District I
1625 N. French Dr , Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-101
May 27, 2004

Submit to appropriate District Office

☐ AMENDED REPORT

# APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

| [1] Operator Name and Address | [2] OGRID Number |
|---|---|
| APPROACH OPERATING, LLC<br>6300 RIDGLEA PLACE, SUITE 1107<br>FORT WORTH, TX 76116 | 248343 |
| | [3] API Number<br>30 – 039- 30386 |

| [3] Property Code | [5] Property Name | [6] Well No. |
|---|---|---|
| 36761 | SENA | 1 |

| [9] Proposed Pool 1 | [10] Proposed Pool 2 |
|---|---|
| WC 28N4E10 ; [illegible] MANCOS | |

## [7] Surface Location

| UL or lot no | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| M | 10 | 28N | 4E | G94 | 350 | SOUTH | 495 | WEST | RIO ARRIBA |

## [8] Proposed Bottom Hole Location If Different From Surface

| UL or lot no | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

## Additional Well Information

| [11] Work Type Code | [12] Well Type Code | [13] Cable/Rotary | [14] Lease Type Code | [15] Ground Level Elevation |
|---|---|---|---|---|
| N | O | ROTARY | P | 7955 78' LSD |
| **[16] Multiple** | **[17] Proposed Depth** | **[18] Formation** | **[19] Contractor** | **[20] Spud Date** |
| N | 2000 | GRANEROS | BEARCAT DRLG CO | ASAP |

| Depth to Groundwater >100 FEET | Distance from nearest fresh water well >1000 FEET | Distance from nearest surface water >200 FEET: Nutrias Ditch No. 1 |
|---|---|---|

Pit: Liner: Synthetic ☒ 6 mils thick Clay ☐ Pit Volume: 4000 bbls Drilling Method:
Closed-Loop System ☐ Fresh Water ☐ Brine ☐ Diesel/Oil-based ☐ Gas/Air ☒

## [21] Proposed Casing and Cement Program

| Hole Size | Casing Size | Casing weight/foot | Setting Depth | Sacks of Cement | Estimated TOC |
|---|---|---|---|---|---|
| 12 ¼" | 9 5/8" | 32.3# | 350' | 210 | SURFACE |
| 8 ¾" | 4 ½" | 10.5# | 1700' | 500 | SURFACE |
| | | | | | |
| | | | | | |

[22] Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

Propose to drill into the Graneros Sh. exploring for oil and/or gas in all formations encountered.

(1) Shafco 11" Double Ram 3000# LWS
(1) Grant 11" rotating head, 3000#
(1) 5000# choke manifold
(1) Koomey 3 station 3000# w/air/hydraulic pump
(4) 10 gallon bottles

RCVD SEP 27 '07
OIL CONS. DIV.
DIST. 3

[23] I hereby certify that the information given above is true and complete to the best of my knowledge and belief. **I further certify that the drilling pit will be constructed according to NMOCD guidelines ☐, a general permit ☒, or an (attached) alternative OCD-approved plan ☐.**

Signature: Glenn W. Reed

Printed name: Glenn W. Reed, P. E.

Title: Senior Vice-President of Operations

E-mail Address: gwreed@approachresources.com

Date: September 24, 2007 Phone (817) 989-9000

| OIL CONSERVATION DIVISION | |
|---|---|
| Approved by: | |
| Title: | |
| Approval Date: | Expiration Date: |
| | |
| Conditions of Approval Attached ☐ | |

OCT 0 3 2007-ow

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

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

| 1 API Number | 2 Pool Code | 3 Pool Name |
|---|---|---|
| 30-039-30388 | 97646 | WC 28N 4E 10; Mancos Oil |

| 4 Property Code | 5 Property Name | 6 Well Number |
|---|---|---|
| 36761 | Sena | #1 |

| 7 OGRID No. | 8 Operator Name | 9 Elevation |
|---|---|---|
| 248343 | Approach Operating LLC | 7955.78' |

## 10 Surface Location

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| M | **10 | **28N | **04E | G 94 | 350 | SOUTH | 495 | WEST | RIO ARRIBA |

## 11 Bottom Hole Location If Different From Surface

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

| 12 Dedicated Acres | 13 Joint or Infill | 14 Consolidation Code | 15 Order No. |
|---|---|---|---|
| 40 | | | |

