

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

Form C-101  
May 27, 2004

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

Submit to appropriate District Office  
 AMENDED REPORT

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

Operator Name and Address APPROACH OPERATING, LLC 6300 RIDGLEA PLACE, SUITE 1107 FORT WORTH, TX 76116		OGRID Number 248343
Property Code 36761	Property Name SENA	API Number 30-039-30586
Proposed Pool 1 W C 28 N 4 E 10 - 7 MANCOS		Proposed Pool 2

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	694	350	SOUTH	495	WEST	RIO ARRIBA

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

Work Type Code N	Well Type Code O	Cable/Rotary ROTARY	Lease Type Code P	Ground Level Elevation 7955 78' LSD
Multiple N	Proposed Depth 2000	Formation GRANEROS	Contractor BEARCAT DRLG CO	Spud Date ASAP
Depth to Groundwater >100 FEET		Distance from nearest fresh water well >1000 FEET	Distance from nearest surface water >200 FEET: Nitrate Ditch No. 1	
Liner: Synthetic <input checked="" type="checkbox"/> 6 mils thick Clay <input type="checkbox"/>		Drilling Method: Fresh Water <input type="checkbox"/> Brine <input type="checkbox"/> Diesel/Oil-based <input type="checkbox"/> Gas/Air <input checked="" type="checkbox"/>		

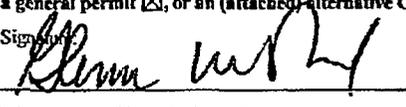
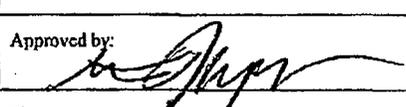
Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
12 1/4"	9 5/8"	32.3#	350'	210	SURFACE
8 3/4"	4 1/2"	10.5#	1700'	500	SURFACE

<sup>22</sup> 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

<sup>23</sup> 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 <input type="checkbox"/> , a general permit <input checked="" type="checkbox"/> , or an (attached) alternative OCD-approved plan <input type="checkbox"/> .		OIL CONSERVATION DIVISION	
Signature: 		Approved by: 	
Printed name: Glenn W. Reed, P. E.		Title:	
Title: Senior Vice-President of Operations		Approval Date:	Expiration Date:
E-mail Address: gwreed@approachresources.com			
Date: September 24, 2007	Phone: (817) 989-9000	Conditions of Approval Attached <input type="checkbox"/>	

OCT 03 2007-aw

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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**

<sup>1</sup> API Number 30039-30386		<sup>2</sup> Pool Code 97646		<sup>3</sup> Pool Name WCL28N4E10; Mancos oil	
<sup>4</sup> Property Code 36761		<sup>5</sup> Property Name Sena			<sup>6</sup> Well Number Sena #1
<sup>7</sup> OGRID No. 248343		<sup>8</sup> Operator Name Approach Operating LLC			<sup>9</sup> Elevation 7955.78'

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
M	**10	**28N	**04E	G94	350	SOUTH	495	WEST	RIO ARRIBA

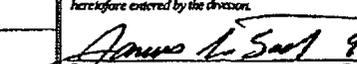
<sup>11</sup> Bottom Hole Location If Different From Surface

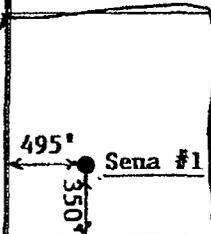
UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County

<sup>12</sup> Dedicated Acres 40	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
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No allowance 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**

<sup>16</sup>  <p style="text-align: center;"><b>SENA NO. 1</b></p> <p>Latitude - 36°40'08.61650N Longitude - 106°30'27.29027W</p> <p style="text-align: center;"><b>New Mexico State Plane Coordinate System - Central Zone</b></p> <p>x - 424,827.891 y - 2,063,805.360</p>	<p><b><sup>17</sup> OPERATOR CERTIFICATION</b></p> <p><i>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.</i></p> <p style="text-align: right;">             Signature Date  <b>JAMES S. SCOTT</b>            Printed Name         </p>



Submit 3 Copies To Appropriate District Office  
 District I  
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 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
 Energy, Minerals and Natural Resources

Form C-103  
 May 27, 2004

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

WELL API NO. 30 - 039 - 30386	
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>	
6. State Oil & Gas Lease No.	
7. Lease Name or Unit Agreement Name SENA	
8. Well Number 1	
9. OGRID Number 248343	
10. Pool name or Wildcat WILDCAT	
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 7955.78' LSD	
Pit or Below-grade Tank Application <input checked="" type="checkbox"/> or Closure <input type="checkbox"/>	
Pit type <u>reserve</u> Depth to Groundwater <u>&gt;100'</u> Distance from nearest fresh water well <u>&gt;1000'</u> Distance from nearest surface water <u>7200'</u>	
Pit Liner Thickness: <u>6 mil</u> Below-Grade Tank: Volume _____ bbls; Construction Material _____	

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.)

