R-111-POTASH

14-604

OCD Hobbs

Split Estate

Form 3160-3
(March 2012)

HOBBS OCD

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

JUL 28 2014

UNORTHODOX LOCATION

# APPLICATION FOR PERMIT TO DRILL OR REENTER

RECEIVED

| | |
|---|---|
| 1a. Type of work: ☑ DRILL ☐ REENTER | 5. Lease Serial No. LC-070315 |
| 1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone | 6. If Indian, Allotee or Tribe Name |
| 2. Name of Operator FASKEN OIL & RANCH (151416) | 7. If Unit or CA Agreement, Name and No. |
| 3a. Address 6101 HOLIDAY HILL ROAD MIDLAND, TEXAS 79707 | 8. Lease Name and Well No. PALOMA 21 FEDERAL COM 1H (313461) |
| 3b. Phone No. (include area code) (432) 687-1777 (CORY FREDRICK) | 9. API Well No. 30-025-41993 |
| 4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface 200 FNL & 675 FWL, SECTION 21 (D) At proposed prod. zone 2310 FNL & 330 FWL, SECTION 28 (E) | 10. Field and Pool, or Exploratory LEA; BONE SPRING, SOUTH (37580) |
| | 11. Sec., T. R. M. or Blk. and Survey or Area SHL: SECTION 21, T. 20 S., R. 34 E. BHL: SECTION 28, T. 20 S., R. 34 E. |
| 14. Distance in miles and direction from nearest town or post office* 26 MILES SOUTHWEST OF HOBBS, NM | 12. County or Parish LEA / 13. State NM |
| 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) SHL: 200' BHL: 330' | 16. No. of acres in lease 960 / 17. Spacing Unit dedicated to this well 240 |
| 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. SHL: 975' (#2) BHL: 1540' (#2) | 19. Proposed Depth TVD: 11,082' MD: 18,205' / 20. BLM/BIA Bond No. on file NM-2729 |
| 21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3637.4' GL | 22. Approximate date work will start* ASAP / 23. Estimated duration 30 DAYS |

## 24. Attachments

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

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must 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 BLM.

| | | |
|---|---|---|
| 25. Signature Barry W. Hunt | Name (Printed/Typed) BARRY W. HUNT | Date 3/24/14 |
| Title PERMIT AGENT FOR FASKEN OIL & RANCH | | |
| Approved by (Signature) /S/ JEANETTE MARTINEZ | Name (Printed/Typed) | Date JUL 22 2014 |
| Title FIELD MANAGER | Office CARLSBAD FIELD OFFICE | |

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

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

Capitan Controlled Water Basin

KZ 07/28/14

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

JUL 29 2014

**CERTIFICATION**

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road 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 Fasken Oil & Ranch, Ltd. 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 7th. day of March 2014.

Signed: Barry W. Hunt

Printed Name: Barry Hunt
Position: Agent for Fasken Oil & Ranch, Ltd.
Address: 1403 Springs Farm Place, Carlsbad, NM 88220
Telephone: (575) 361-4078
E-mail: specialtpermitting@gmail.com

APPLICATION FOR PERMIT TO DRILL
EIGHT POINT DRILLING PLAN
Fasken Oil and Ranch, Ltd.

HOBBS OCD

JUL 28 2014

RECEIVED

Paloma "21" Federal No. 1H
SHL: 200' FNL & 675' FWL, Sec. 21, T20S, R34E
BHL: 2310' FNL & 330' FWL, Sec. 28, T20S, R34E
Lea County, New Mexico

1. Estimated formation tops, please see below.

2. Water, oil, gas, and/or mineral bearing formations, see below.

KB: 3,662' (estimated)

| Formation | Top Est. From KB (TVD) | MD | Bearing |
|---|---|---|---|
| Fresh Water | 125' | 125' | Fresh Water |
| Rustler | 1513' | 1513' | |
| Salt | 1605' | 1605' | |
| Base Salt | 3523' | 3523' | |
| Yates | 3576' | 3576' | Oil/Gas |
| Reef | 3915' | 3915' | |
| Del. Mountain Group | 5553' | 5553' | Oil/Gas |
| Bone Springs | 8319' | 8319' | Oil/Gas |
| 1st Bone Springs | 9447' | 9447' | Oil/Gas |
| 2nd Bone Springs | 9975' | 9975' | Oil/Gas |
| 3rd Bone Springs | 10,661' | 10,661' | Oil/Gas |
| TD | 11,082' | 18,205' | Oil/Gas |

3. Casing Program:

All casing will be new.

See COA

| Hole Size | Interval | Size | Weight | Grade | Thread |
|---|---|---|---|---|---|
| 17-1/2" | 0'-1100' | 13-3/8" | 48.00# | H-40 | ST&C |
| | 1100'-~~1600'~~ 1620' | 13-3/8" | 54.50# | K-55 | ST&C |
| 12-1/4" | 0'-5200' | 9-5/8" | 40.00# | HCK-55 | BT&C |
| 8-3/4" | 0'-18,205' | 5-1/2" | 17.00# | HC-P110 | Modified BT&C TTRS1 |

Minimum casing design factors used are a 1.8 for tensile strings, 1.125 for collapse, and 1.1 for burst.