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

**Projection within the Tierra Amarilla Land Grant

16

SENA NO. 1

Latitude - 36°40'08.61650N
Longitude - 106°30'27.29027W

New Mexico State Plane Coordinate System - Central Zone

x - 424,827.891
y - 2,063,805.360

495' Sena #1
350'

## 17 OPERATOR CERTIFICATION

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

James L. Scott 9-26-2007
Signature Date

Printed Name
JAMES S. SCOTT

## 18 SURVEYOR CERTIFICATION

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

Date of Survey 19 September 2007

Signature and Seal of Professional Surveyor:

GILBERTO ARCHULETA NEW MEXICO 13976 REGISTERED PROFESSIONAL SURVEYOR

Gilberto Archuleta
No. 13976
Certificate Number

Submit 3 Copies To Appropriate District Office
District I
1625 N French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
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State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
May 27, 2004

WELL API NO. 30-039-30386
5. Indicate Type of Lease STATE ☐ FEE ☒
6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: SENA
8. Well Number: 1
1. Type of Well: Oil Well ☒ Gas Well ☐ Other
2. Name of Operator: APPROACH OPERATING, LLC
9. OGRID Number: 248343
3. Address of Operator: 6300 RIDGLEA PLACE, SUITE 1107, FORT WORTH, TX 76116
10. Pool name or Wildcat: WILDCAT

4. Well Location
Unit Letter ____ : 350 feet from the SOUTH line and 495 feet from the WEST line
Section 10 Township 28N Range 4E NMPM County RIO ARRIBA

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)* 7955.78' LSD

Pit or Below-grade Tank Application ☒ or Closure ☐
*Pit type* reserve *Depth to Groundwater* >100' *Distance from nearest fresh water well* >1000' *Distance from nearest surface water* >1000'
Pit Liner Thickness: 6 mil Below-Grade Tank: Volume ____ bbls; Construction Material

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

| NOTICE OF INTENTION TO: | | SUBSEQUENT REPORT OF: | |
|---|---|---|---|
| PERFORM REMEDIAL WORK ☐ | PLUG AND ABANDON ☐ | REMEDIAL WORK ☐ | ALTERING CASING ☐ |
| TEMPORARILY ABANDON ☐ | CHANGE PLANS ☐ | COMMENCE DRILLING OPNS. ☐ | P AND A ☐ |
| PULL OR ALTER CASING ☐ | MULTIPLE COMPL ☐ | CASING/CEMENT JOB ☐ | |
| OTHER: RESERVE PIT APPLICATION ☒ | | OTHER: ☐ | |

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Propose to build blooie line/reserve pit in process of drilling exploration well for oil or gas

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☒ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Glenn W. Reed TITLE Senior Vice President of Operations DATE Septemeber 24, 2007

Type or print name Glenn W. Reed, P. E. E-mail address: gwreed@approachresources.com Telephone No. (817) 989-9000

**For State Use Only**

APPROVED BY: ____ TITLE Deputy Oil & Gas Inspector, District #3 DATE OCT 03 2007

Conditions of Approval (if any):


Approach Resources Inc.

*SENA 1*

Rio Arriba Co., NM

By: O. MELENDEZ

MAP PROJECTION
Datum: North American 1927 (NAD27)
State Plane: New Mexico Central (NAD27)
XY Units : FEET

0 747
FEET

June 18, 2008

PETRA 6/18/2008 10:24:04 AM

District I
1625 N. French Dr., Hobbs, NM 88240
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811 W. Grand Avenue, Artesia, NM 88210
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State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
June 16, 2008

**For temporary pits, closed-loop systems, and below-grade tanks**, submit to the appropriate NMOCD District Office.
**For permanent pits and exceptions** submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

# Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

Type of action: ☒ Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method
☐ Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method

***Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request***

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

Operator: Approach Operating, LLC OGRID #: 248343
Address: 6500 West Freeway, Suite 800 Fort Worth, TX 76116
Facility or well name: Sena No. 1
API Number: 30-039-30386 OCD Permit Number:
U/L or Qtr/Qtr M Section 10 Township 28N Range 4E County: Rio Arriba
Center of Proposed Design: Latitude Longitude NAD: ☒ 1927 ☐ 1983
Surface Owner: ☐ Federal ☐ State ☒ Private ☐ Tribal Trust or Indian Allotment