1. Type of Well: Oil Well  Gas Well  Other

2. Name of Operator  
 APPROACH OPERATING, LLC

3. Address of Operator  
 6300 RIDGLEA PLACE, SUITE 1107, FORT WORTH, TX 76116

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

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

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	P AND A <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	MULTIPLE COMPL <input type="checkbox"/>	CASING/CEMENT JOB <input type="checkbox"/>	
OTHER: RESERVE PIT APPLICATION <input checked="" type="checkbox"/>		OTHER: <input type="checkbox"/>	

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: [Signature] TITLE Deputy Oil & Gas Inspector, District #3 DATE OCT 03 2007  
 Conditions of Approval (if any):



SENA 1



**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



FEET

June 18, 2008

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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

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: \_\_\_\_\_ bbl \_\_\_\_\_ N/A \_\_\_\_\_ yd<sup>3</sup>  
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.  
- 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).  
- 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.  
(Applies to temporary, emergency, or cavitation pits and below-grade tanks)  
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image  Yes  No  
 NA
- Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.  
(Applies to permanent pits)  
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image  Yes  No  
 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.  
- 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.  
- Written confirmation or verification from the municipality; Written approval obtained from the municipality  Yes  No
- Within 500 feet of a wetland.  
- 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.  
- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division  Yes  No
- Within an unstable area.  
- 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.  
- 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<sub>2</sub>S, 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   | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> 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  | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> 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  | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> 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  | <input type="checkbox"/> Yes <input type="checkbox"/> 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  | <input type="checkbox"/> Yes <input type="checkbox"/> 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 | <input type="checkbox"/> Yes <input type="checkbox"/> 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   | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| Within 500 feet of a wetland.<br>- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site   | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| Within the area overlying a subsurface mine.<br>- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division   | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| Within an unstable area.<br>- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map   | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| Within a 100-year floodplain.<br>- FEMA map   | <input type="checkbox"/> Yes <input type="checkbox"/> 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 identify 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

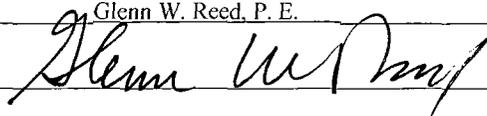
**On-Site Closure Plan Checklist:** (19.15.17.13 NMAC) *Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.*