4. Pressure Control Equipment:

Exhibit "I". A 13-5/8" 5000 psi working pressure BOP consisting of one set of blind rams, one set of pipe rams, and a 5000 psi annular preventer. A choke manifold and accumulator with floor and remote operating stations and an auxiliary power system. There will also be a rotating head equipped after drilling out from the 9-5/8" casing. A Kelly cock will be installed and maintained in operating condition and a drill string safety valve in the open position will be available on the rig floor. A mud gas separator will also be utilized. The BOP unit will be hydraulically operated. BOP will be operated once a day while drilling and the blind rams will be function tested when out of the hole on trips. No abnormal temperatures or pressures are anticipated on this well. Before drilling out of the 13-3/8" surface casing, the BOP will be tested to 250 psi low and 2000 psi high by an independent service company. Before drilling out of the 9-5/8" casing the BOP will be tested to 250 psi low and 5000 psi high by an independent service company. The Hydril (annular) will be tested to 250 psi low/2500 psi high.

5. Drilling Fluids Program:

See COA

| Depth | Type | Weight | Viscosity | Waterloss |
|---|---|---|---|---|
| 0'-~~1,600'~~ 1620' | Fresh Water | 8.4-8.6 | 28 | NC |
| ~~1600'~~-5200' | Brine Water | 10.0-10.2 | 30-32 | NC |
| 5200'-10,400' | Cut Brine | 8.6-9.0 | 28-29 | NC |
| 10,400'-18,205' | FW/Gel/Starch | 8.5-9.5 | 28-45 | <20 |

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks.

An electronic pit volume totalizer with pit level indicators and alarms will be rigged up as part of the active mud system.

6. Technical Testing/Drilling and Cementing Plans

- DST's: None anticipated.

See COA - Cores: None anticipated.

- Mud Logging: 2-man Mudlogging unit from 5,200' to T.D.

- Electric Logs: MWD/Azimuthal Gamma Ray

**Cementing Design:**

**13-3/8" Surface Casing:** Lead with 800 sx Class "C" with 4% gel, 0.125 lbs/sx cellophane flake, and 0.2% anti foam, mix water 9.126 gal/sk (s.w. 13.5 ppg, yield 1.72 $ft^3$/sx) tail in with 350 sx Class "C" with 0.2% retarder, mix water 6.373 gal/sk (s.w. 14.8 ppg, yield 1.33 $ft^3$/sx). Cement will be calculated at 100% excess. Casing will be centralized on bottom 3 joints and then every 4th joint up to surface. TOC will be surface.

**9-5/8" Intermediate Casing:**

1st stage: Lead with 400 sx Lightweight C with 5% salt, 28.98 lb/sx D035 (extender), 0.03 gal/sx D177 (retarder), 6% D020 (extender), 0.125 lb/sx D130 (celloflake), 0.2% D046 (anti foamer), 0.4% D112 (fluid loss), 2 lb/sx D042 (extender), mix water 11.271 gal/sk (s.w.12.6 ppg, yield 2.07 $ft^3$/sx) tailed in with 250 sx Class "C" with 0.2% D201 (retarder), mix water 6.373 gal/sk (s.w. 14.8 ppg, yield 1.33 $ft^3$/sx). DV Tool/ECP will be installed at 3700'.

See COA 2nd Stage: Lead with 1500 sx Lightweight C with 5% salt, 28.98 lb/sx D035 (extender), 6% D020 (extender), 0.125 lb/sx D130 (celloflake), 0.2% D046 (anti foamer), 0.4% D112 (fluid loss), 2 lb/sx D042 (extender), mix water 11.296 gal/sk (s.w. 12.6, yield 2.23 $ft^3$/sx), tail in with 200 sx Class "C" with 0.2% D201 (retarder), mix water 6.373 gal/sk (s.w. 14.8 ppg, yield 1.33 $ft^3$/sx). Cement will be calculated at 50% excess over fluid caliper, TOC will be surface.

**5-1/2" Production Casing:**

1400 sx Light Weight Cement with 5% Salt, 8% gel, 0.2% D046 (anti-foam), .134 lbs/sack cellophane flake, 0.2% D112 (fluid loss), 0.1% D208 (viscosifier), 0.2% D013 (retarder), mix water 14.229 gal/sk (s.w. 11.9 ppg, yield 2.46 ft3/sx), tailed in with 1850 sx Lateral Tail Slurry with 2% gel, 0.5% D065 (dispersant), 0.2% D046 (anti foam), 2% D174 (expanding agent), 3 lb/sx D174 (extender), 0.2% D207 (fluid loss), 0.1% D208 (viscosifier), mix water 5.499 gal/sk (s.w. 14.5 ppg, yield 1.31 ft3/sx). Displaced plug with 2% KCL water. Cement will be calculated at 15% over calculated hole volume. TOC will be surface.

**Directional Drilling Program:**

Fasken Oil and Ranch, Ltd. will run a gyro survey at a TVD of 10,300'. A rotary steerable will then be picked up. A build rate of 10 degrees/100' will be utilized to build up to a hold angle of 89.49 degrees. This is the dip angle of the 3rd Bone Springs Sand target. The lateral will be drilled holding a position at least 330' off of the West section lines. The lateral will be drilled into the northern half of Section 28. TD is anticipated to be 18,205' MD/11,082' TVD. 5-1/2" production casing will then be installed and cemented to surface. The 3rd Bone Springs will then be hydraulically fractured in multiple stages.