☐ **Pit:** Subsection F or G of 19.15.17.11 NMAC
Temporary: ☐ Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation
☐ Lined ☐ Unlined
Liner type: Thickness _____mil ☐ LLDPE ☐ HDPE ☐ PVC
☐ Other _____ ☐ String-Reinforced
Seams: ☐ Welded ☐ Factory ☐ Other _____
Volume: _____bbl Dimensions: L_____ x W_____ x D_____

☒ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC
☐ Drying Pad ☐ Tanks ☐ Haul-off Bins ☐ Other _____
☐ Lined ☐ Unlined
Liner type: Thickness N/A mil ☐ LLDPE ☐ HDPE ☐ PVC
☐ Other _____
Seams: ☐ Welded ☐ Factory ☐ Other _____
Volume: N/A bbl N/A $yd^3$
Dimensions: Length N/A x Width N/A

☐ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume: _____bbl
Type of fluid: _____
Tank Construction material: _____
☐ Secondary containment with leak detection
☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner
☐ Visible sidewalls only
☐ Other _____
Liner type: Thickness _____mil ☐ HDPE ☐ PVC
☐ Other _____

**Fencing:** Subsection D of 19.15.17.11 NMAC
☐ Chain link, six feet in height, two strands of barbed wire at top
☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet
**Netting:** Subsection E of 19.15.17.11 NMAC
☐ Screen ☐ Netting ☐ Other _____
☐ Monthly inspections
**Signs:** Subsection C of 19.15.17.11 NMAC
☐ 12'x24', 2' lettering, providing Operator's name, site location, and emergency telephone numbers
☐ Signed in compliance with 19.15.3.103 NMAC

☐ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

**Administrative Approvals and Exceptions:**
Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.
***Please check a box if one or more of the following is requested, if not leave blank:***
☐ Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval.
☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

**Siting Criteria (regarding permitting):** 19.15.17.10 NMAC

***Instructions:*** ***The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance.*** **Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.**

| | |
|---|---|
| Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells | ☐ Yes ☐ No |
| Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).<br>- Topographic map; Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.<br>*(Applies to temporary, emergency, or cavitation pits and below-grade tanks)*<br>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image | ☐ Yes ☐ No<br>☐ NA |
| Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.<br>*(Applies to permanent pits)*<br>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image | ☐ Yes ☐ No<br>☐ NA |
| Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.<br>- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.<br>- Written confirmation or verification from the municipality; Written approval obtained from the municipality | ☐ Yes ☐ No |
| Within 500 feet of a wetland.<br>- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| Within the area overlying a subsurface mine.<br>- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division | ☐ Yes ☐ No |
| Within an unstable area.<br>- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map | ☐ Yes ☐ No |
| Within a 100-year floodplain.<br>- FEMA map | ☐ Yes ☐ No |

**Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist:** Subsection B of 19.15.17.9 NMAC

***Instructions:*** ***Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.15 NMAC
- ☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.15 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

**Closed-loop Systems Permit Application Attachment Checklist:** Subsection B of 19.15.17.9 NMAC

***Instructions:*** ***Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Geologic and Hydrogeologic Data (required for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.15
- ☐ Siting Criteria Compliance Demonstrations (required for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☒ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☒ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____

**Permanent Pits Permit Application Checklist:** Subsection B of 19.15.17.9 NMAC

***Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.15 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including $H_2S$, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

**Proposed Closure:** 19.15.17.13 NMAC

Type: ☐ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ Permanent Pit ☐ Below-grade Tank ☐ Closed-loop System ☐ Alternative

Proposed Closure Method: ☐ Waste Excavation and Removal
☐ On-site Closure Method (only for temporary pits and closed-loop systems)
☐ In-place Burial ☐ On-site Trench Burial
☐ Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

