Original 14

This 3160-3 has been amended on 11/15/2011 to satisfy the deficiency notification dated 11/02/2011 regarding the APD. ATS-12-80.

RECEIVED
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NMOCD ARTESIA
OCD Artesia

Form 3160-3
(August 2007)

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
SH: NM-0455265, BH: NM 019431

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

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

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
Angel Ranch Fed Com ~~11~~ 1H [39148]

2. Name of Operator Marshall & Winston Inc. [14187]

9. API Well No.
30-015- 41347

3a. Address P.O. Box 50880
Midland, TX 79710-0880

3b. Phone No. *(include area code)*
(432) 684-6373

10. Field and Pool, or Exploratory
Wildcat Bone Springs [96403]

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 330' FSL & 660' FWL, Sec 11-M
At proposed prod. zone 330'FNL & 660' FWL , Sec 11-D

11. Sec., T. R. M. or Blk. and Survey or Area
Section 11, T 20 S, R 27 E

14. Distance in miles and direction from nearest town or post office*

12. County or Parish
Eddy

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
SH & BHL 660' east of NM 125141 of sec 10, 20S, R27E	2,123.190	160 acres
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/BIA Bond No. on file**
	Pilot 8800, TVD 6200 MD 10,616	BLM# NMB 000807
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
3371' GL	01/05/2012	30-45 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	Name *(Printed/Typed)*	Date
	Vernon D. Dyer	10/18/2011

Title
Agent. Please contact Mr. Dyer for necessary amendments, (575) 420-0355; Vdyeroil@cableone.com; POB 1692, Roswell, NM 88202

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/s/ Don Peterson		APR - 3 2012
Title	**Office**	
FIELD MANAGER	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)

ROSWELL CONTROLLED WATER BASIN

*(Instructions on page 2)

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

Lessee's or Operator's Representative and Certification

As required for APD approval in accordance to Onshore Orders 1, I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route: that I am familiar with the conditions which currently exist; that the statements made in this plan are , the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed by Marshall & Winston Incorporated and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of false statement.

Name and Title: Vernon D. Dyer, Agent **Dated:** 10-18-2011

RE: Angel Ranch Fed Com # 11 - 1H , Section 11, T. 20 S., R. 27 E., Eddy Co., NM

October 18, 2011
Jim Amos
BLM CFO

Re: Marshall and Winston Inc., Angel Ranch 11-1H, Interim Restoration

Mr. Amos:

Marshall & Winston wishes to keep the original pad size on the Angel Ranch 11-1H located W/2 of Section 11, T.20S, R27E, Eddy County. The actual measured size is 350' x 300', commonly referred to as (I.e. 350' x 300'). We have no immediate plans for interim restoration regarding the removal of pad base material or caliche. The plans are to maintain the dimensions in order to sufficiently operate this well in addition to the Angel Ranch Fed Com 11-2H. This location shall be the central battery for both wells. The Angel Fed Com 11 -2H is located on the same lease in the adjacent 160 acreas to the west of the same section. The 11-2H locations will be cut down in size in regards to interim restoration as its storage and production facilites will be incorporated at the 11-1H site.

TEN
1/31/12

Utilizing a single battery production facility location for two or more wells will significantly reduce surface disturbance. Final restoration will be held at a minimum and prove more efficient for the operator and BLM as well. By consolidating production facilities and minimizing surface disturbance would be in the best interest to public lands and efficiency for operations and future restoration.

In reference to the well pad map, note there is 150' between the Heater Treater and any oil tank and the north and east sides of the location are open for workover operations. Should you have any further concerns, please contact me without any delay.