**H2S Safety Equipment:**

See COA

H2S equipment will be rigged up prior to drilling out from surface casing. The flare pit will be located 100' from location. There is not any H2S anticipated in the area, but in the event it is encountered the attached H2S plan will be implemented. Please refer to the attached H2S location layout diagram.

**Closed loop system and choke manifold**: Please see attached Exhibit "K"

See COA

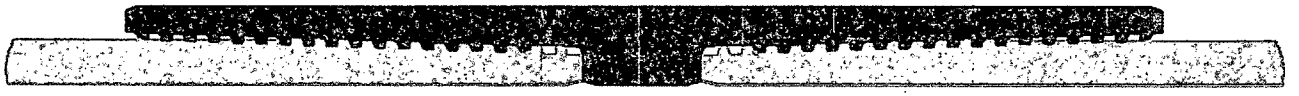
7. **Abnormal Pressure, Temperatures or Other Hazards:** None anticipated. Maximum Anticipated Bottom Hole Pressure is anticipated to be 5500 psi, with a BHT of 175°. Lost circulation is possible in the Reef and Delaware formations.

8. **Other Information:**

Auxiliary Equipment will include upper and lower kelly cocks. There will be a full opening stabbing valve on the rig floor.

. Anticipated Starting Date: June 15th, 2014

# Tejas Tubular® TTRS1® Connection

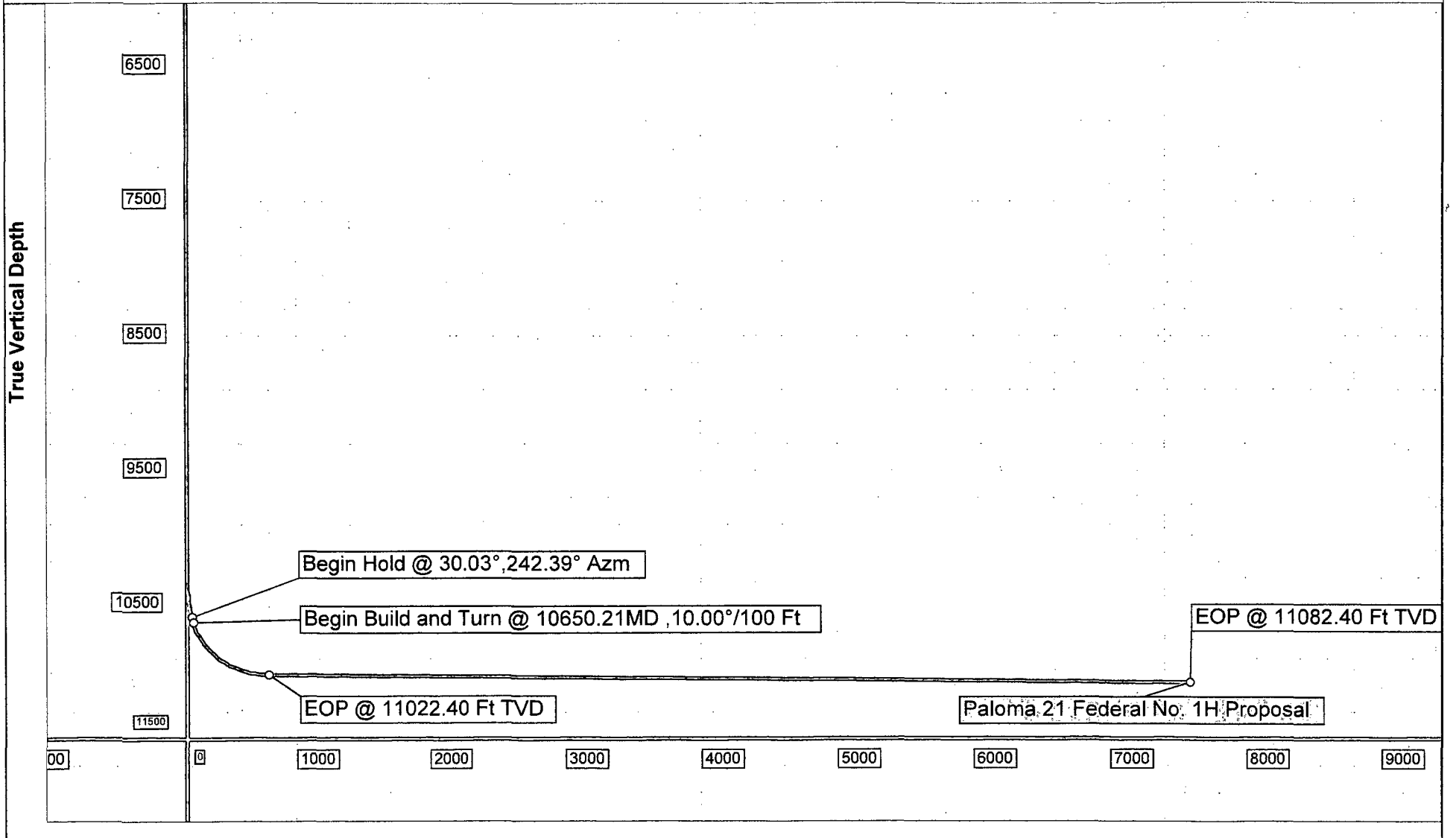


## 5 ½" 17# P-110 Tejas Tubular Reduced Stress TTRS1®

| | | | |
|---|---|---|---|
| **Pipe Dimensions** | | | |
