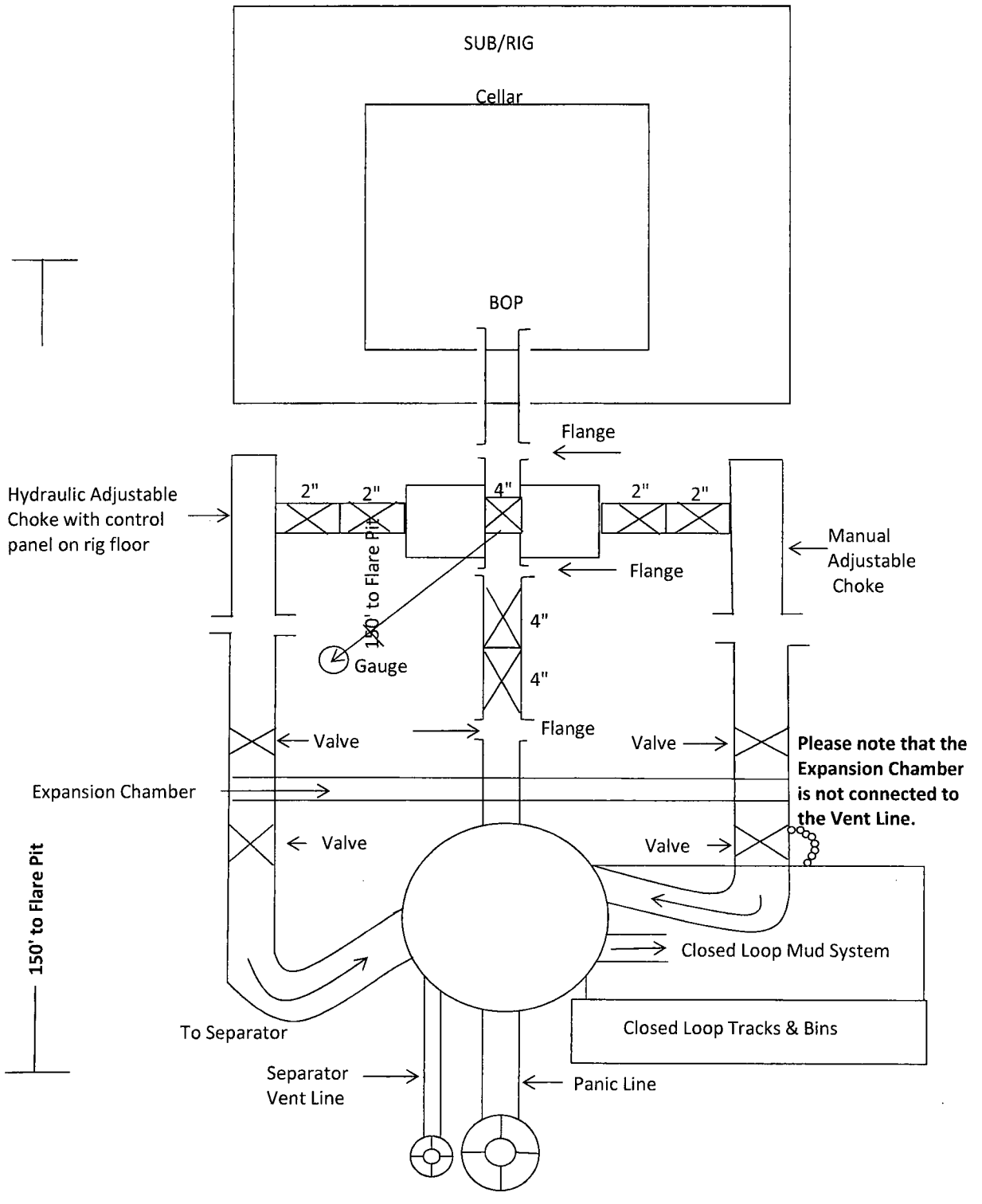
5,000 psi BOP Schematic



2M Choke Manifold Equipment



5M Choke Manifold Equipment



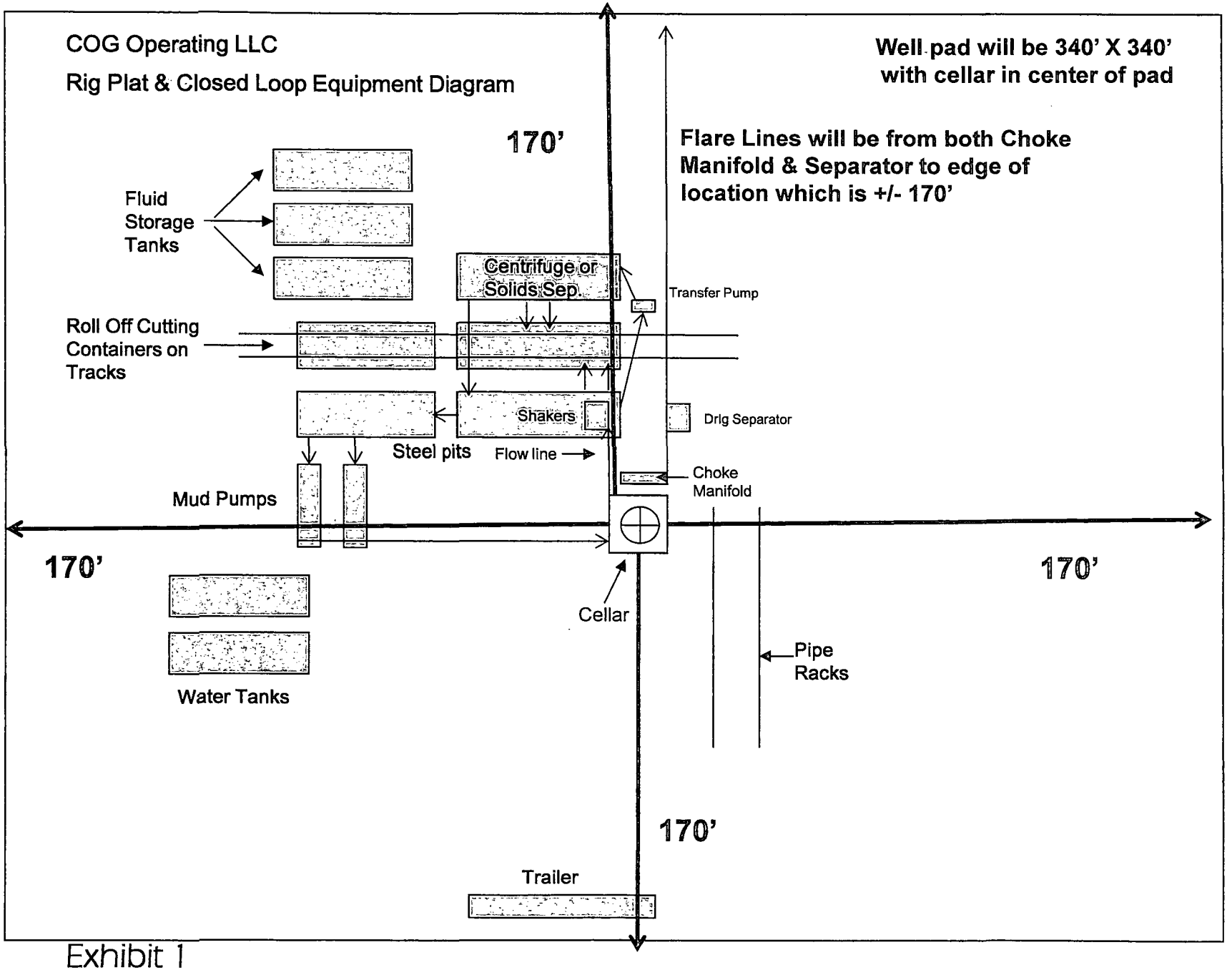

COG Operating LLC
Rig Plat & Closed Loop Equipment Diagram
Well pad will be 340' X 340' with cellar in center of pad
Flare Lines will be from both Choke Manifold & Separator to edge of location which is +/- 170'
170'
Fluid Storage Tanks
Centrifuge or Solids Sep
Transfer Pump
Roll Off Cutting Containers on Tracks
Shakers
Drlg Separator
Steel pits
Flow line
Choke Manifold
Mud Pumps
170'
170'
Cellar
Pipe Racks
Water Tanks
170'
Trailer

Exhibit 1

Design Plan
Operating and Maintenance Plan
Closure Plan

Prickly Pear 6 Federal 2H
SHL: 190' FNL & 1790' FEL
BHL: 330' FSL & 1980' FEL
Section 6, T20S R35E
Lea County, New Mexico

COG Operating LLC will be using all above ground steel pits for fluid and cuttings while drilling. If any tank develops a leak we will have immediate visual discovery, we would then transfer the fluid to another tank then remove any contaminated soil and dispose of it in the cuttings bins for transportation. All leaks should be kept to less than 5 barrels. Rig crews will monitor the tanks at all times.

Equipment List:
2- Mongoose Shale Shakers
1- 414 Centrifuge
1- 518 Centrifuge
2- Roll Off Bins w/ Tracks
2- 500 BBL Frac Tanks

During drilling operations all liquids, drilling fluids and cuttings will be hauled off via CRI (Controlled Recovery Inc.) Permit R-9166 or any other approved facility.