**Siting Criteria (regarding on-site closure methods only):** 19.15.17.10 NMAC

***Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.***

| | |
|---|---|
| Ground water is less than 50 feet below the bottom of the buried waste.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells | ☐ Yes ☐ No<br>☐ NA |
| Ground water is between 50 and 100 feet below the bottom of the buried waste<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells | ☐ Yes ☐ No<br>☐ NA |
| Ground water is more than 100 feet below the bottom of the buried waste.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells | ☐ Yes ☐ No<br>☐ NA |
| Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).<br>- Topographic map; Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.<br>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image | ☐ Yes ☐ No |
| Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.<br>- NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.<br>- Written confirmation or verification from the municipality; Written approval obtained from the municipality | ☐ Yes ☐ No |
| Within 500 feet of a wetland.<br>- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site | ☐ Yes ☐ No |
| Within the area overlying a subsurface mine.<br>- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division | ☐ Yes ☐ No |
| Within an unstable area.<br>- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map | ☐ Yes ☐ No |
| Within a 100-year floodplain.<br>- FEMA map | ☐ Yes ☐ No |

**Waste Excavation and Removal Closure Plan Checklist:** (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

**Waste Removal Closure For Closed-loop Systems That Utilize Haul-off Bins Only:** (19.15.17.13.D NMAC) ***Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings.***

Disposal Facility Name: Basin Disposal, Inc. Disposal Facility Permit Number: NM-01-0005

**On-Site Closure Plan Checklist:** (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- ☐ Construction and Design of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- ☐ Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
- ☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

**Operator Application Certification:**

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Glenn W. Reed, P. E. Title: Executive Vice President – Operations and Engineering

Signature: Glenn W Reed Date: 6-18-08

e-mail address: gwreed@approachresources.com Telephone: 817-989-9000

**OCD Approval:** ☐ Permit Application (including closure plan) ☐ Closure Plan (only)

**OCD Representative Signature:** _____ **Approval Date:** _____

**Title:** _____ **OCD Permit Number:** _____

**Closure Report (required within 60 days of closure completion):** Subsection K of 19.15.17.13 NMAC

☐ **Closure Completion Date:** _____

**Closure Method:**

☐ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method

☐ If different from approved plan, please explain.

**Closure Report Attachment Checklist:** ***Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.***

- ☐ Proof of Closure Notice
- ☐ Proof of Deed Notice (if applicable)
- ☐ Plot Plan
- ☐ Confirmation Sampling Analytical Results
- ☐ Waste Material Sampling Analytical Results
- ☐ Disposal Facility Name and Permit Number
- ☐ Soil Backfilling and Cover Installation
- ☐ Re-vegetation Application Rates and Seeding Technique
- ☐ Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude _____ Longitude _____ NAD: ☐1927 ☐ 1983