| Pipe O.D. (Nominal) | | | 5.500" |
| Pipe Weight | | | 17.00 lbs./ft. |
| Pipe I.D. (Nominal) | | | 4.892" |
| Pipe Wall | | | 0.304" |
| Pipe Drift | | | 4.767" |
| **Connection Dimensions** | | | |
| Coupling O.D. | | | 6.050" |
| Coupling I.D. | | | 4.892" |
| Coupling Length | | | 9.250" |
| Make-Up Loss | | | 4.125" |
| Threads Per Inch | | | 5 TPI |
| **Connection Efficiency** | | | |
| Tensile Yield Strength | | | 546,000 lbs. |
| Internal Pressure | | | 10,640 psi |
| Collapse Strength | | | 7,480 psi |
| Compression Strength | | | 546,000 lbs. |
| Tested Working Bending Rate | | | 20°/100 ft. |
| Bending Rate (Calculated) | | | 91°/100 ft. |
| **Make-Up Torque (ft.-lbs.)** | | | |
| •Minimum | | 6,800 ft.-lbs. | |
| •Optimum – Recommended Make-Up | | | 7,200 ft.-lbs. |
| •Maximum | | 15,500 ft.-lbs. | |
| •Yield Torque | 0312 | 17,000 ft.-lbs. | |

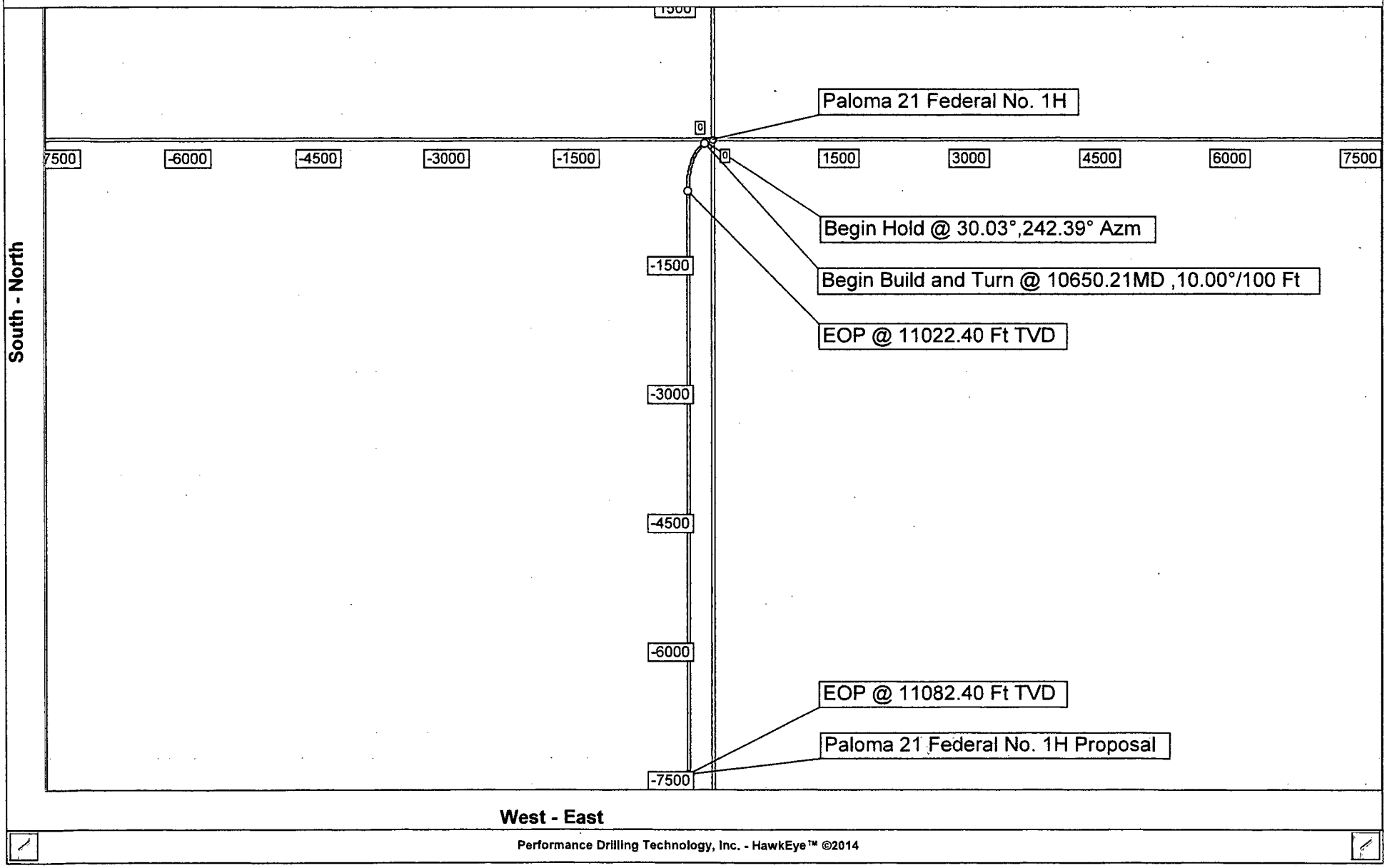
**Job Number:** 2901
**Company:** Fasken Oil and Ranch .com
**Lease/Well:** Paloma 21 Federal No. 1H
**Location:** Southeast New Mexico
**Rig Name:**
**State/County:** New Mexico/ Lea
**Country:** USA
**API Number:**