Sincerely,

Gary Gourley (575) 623-5880
Or
Vernon Dyer (575) 420-0355

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240
DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210
DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410
DISTRICT IV
11885 S. ST. FRANCIS DR., SANTA FE, NM 87505

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

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Form C-102
Revised July 16, 2010
Submit to Appropriate District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30 -015 - 14147	96403	Wildcat Bone Springs

Property Code	Property Name	Well Number
39148	ANGEL RANCH FEDERAL COM 11	1H

OGRID No.	Operator Name	Elevation
014187	MARSHALL & WINSTON, INC.	3371'

Surface Location

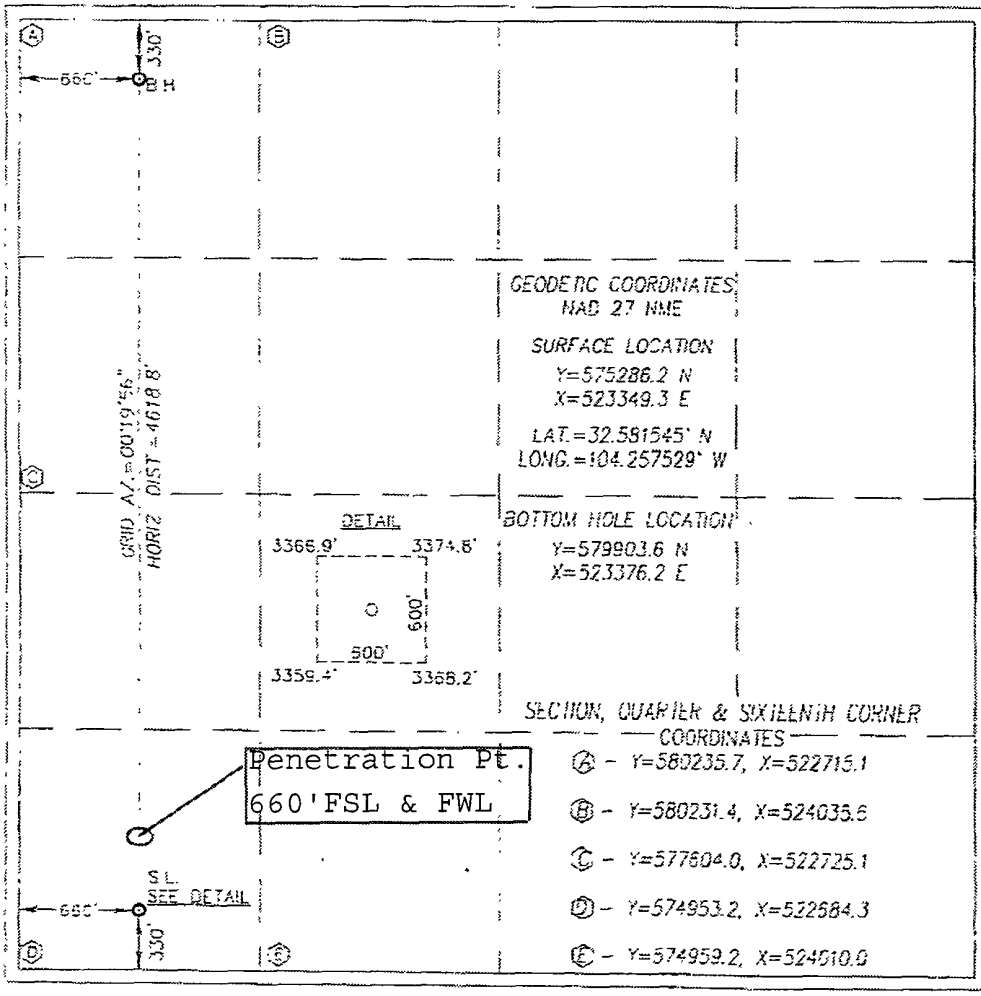
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	11	20-S	27-E		330	SOUTH	660	WEST	EDDY

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
D	11	20-S	27-E		330	NORTH	660	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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



OPERATOR CERTIFICATION

I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date

Vernon D. Dyer
Printed Name

Vdyeroil@cableone.com
E-mail Address

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.