**Operator Closure Certification:**

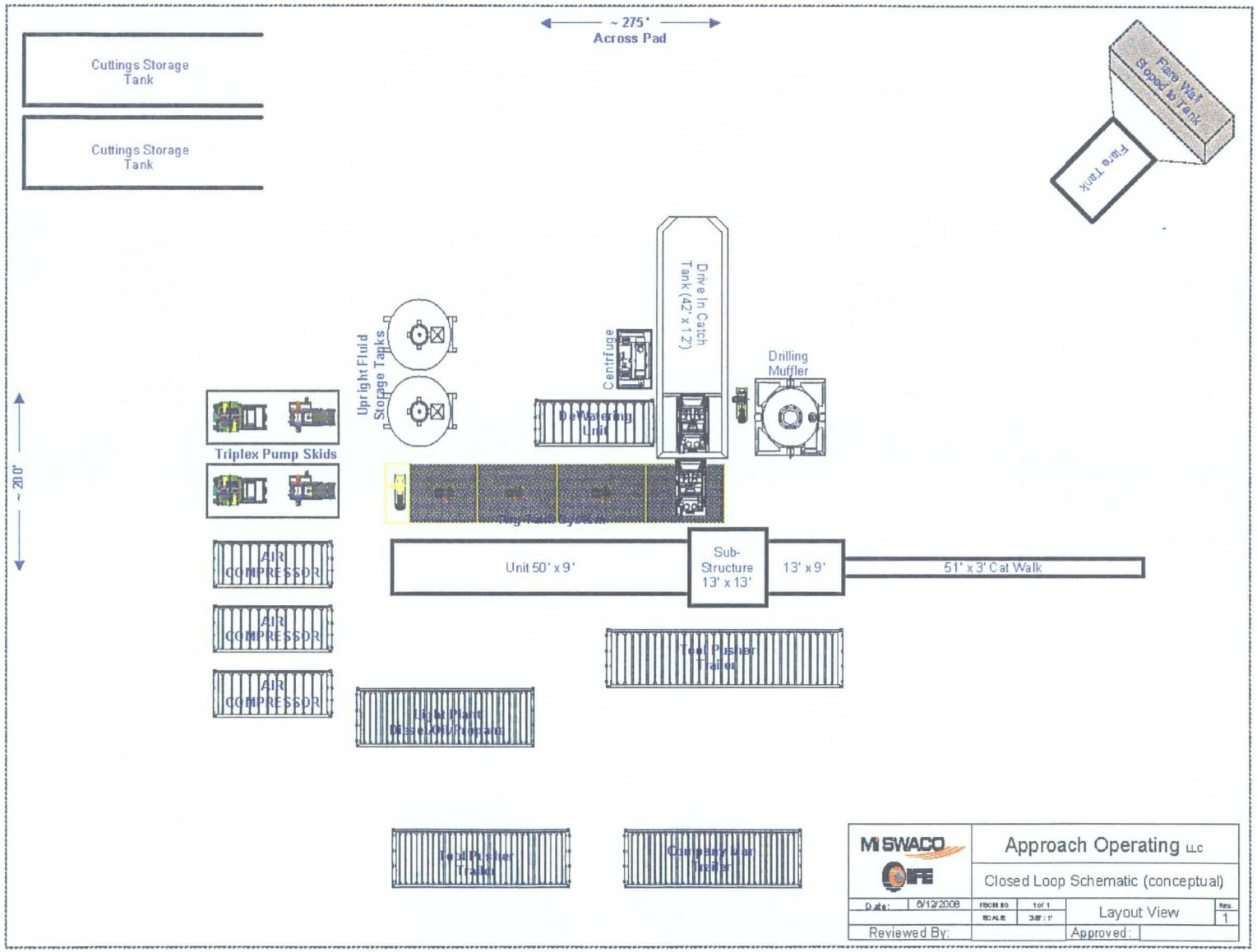
I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): _____ Title: _____

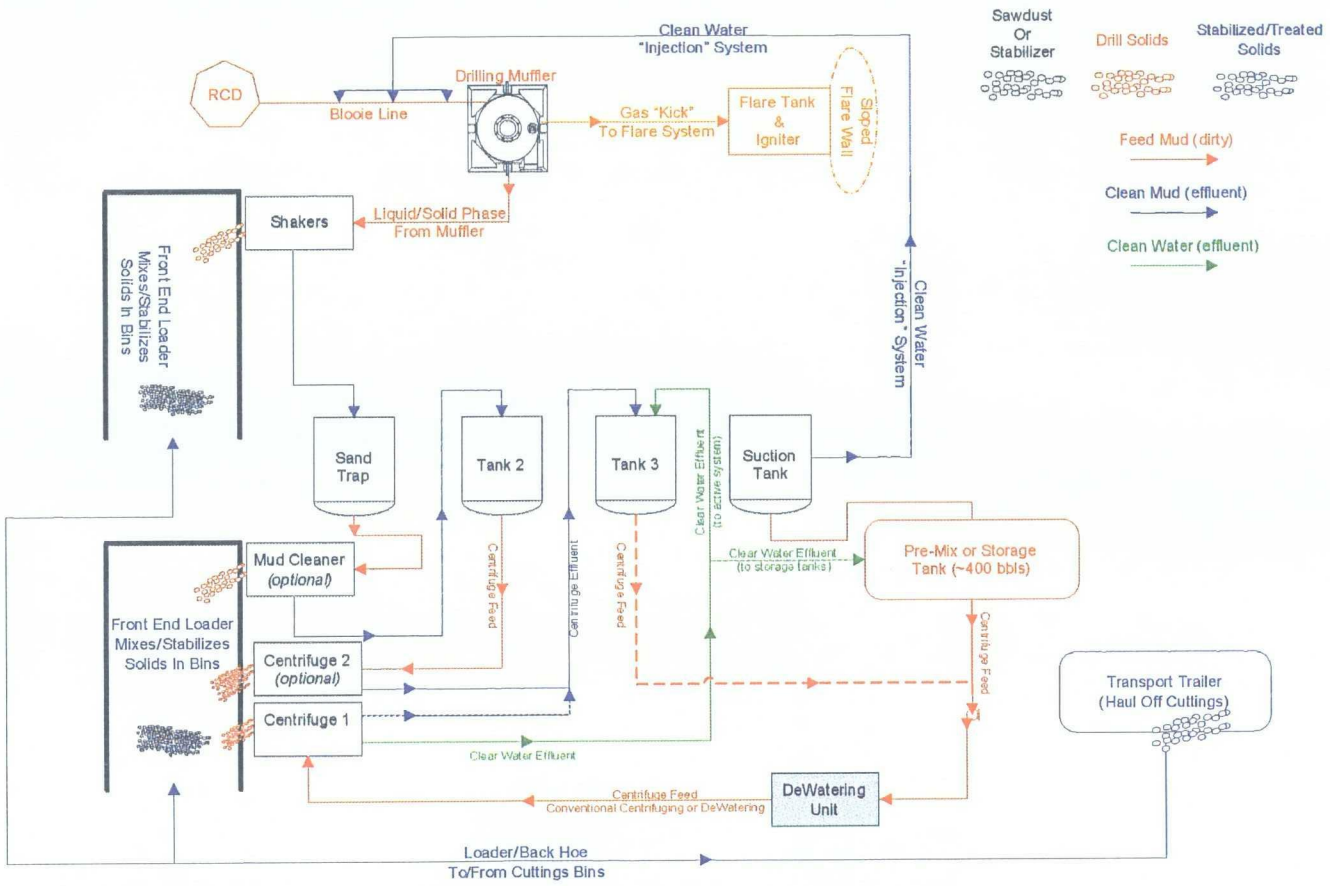
Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