**Elevation (To MSL):** 3637.40 ft
**RKB:** 25.00 ft
**Projection System:** US State Plane 1927 (Exact solution)
**Projection Group:** New Mexico East 3001
**Projection Datum:** CLARKE 1866
**Magnetic Declination:** 7.28
**Grid Convergence:** 0.41026 E
**Date:** Friday, February 14, 2014



**Job Number:** 2901
**Company:** Fasken Oil and Ranch .com
**Lease/Well:** Paloma 21 Federal No. 1H
**Location:** Southeast New Mexico
**Rig Name:**
**State/County:** New Mexico/ Lea
**Country:** USA
**API Number:**

**Elevation (To MSL):** 3637.40 ft
**RKB:** 25.00 ft
**Projection System:** US State Plane 1927 (Exact solution)
**Projection Group:** New Mexico East 3001
**Projection Datum:** CLARKE 1866
**Magnetic Declination:** 7.28
**Grid Convergence:** 0.41026 E
**Date:** Friday, February 14, 2014

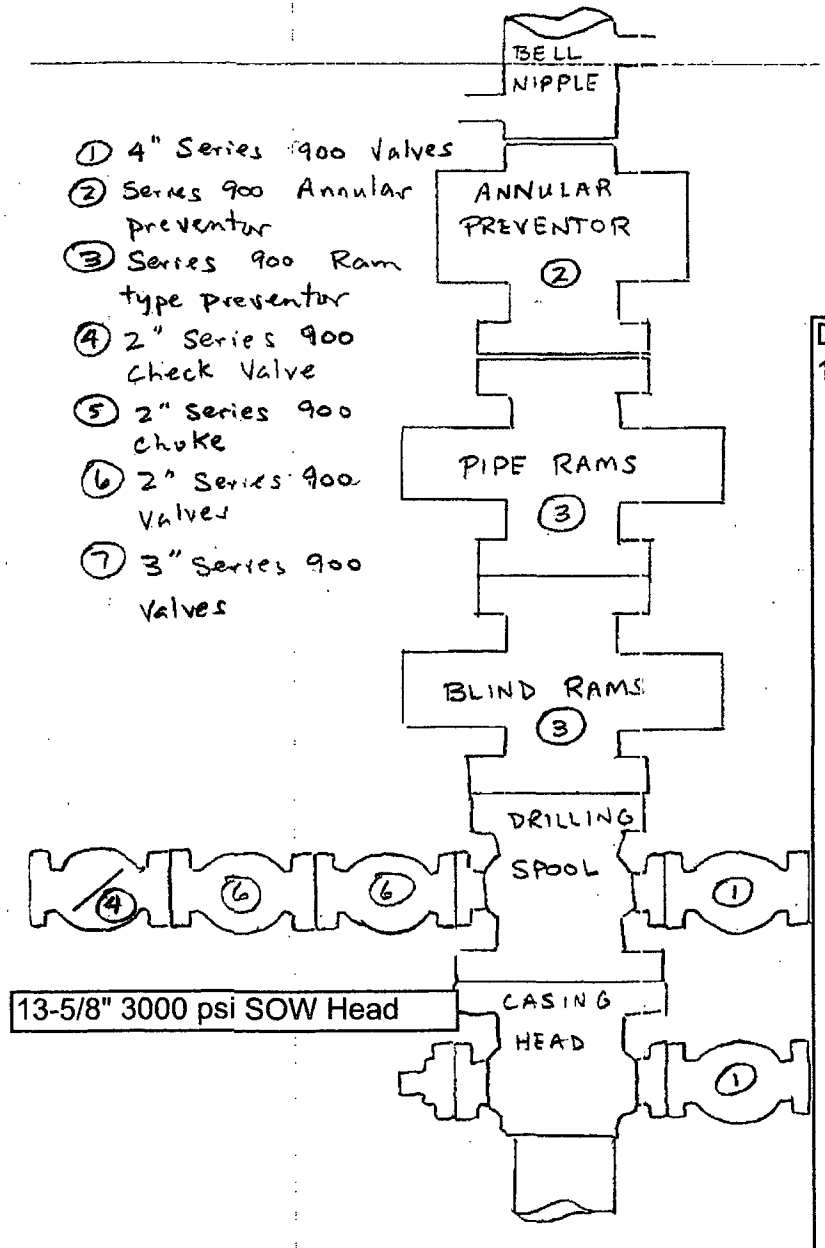


| | | | |
|---|---|---|---|
| **Job Number:** | 2901 | **Elevation GL:** | 3637.40 ft RKB: 25.00 ft |
| **Company:** | Fasken Oil and Ranch ~~.com~~ | **Projection System:** | US State Plane 1927 (Exact solution) |
| **Lease/Well:** | Paloma 21 Federal No. 1H | **Projection Group:** | New Mexico East 3001 |
| **Location:** | Southeast New Mexico | **Projection Datum:** | CLARKE 1866 |
| **Rig Name:** | | **Mag. Declination:** | 7.28° (C:\HawkEye\IGRF2005.MIF) |
| **State/County:** | New Mexico/ Lea | **Grid Convergence:** | 0.41026 E |
| **Country:** | USA | **Date:** | Friday, February 14, 2014 |

**Calculated by HawkEye Software**
**Minimum Curvature Method**
**Vertical Section Plane 180.00°**
**Northing (US ft): 570184.11 Easting (US ft): 734806.70**
**Latitude: 32°33'54.8366" N Longitude: -103°34'16.2352" W**
**Well Location: 197.35 FNL, 645.54 FWL, Section 21, T20S, R34E, New Mexico Principal Meridian, Lea County, NM**
**Direction Reference: Grid North**

| Measured Depth (Ft) | INC Deg | AZM Deg | TVD (Ft) | EW (Ft) | NS (Ft) | VS (Ft) | Closure (Ft) | Walk Rate °/100 Ft | Build Rate °/100 Ft | Subsea TVD (Ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -3662.40 |
| 1000.00 | 0.00 | 0.00 | 1000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -2662.40 |
| 2000.00 | 0.00 | 0.00 | 2000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -1662.40 |
| 3000.00 | 0.00 | 0.00 | 3000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -662.40 |
| 4000.00 | 0.00 | 0.00 | 4000.00 | 0.00 | 0.01 | -0.01 | 0.01 | 0.00 | 0.00 | 337.60 |
| 5000.00 | 0.00 | 0.00 | 5000.00 | 0.00 | 0.01 | -0.01 | 0.01 | 0.00 | 0.00 | 1337.60 |
| 6000.00 | 0.00 | 0.00 | 6000.00 | 0.00 | 0.01 | -0.01 | 0.01 | 0.00 | 0.00 | 2337.60 |