AUGUST 24, 2011
Date of Survey

Signature & Seal of Professional Surveyor:

Ronald J. Eidson 9/13/2011

Certificate Number.... Gary O. Eidson 12641
Ronald J. Eidson 3239

LA JWSC W.O.: 11.11.1708

DRILLING PROGRAM
Marshall & Winston Inc.
Angel Ranch Fed Com 11 # 1H
SHL (M) to BHL (D),
Sec.11, T-20S, R-27E

1. **Geological Name of Surface Formation:**

   a. Permian Quaternary Alluvium Deposits

2. **Anticipated Tops of Geological Markers & Depth of anticipated Fresh Water, Oil or Gas:**

Surface water *	155'	
Queen	860'	n/a
San Andres	1900'	n/a
Delaware	2555'	n/a
Bone Springs	3920'	
Bone Springs 1st Sand	6000'	oil
Bone Springs 2nd Sand	6550'	
Bone Springs 3rd Sand	7935'	
Wolfcamp	8550'	n/a
TD (pilot hole)	8800'	
TVD	~~6100'~~ 6200	

No other formations are anticipated to yield oil, gas or water in measureable volumes.

*According to the state engineer, the closest water well is two miles to the east in the SE/4 of
sec 9. It has a depth of 155 ft. and is used for stock. There is no record if the well is still making water or the output of water capacity known.

There is no indication of the "Rustler" Anhydrite layer in the vicinity offsets. Although mixtures of anhydrite, shale, dolomite, sandstone and limestone conglomerates exist from surface throughout.

3. **Casing Program:**

All casing is new and API approved. The minimum safety factors required are: Collapse 1.125, Burst 1.0, Tension 1.8. The casing design factors for this string are:

						PSI			Safety Factors		
Hole	**Casing**	**Depth**	**Wt.**	**Grade**	**Type**	**Collapse**	**Burst**	**Jt.Yield**	**Cllps.**	**Brst.**	**Jt.Yld.**
17 ½	13⅜	450'	48	H-40	STC	740	1730	322 kips	3.36	2.5	15
12¼	9⅝	3100'	36	J-55	LTC	2020	3520	423 "	1.22	1.8	3.75
8¾	7.0	6400'	26	N-80	LTC	5410	7249	519 "	1.77	5.14	3.12
7⅞	5 ½	10616'	17	P-110	LTC	7560	10,690	279 "	2.47	3.79	3.8

Summary of drilling program:

Drill a 17 ½" hole and set 13⅜" casing at 450'and circulate cement to surface according to Baker Hughes' recommendations.

Drill 12¼" hole and set 9⅝" intermediate casing string to 3100' and circulate cement to surface according to Baker Hughes' recommendations.

Rig up H2S equipment.

Drill 8¾" hole to approximately 8800'. Possible DST in the Bone Spring carbonate. Run Open Hole logs from 8800' to intermediate casing.

TIH with DP displace pilot hole with 9.0 ppg laden mud, set open hole cement plug #1 from 8800' (TD) to 8315' to cover the Wolfcamp. WOC, tag. After tagged successfully, set open hole cement plug # 2 from ~~6100'~~ 6315 to ~~5600'~~ 6100 as the BLM requires. WOC, tag,. ~~Drill back down kick off point~~. An open-hole whipstock will be set at an anticipated 5722' depending on log interpretation. Open hole and pilot hole plug design and setting depths were discussed with Mike Whittaker, NMOCD Hobbs, and Paul Swartz BLM CFO. Plug composition in cementing section.

TOH and make up 8¾" directional BHA to build curve. TIH, drill curve and land curve at 6200' TVD, 6472' TMD, adjusting in accordance to the logs. TOOH and pick up 7⅞" bit with lateral assembly. Drill the 7⅞" hole to TD at 10,616' TMD. After drilling hole to TD, will install the 5 ½" casing from TD to 6402', then run 7" from 6400' (with a crossover sub covering 6400'-6402') to surface. Circulate cement to surface according to Baker Hughes' recommendations. There are no plans to anticipate an alternative casing string at this time.