# Closed-Loop Schematic



# Closed-Loop Schematic




| | | | | | |
|---|---|---|---|---|---|
| MI SWACO / OFE | | Approach Operating LLC | | | |
| | | Closed Loop Schematic (conceptual) | | | |
| Date | 8/12/2008 | FSCM NO | 1 of1 | Flow Process | Rev 1 |
| | | SCALE: | 3/8": 1' | | |
| Reviewed By: | | | | Approved: | |

APPROACH OPERATING, LLC.
OPERATIONS PLAN

I. Location: LAT Date: June 18, 2008
LONG
Rio Arriba County, NM

Field: Wildcat Elev: GL
Surface:

II. Drilling
A. Contractor: TBD
B. Mud Program:

The surface hole will be drilled with a air, if possible, or fresh water mud.

The production hole will be drilled with air or air/mist.

C. Minimum Blowout Control Specifications:

Double ram type 3000 psi working pressure BOP with a rotating head. See the attached Exhibit # __ for details on the BOP equipment. All ram type preventers and related equipment will be hydraulically tested at nipple-up and after any use under pressure to 1500 psi.

The blind ram will be hydraulically activated and checked for operational readiness each time pipe is pulled out of the hole. All check of the BOP stack and equipment will be noted on the daily drilling report. The BOP equipment will include a kelly cock, floor safety valve, and choke manifold all rated to 2000 psi.

No over pressured zones are expected in this well. No H2S zones expected, but compliance packs will be on location.

III. Logging program: Induction / GR and density logs at TD.

IV. Materials
A. Casing Program:

| Hole Size | Depth | Casing Size | Wt & Grade |
|---|---|---|---|
| 12-1/4" | 350' | 9-5/8" | 32.3# H-40 |
| 8-3/4" | 2000' | 4-1/2" | 10.5# J-55 |

B. Float Equipment

a. Surface Casing: Notched collar on bottom and 3 centralizers on the bottom 3 joints.

b. Production Casing: 4-1/2" whirler type cement nosed guide shoe and a float collar on top of the shoe joint. Centralized with bow spring centralizers

V. Cementing:

- Surface Casing: 9-5/8" 32.3 lb/ft H-40 set to 350'.