| 7000.00 | 0.00 | 0.00 | 7000.00 | 0.00 | 0.01 | -0.01 | 0.01 | 0.00 | 0.00 | 3337.60 |
| 8000.00 | 0.00 | 0.00 | 8000.00 | 0.00 | 0.01 | -0.01 | 0.01 | 0.00 | 0.00 | 4337.60 |
| 9000.00 | 0.00 | 0.00 | 9000.00 | 0.00 | 0.01 | -0.01 | 0.01 | 0.00 | 0.00 | 5337.60 |
| 10000.00 | 0.00 | 0.00 | 10000.00 | 0.00 | 0.02 | -0.02 | 0.02 | 0.00 | 0.00 | 6337.60 |
| 10300.00 | 0.00 | 0.00 | 10300.00 | 0.00 | 0.02 | -0.02 | 0.02 | 0.00 | 0.00 | 6637.60 |
| 10400.00 | 10.00 | 242.39 | 10399.49 | -7.71 | -4.02 | 4.02 | 8.70 | -117.61 | 10.00 | 6737.09 |
| 10500.00 | 20.00 | 242.39 | 10495.96 | -30.62 | -16.00 | 16.00 | 34.55 | 0.00 | 10.00 | 6833.56 |
| 10600.00 | 30.00 | 242.39 | 10586.48 | -68.02 | -35.56 | 35.56 | 76.75 | 0.00 | 10.00 | 6924.08 |
| 10600.35 | 30.03 | 242.39 | 10586.78 | -68.17 | -35.64 | 35.64 | 76.93 | 0.00 | 10.00 | 6924.38 |
| 10650.21 | 30.03 | 242.39 | 10629.94 | -90.29 | -47.21 | 47.21 | 101.88 | 0.00 | 0.00 | 6967.54 |
| 10750.21 | 35.21 | 226.43 | 10714.30 | -133.46 | -78.75 | 78.75 | 154.96 | -15.95 | 5.17 | 7051.90 |
| 10850.21 | 41.96 | 214.56 | 10792.53 | -173.42 | -126.28 | 126.28 | 214.52 | -11.87 | 6.76 | 7130.13 |
| 10950.21 | 49.65 | 205.61 | 10862.25 | -208.94 | -188.33 | 188.33 | 281.29 | -8.96 | 7.68 | 7199.85 |
| 11050.21 | 57.88 | 198.55 | 10921.36 | -238.95 | -263.03 | 263.03 | 355.36 | -7.06 | 8.23 | 7258.96 |
| 11150.21 | 66.44 | 192.68 | 10968.05 | -262.54 | -348.11 | 348.11 | 436.01 | -5.86 | 8.56 | 7305.65 |
| 11250.21 | 75.18 | 187.54 | 11000.91 | -278.99 | -440.97 | 440.97 | 521.82 | -5.14 | 8.75 | 7338.51 |
| 11350.21 | 84.04 | 182.81 | 11018.94 | -287.80 | -538.81 | 538.81 | 610.86 | -4.73 | 8.85 | 7356.54 |
| 11411.53 | 89.49 | 180.00 | 11022.40 | -289.30 | -599.99 | 599.99 | 666.10 | -4.59 | 8.89 | 7360.00 |
| 12411.53 | 89.49 | 180.00 | 11031.27 | -289.30 | -1599.95 | 1599.95 | 1625.90 | 0.00 | 0.00 | 7368.87 |
| 13411.53 | 89.49 | 180.00 | 11040.10 | -289.30 | -2599.91 | 2599.91 | 2615.96 | 0.00 | 0.00 | 7377.70 |
| 14411.53 | 89.49 | 180.00 | 11048.93 | -289.30 | -3599.88 | 3599.88 | 3611.48 | 0.00 | 0.00 | 7386.53 |
| 15411.53 | 89.49 | 180.00 | 11057.76 | -289.30 | -4599.84 | 4599.84 | 4608.93 | 0.00 | 0.00 | 7395.36 |
| 16411.53 | 89.49 | 180.00 | 11066.59 | -289.30 | -5599.80 | 5599.80 | 5607.27 | 0.00 | 0.00 | 7404.19 |
| 17411.53 | 89.49 | 180.00 | 11075.43 | -289.30 | -6599.76 | 6599.76 | 6606.10 | 0.00 | 0.00 | 7413.03 |
| 18205.00 | 89.49 | 180.00 | 11082.43 | -289.30 | -7393.20 | 7393.20 | 7398.86 | 0.00 | 0.00 | 7420.03 |