4.1 Cementing Program:

a. 13⅜" Surface Casing:

The 13⅜" surface casing shall be set at 450', and sufficient amount of cement will be circulated back to the surface (TOC at 0'). The lead mixture consist of Class C cement + 2% bwoc Calcium Chloride + 0.25lbs/sk Cello Flake + 0.0005 gps FP-6L+ 4% bwoc Bentonite + 81.3% fresh water. The anticipated quantity is 290 sacks, (506 cu ft.), Weight 13.50 ppg, Yield 1.75 cf/sk., with 102% excess.

The tail slurry will consist of Class C cement + 0.005% Static Free + 2% bwoc Calcium Chloride + 0.25lbs/sack Cello Flake + 0.005 gps FP-6L + 56.2 Fresh Water. The anticipated quantity is 120 sacks (162 cu ft), Weight 14.80 ppg, Yield 1.35 cf/sk., with 102% volume excess.

b. 9 ⅝" Intermediate Casing String:

The 9⅝" intermediate casing string shall be set at 3100' with sufficient amount of cement circulated back to surface (TOC at 0'). The lead slurry shall consist of (50:50) Poz (Fly Ash) Class C cement + 0.005% bwoc Static Free + 5% bwoc Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.2% bwoc FL-52 + 0.005 gps FP-6L + 6% bwoc Bentonite +0.2% bwoc Sodium Metasilicate+107.8% Fresh Water. The anticipated quantity is 550 sacks (1123 cu ft), Weight 12.5 ppg, Yield 2.05 cf/sk., with 51% volume excess.

The tail slurry will consist of Class C cement + 1% bwoc Calcium Chloride + 0.25 lbs/sk Cello Flake + 56.1% fresh water. The anticipated quantity is 225 sacks (310 cu ft), Weight 13.80 ppg, Yield 1.38 cf/sk., with 51% volume excess.

c. 7.0 " XO 5½" Production Casing String:

The lead slurry will consist of 35:65 Poz Fly Ash Class C Cement +0.005% bwoc Static Free + 3% bwow Sodium Chloride + 0.125% bwoc Cello Flake + 3 lbs/sack LCM-1 + 0.45% bwoc FP-6L + 6% bwoc Bentonite+ 102.5% fresh water. The anticipated quantity is 535 sacks
(1073 cuft), Weight 12.50 ppg, Yield 2.01 cf/sk., + 150 sx (30% excess), for a total sack quantity of 650 sx.

The tail slurry will consist of Class C Cement +0.005% bwoc Static Free+5% bwow Sodium Chloride+0.3% bwoc CD-32+0.5% bwoc FL-52+0.005 gps FP-6L+0.45% bwoc Sodium Metasilicate+57.4% Fresh Water. The anticipated quantity is 995 sacks (1271 cuft), Weight 14.20 ppg, Yield 1.28 cf/sk., + 250 sx (25% excess), for a total sack quantity of 1145 sx.

d. The Pilot Hole Plugs:

Plug # 1 shall consist of Class H cement, + .2% bwoc R-3, .005% bwoc Static Free, .005 gps FP6L, 46.3 % fresh water. The anticipated quantitiy is 172 sacks, + 50 sx (29% excess), a total 222 sx, a weight of 15.6 ppg, Yield 1.18 cu'/sx and will be set from 8800-8315 ft.

Plug # 2 shall consist of Class H cement, 1% bwoc CD 32, .005% bwoc Stataic Free, .005 gps FP6L and 26.3% fresh water. The anticipated quantity is 335 sacks, + 83 sx (25% excess), a total of 419 sx, a weight of 18.0 ppg, Yield 0.89 cu'/sx. The plug shall cover from 6100 to 5600 ft. as to BLM requirements.

5. Pressure Control:

A 13⅝'' BOPE rated at 3,000 psi will be installed on the 13⅜" surface casing. Upon completing the cementing job and prior to drilling out of the surface casing, the 3M annular shall be tested to 1500psi and held for 30 minutes. The double ram preventors shall be tested to 3M and held for 30 minutes. The 13⅜" casing shall be tested to 1200 psi and held for 30 minutes. Test shall be performed by a third party and the BLM will be notified at least 48 hours prior to testing.