Cement 0-350'
Fluid 1: Water Based Spacer
Water
lbm/gal

Fluid Density: 8.330
Fluid Volume: 10 bbl

Fluid 2: Lead Cement
Premium Cement
lbm/gal
94 lbm/sk Premium Cement (Cement)
0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)
Gal/sk
2 % Calcium Chloride (Accelerator)

Fluid Weight 15.600
Slurry Yield: 1.180 $ft^3/sk$
Total Mixing Fluid: 5.238
Top of Fluid: 0 ft
Calculated Fill: 350 ft
Volume: 42.139 bbl
Calculated Sacks: 200.503 sks
Proposed Sacks: 205 sks

Fluid 3: Water Based Spacer
Water Displacement
lbm/gal

Fluid Density: 8.330

Fluid Volume: 23.966 bbl

- Production Casing: 4-1/2" 10.5 lb/ft J-55 casing set to TD.

Cement
Fluid Instructions
Fluid 1: Water Based Spacer
Water
lbm/gal

Fluid Density: 8.330

Fluid Volume: 20 bbl

Fluid 2: Lead Cement

| | | |
|---|---|---|
| 50/50 Poz Premium | Fluid Weight | 13 lbm/gal |
| 0.4 % Halad(R)-344 (Low Fluid Loss Control) | Slurry Yield: | 1.436 $ft^3$/sk |
| 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive) | Total Mixing Fluid: | 6.193 |
| Gal/sk | | |
| 5 lbm/sk Gilsonite (Lost Circulation Additive) | Top of Fluid: | 0 ft |
| | Calculated Fill: | 2000 ft |
| | Volume: | 156.266 bbl |
| | Calculated Sacks: | 610.982 sks |
| | Proposed Sacks: | 615 sks |

| | | |
|---|---|---|
| Fluid 3: Water Based Spacer | | |
| Water Displacement | Fluid Density: | 8.330 |
| lbm/gal | | |
| | Fluid Volume: | 31.197 bbl |

- The wells will have 40' of 14" conductor set. Then a 12-1/4" hole will be drilled to about 350' when 9-5/8" surface casing will be set and cemented. We will drill out with a 8-3/4" bit using

## MULTI-POINT SURFACE USE PLAN

1. Existing Roads:

   When existing roads are used to access the proposed location they will be maintained in the same or better condition than presently found.

2. Planned Access Roads:

   Some new access road will have to be constructed. If existing access road is also used, it will be maintained in at least the current condition and will be upgraded where necessary to provide uninterrupted access to the proposed well.

3. Location of Existing Wells:

   Attached map (Plat # 1) shows existing wells within one mile radius of the proposed well. N/A

4. Location of Production Facilities:

   In the event of production, production facilities will be located on the drill pad. The actual placement of this equipment will be determined when the well's production characteristics can be evaluated after completion.

To protect livestock and wildlife, equipment will be fenced. Any tanks will be enclosed by a dike.

Upon completion of drilling, the location and surrounding area will be cleared of all debris.

5. Water Supply:

Water for drilling and completion will be purchased from local sources.

6. Source of Construction Materials:

No additional construction materials will be required to build.

7. Methods of Handling Waste Disposal:

   a. The drill cuttings, fluids and completion fluids will be placed in the steel tanks. Upon completion, the pad will be leveled, contoured and reseeded with the appropriate seed mixture.

   b. All garbage and trash will be placed in a metal trash basket. It will be hauled off and dumped in an approved land fill upon completion of operations.

   c. Portable toilets will be provided and maintained during drilling operations.

8. Ancillary Facilities:

Ancillary facilities are to be based on well productivity. .

9. Well Site Layout:

A plat of the drill pad with location of drilling equipment and rig orientations also attached.