Exhibit J -- 5000# BOP COM
Paloma "21" Federal No. 1H
Fasken Oil and Ranch, Ltd.
SHL: 200' FNL & 675' FWL, Sec. 21, T20S, R34E
BHL: 2310' FNL & 330' FWL, Sec. 28, T20S, R34E
Lea County, NM

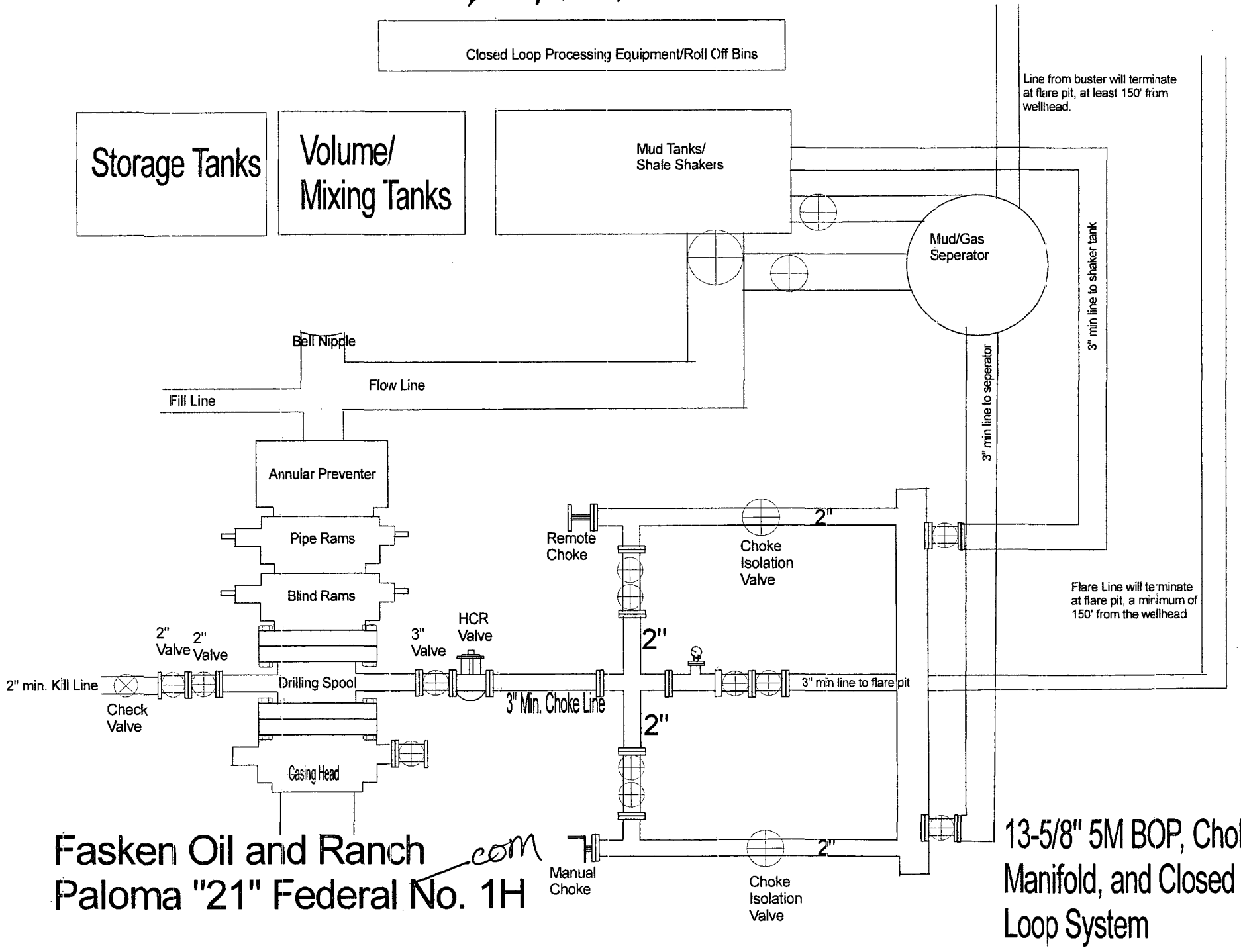



1. 4" Series 900 Valves
2. Series 900 Annular preventor
3. Series 900 Ram type preventor
4. 2" Series 900 Check Valve
5. 2" Series 900 choke
6. 2" Series 900 Valves