An 11" 5M BOP shall be installed on the 9⅝" intermediate casing. Upon completing the cementing job and prior to drilling out of the intermediate casing, the 5M annular shall be tested to 2500 psi and held for 30 minutes. The double ram preventors shall be tested to 5,000 psi and held for 30 minutes. The 5M BOPE will remain throughout the drilling of this well. The 9⅝" casing shall be tested to 1500 psi and held for 30 minutes. Test shall be performed by a third party and the BLM will be notified at least 48 hours prior to testing. All BOPE test shall be conducted in accordance with BLM Onshore Oil and Gas Order No. 02.

Additional BOP accessories include an upper and lower kelly cock with the locking handle readily available on the rig floor at all times, the choke operating controls and floor safety valves are on the rig floor and pit fluid level sensors are used to monitor pit levels. H2S sensors are installed by the third party H2S safety company and gas indicators are mounted at the return flow line by the mud logging unit.

6. Drilling Fluid Program:

0' - 450'	Fresh water	8.4 – 8.6 ppg	
450' - 3100'	Brine water	10.0 – 10.1 ppg	(For optimum hole stability)
3100'- 10,616'	Fresh water and brine	8.8 - 9.2 ppg	

7. Auxillary Equipment:

No additional accessories are anticipated other than the equipment listed under the pressure control section.

8. Logging Agenda: See COA

The mud logging 2 man unit will begin monitoring at 450' to TD.
Electrical logs: CNL / LDT / CAL / GR from TD to intermediate casing,
DLL/ GR from 8800' to surface.
A DST is probable in the Bone Springs formation depending upon logging results.

9. Potential Hazards

No abnormal pressures or temperatures are anticipated. BHP is estimated to be 3872 psi with a pressure gradient of .44 at 8800 ft. The Bone Springs at 6400 ft is anticipated to hav*e a BHP of 2816 psi, with a BHT of 175° F. An H2S contingency plan will be incorporated by a third party prior to drilling out of the intermediate 9⅝" shoe in accordance with Onshore Orders. This includes:

- All personnel will be H2S trained and qualified.
- H2S alarms and detection systems will be utilized.
- A windsock will be visible at all times.
- Flags or warning signs will be visible for road traffic.
- ▶ The H2S contingency plan is attached.

10. Anticipated Start Date:

We plan to start as soon as possible once the APD is approved. We have scheduled rigs by or before the 15th of January 2012. We anticipate 45 to 55 days to drill and approximately 18 to 24 days for completion.

11. Surface & Minerals Ownership:

The surface and mineral ownership is USA. The well's allocation will incorporate four qtr/qtrs for a 160 acre proration. It will cover the E/2E/2 of section 10. The lease is NMNM 125141 and covers 320 acres, ALIQ: E/2 of section 10, T. 20 S., R. 27 E. A Communitization Agreement will not be necessary for this well.

COMPANY PERSONNEL:

Shorty Sweeden (Wellsite Supervisor) (432) 634-8722 (c)

Gabe Herrera (Marshall & Winston – Engineer) (432) 684-6373 (o)
(432) 260-8650 (c)

Tom Brandt (Marshall & Winston – Operations) (432) 684-6373 (o)
(432) 553-9747 (c)