- 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:  Date: 6-18-08

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

**D 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:**

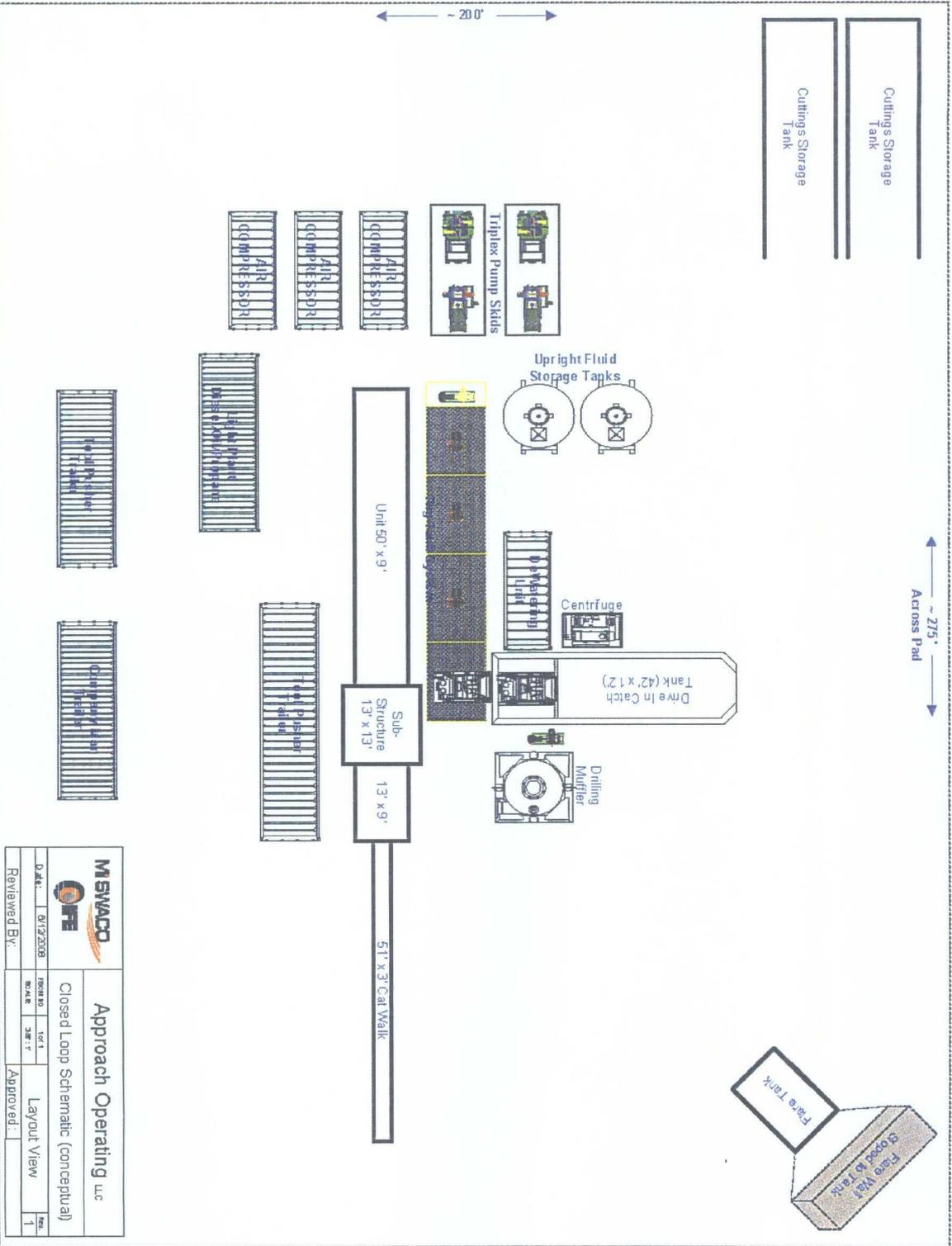
I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

e-mail address: \_\_\_\_\_ Telephone: \_\_\_\_\_

# Closed-Loop Schematic



				<b>Approach Operating LLC</b>	
Closed Loop Schematic (conceptual)		1541		Layout View	
Date: 01/23/2018	Scale: 3/8" = 1'	Reviewed By:	Approved:	Page: 1	Total: 1



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	Fluid Density:	8.330
lbm/gal	Fluid Volume:	10 bbl

Fluid 2: Lead Cement

Premium Cement	Fluid Weight	15.600
lbm/gal	Slurry Yield:	1.180 ft <sup>3</sup> /sk
94 lbm/sk Premium Cement (Cement)	Total Mixing Fluid:	5.238
0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)	Top of Fluid:	0 ft
Gal/sk	Calculated Fill:	350 ft
2 % Calcium Chloride (Accelerator)	Volume:	42.139 bbl
	Calculated Sacks:	200.503 sks
	Proposed Sacks:	205 sks

Fluid 3: Water Based Spacer

Water Displacement	Fluid Density:	8.330
lbm/gal		

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	Fluid Density:	8.330
lbm/gal		

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 <sup>3</sup> /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  
lbm/gal

Fluid Density: 8.330  
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.