7. 3" Series 900 Valves

13-5/8" 3000 psi SOW Head

Drilling Spool is
13-5/8" 3000 psi X 13-5/8"" 5000 psi

Exhibit K




Fasken Oil and Ranch .com
Paloma "21" Federal No. 1H

13-5/8" 5M BOP, Choke Manifold, and Closed Loop System

Exhibit B

# Plat for Closed Loop System

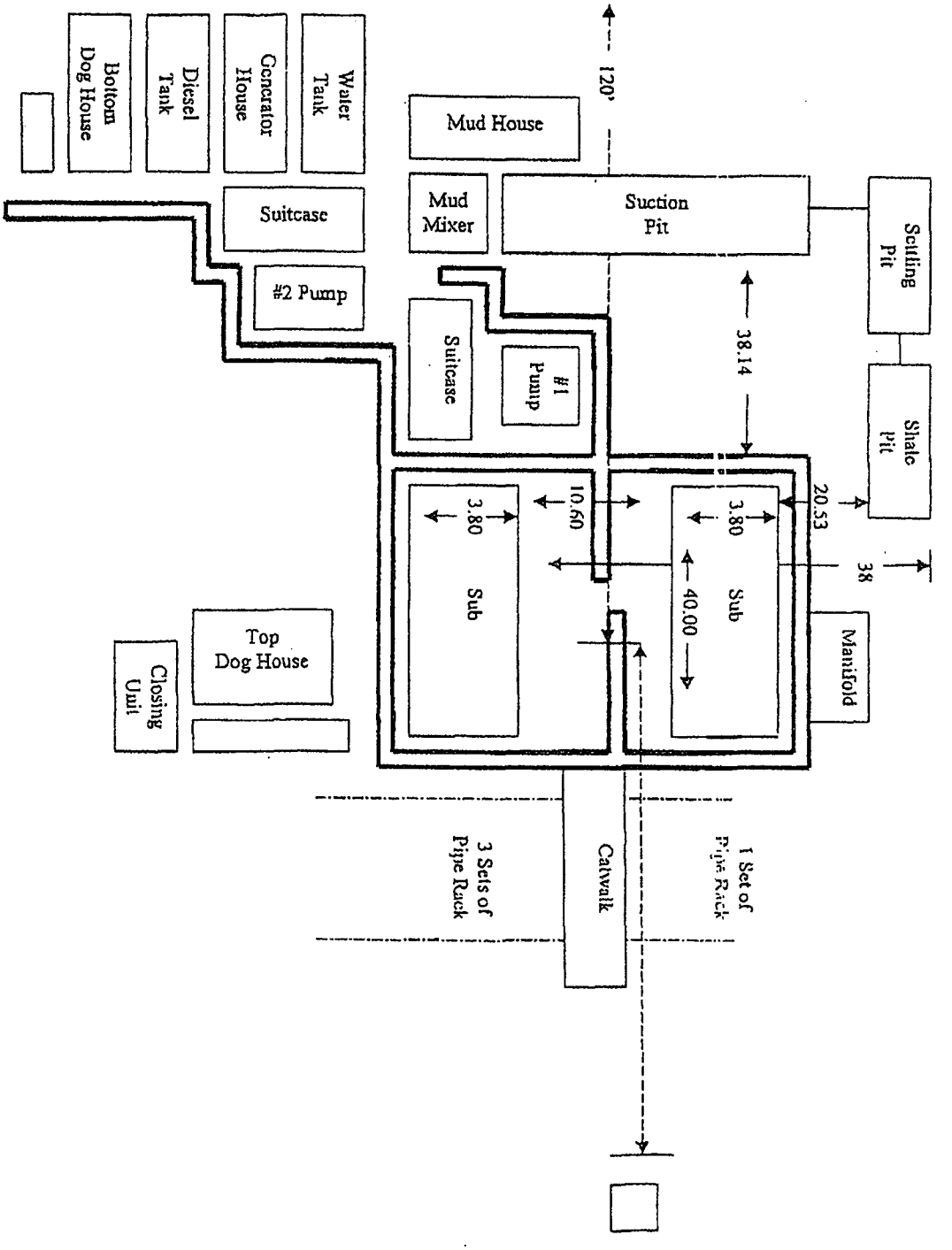


**EXHIBIT A**

Rig Plat Only .com
PALOMA 21 FEDERAL #1H
V-DOOR WEST