10. Plans for Restoration of Surface:

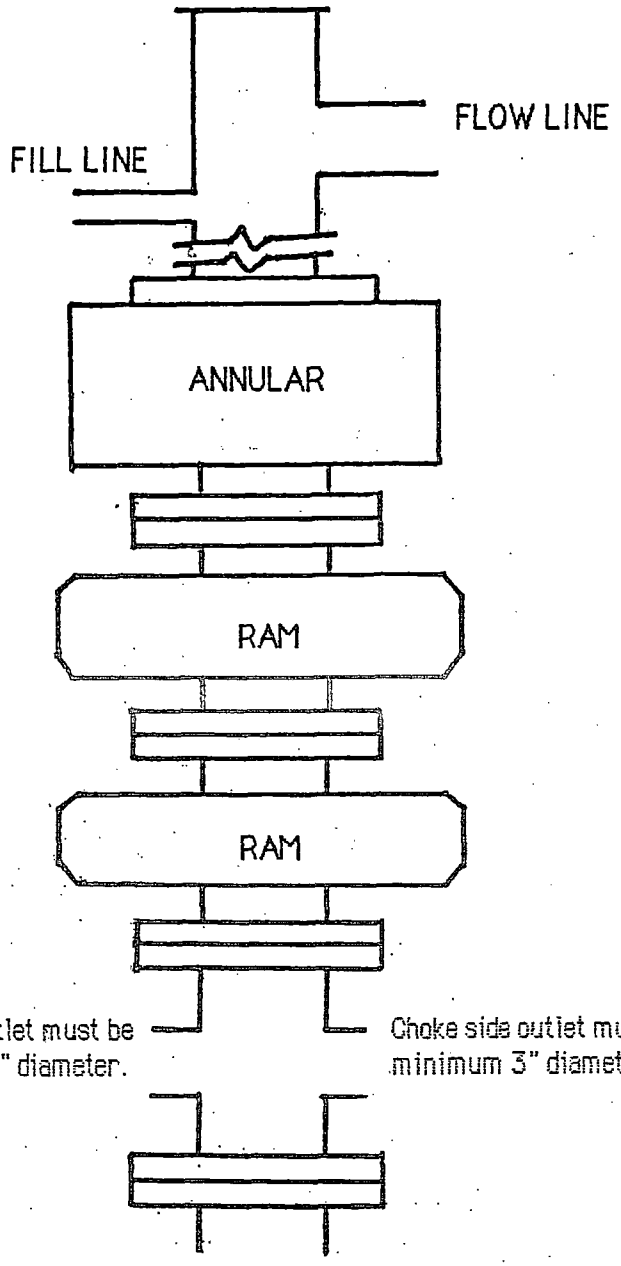
When the well is abandoned the location and access road will be cleaned and restored to the original topographical contours as much as possible. The area will be reseeded with appropriate seed mixture.

If the well is productive, areas not used in production will be contoured and seeded with stipulated seed mixture. Production equipment will be painted to blend with the natural color of the landscape.

11. Lessee's or Operator's Representative:

Glenn W. Reed, Executive Vice President – Engineering & Operations
Approach Resources
6500 West Freeway, Suite 800
Fort Worth, Texas 76116
Phone: (817) 989-9000

Glenn W. Reed
Executive Vice President – Engineering & Operations



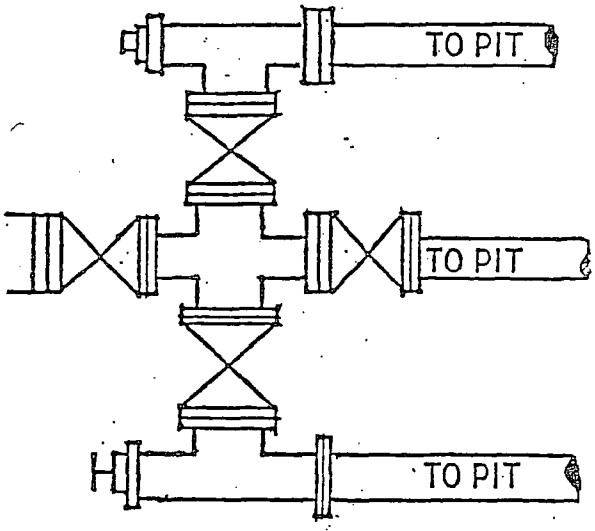

Kill side outlet must be minimum 2" diameter.

Choke side outlet must be minimum 3" diameter.

Kill line will be minimum 2" diameter and have 2 valves, one of which shall be a minimum 2" check valve.

## TYPICAL BOP STACK & CHOKE MANIFOLD

There will be at least 2 chokes and 2 choke line valves (3" minimum). The choke line will be 3" in diameter. There will be a pressure gauge on the choke manifold.




Upper kelly cock will have handle available.
Safety valve and subs will fit all drill string connections in use.
All BOPE connections subjected to well pressure will be flanged, welded, or clamped.

# Approach Resources

## Well Control Equipment Schematic for 3K Service

Attachment to Drilling Technical Program

**Exhibit #1**

**Typical BOP setup**