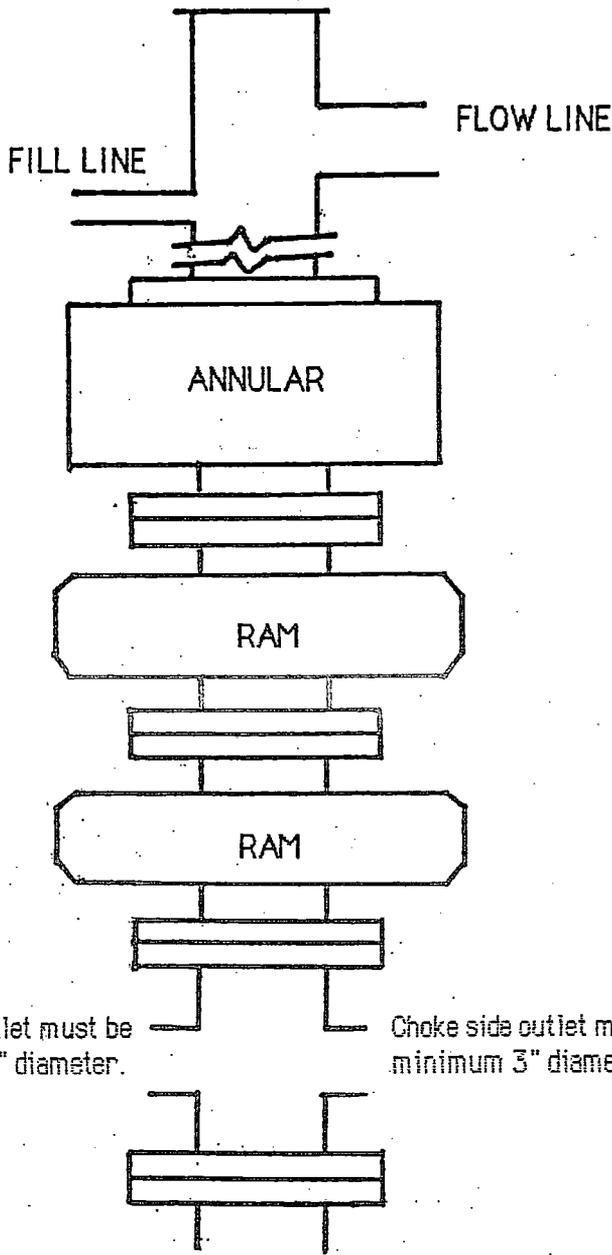
If the well is productive, areas not used in production will be contoured and seeded with stipulated seed mixture. Production equipment will be painted to blend with the natural color of the landscape.

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

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Glenn W. Reed  
Executive Vice President – Engineering & Operations



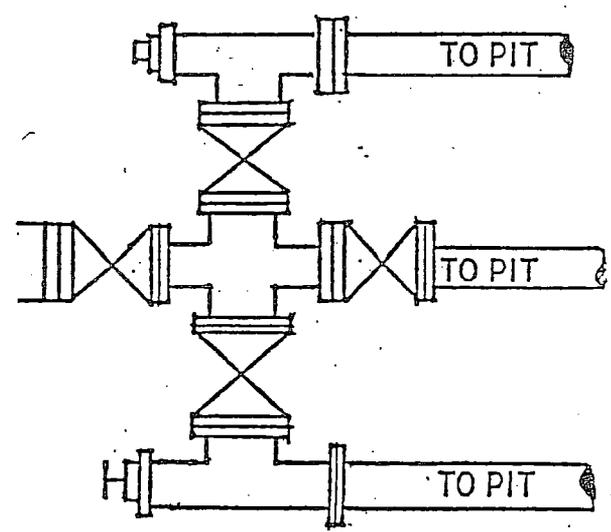
TYPICAL BOP STACK & CHOKE MANIFOLD

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.

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.



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.

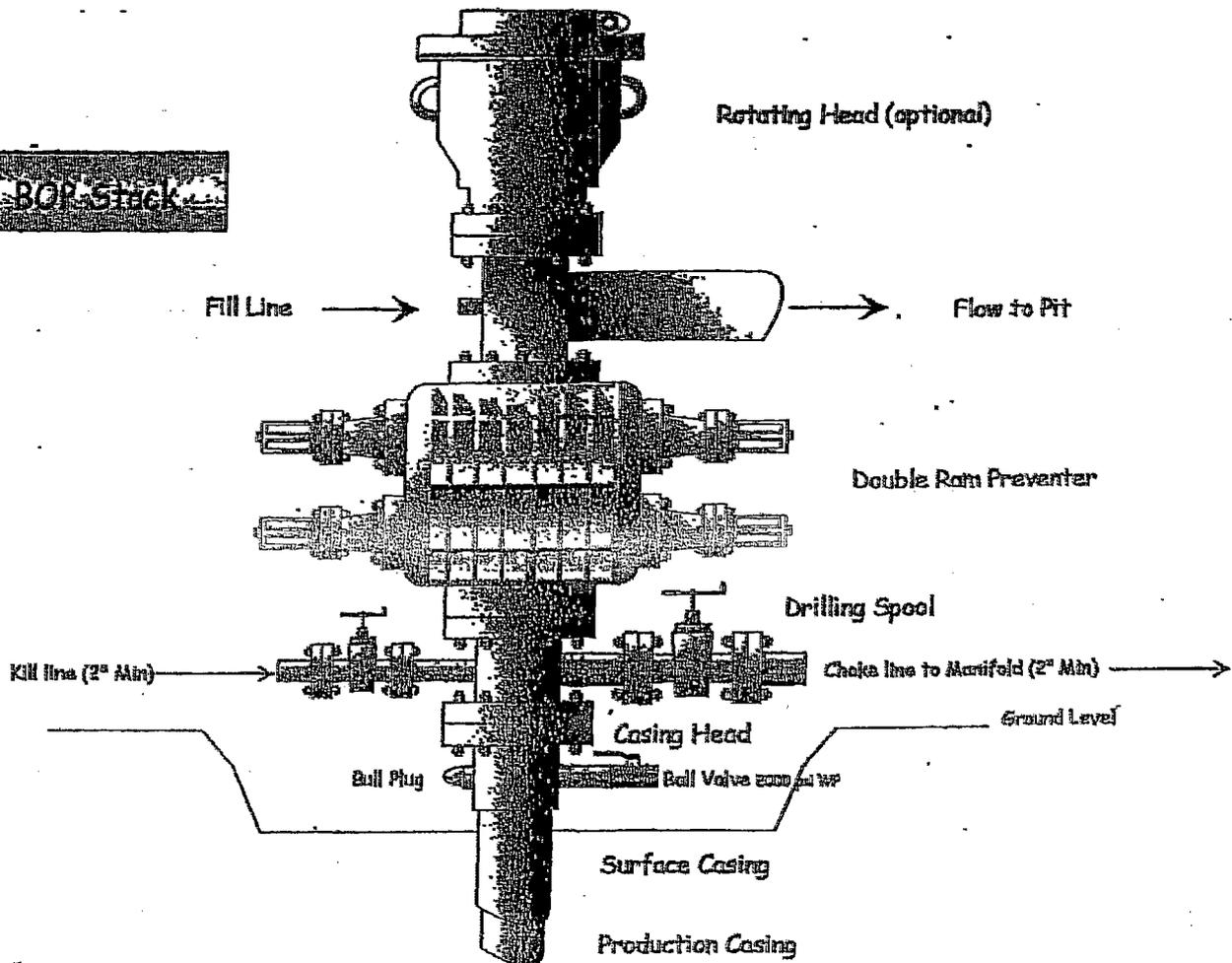
# Approach Resources

## Well Control Equipment Schematic for 3K Service

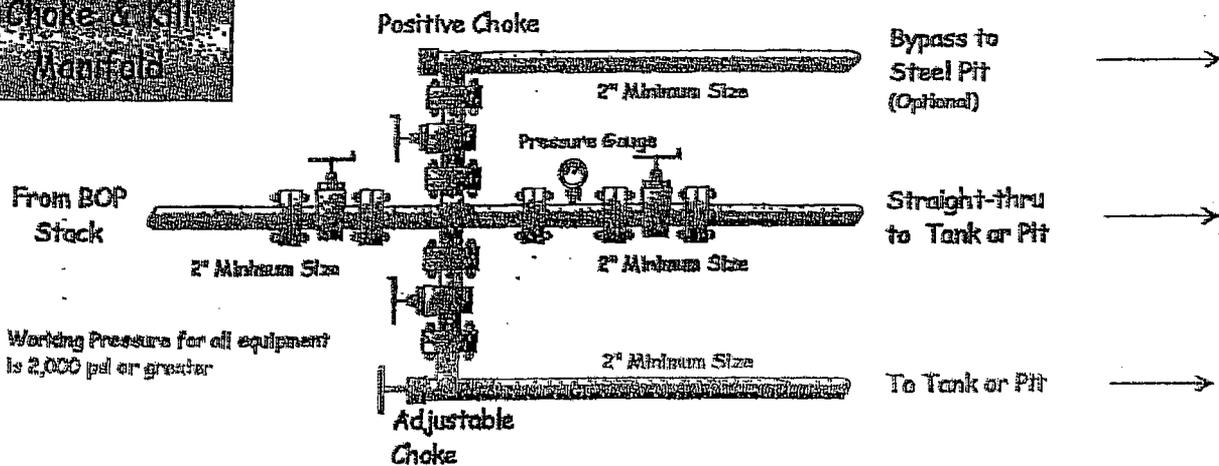
Attachment to Drilling Technical Program

**Exhibit #1**  
**Typical BOP setup**

**BOP Stack**



**Choke & Kill Manifold**



Working Pressure for all equipment is 2,000 psi or greater