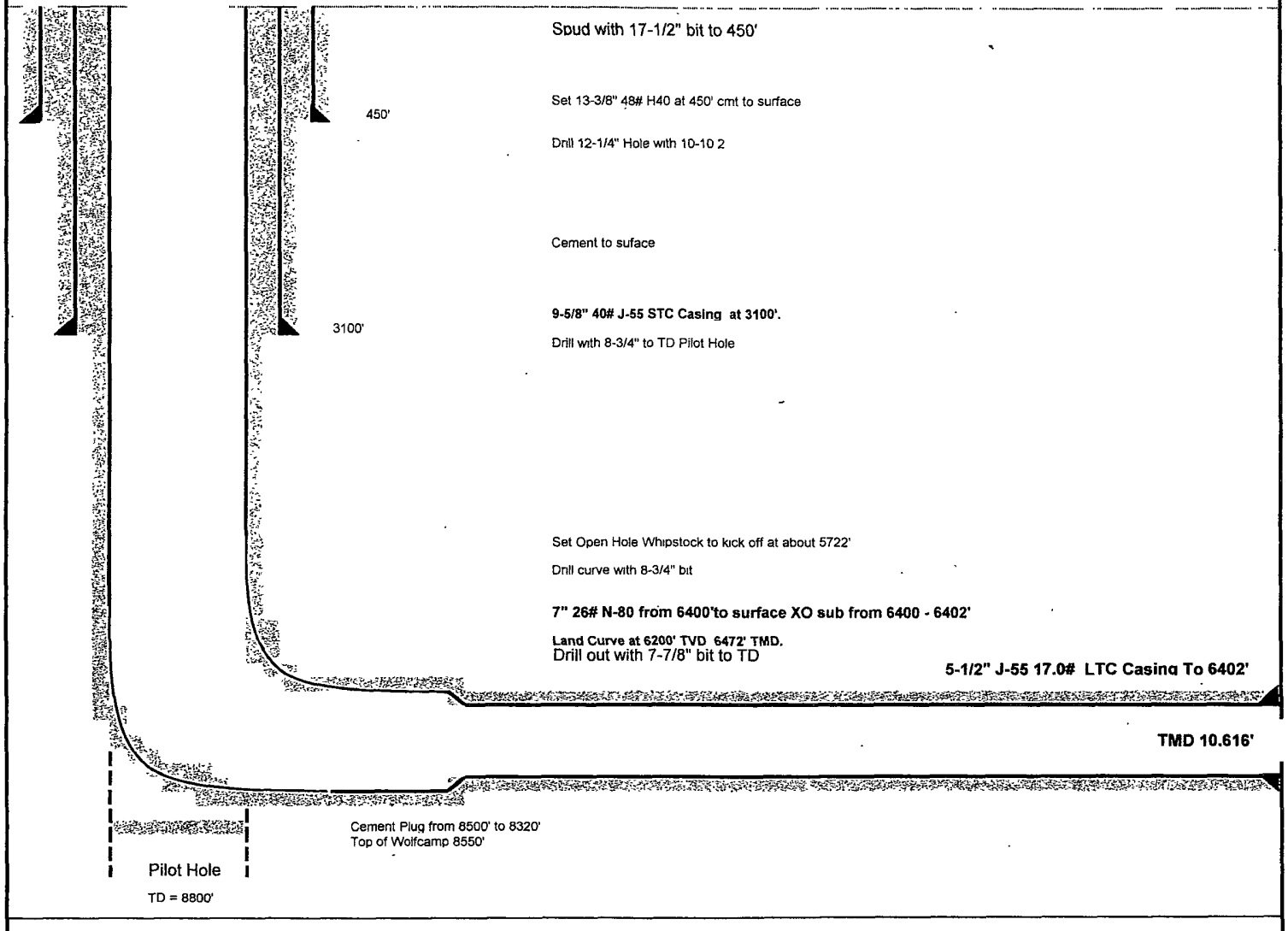
George Watters (Marshall & Winston – Geologist) (432) 684-6373 (o)
(432) 631-2051 (c)

Brent May (Marshall & Winston – Geologist) (432) 684-6373 (o)
(432) 254-3525 (c)

Marshall & Winston, Inc.
P.O. Box 50880
Midland, Tx. 79710-0880

(432) 684-6373 Office
(432) 687-2684 Fax

AFE No.	Angel Ranch Fed Com 11-1H	AFE Information
API #	Eddy County, NM	Dry Hole: Days:
Permit No.	Proposed Wellbore Sketch	Proposed TD: 10,612' TMD 6,200' TVD
Project No.		v



Well Information

Surface Location Eddy County, T20S R27E Section 11 330' FSL & 660' FWL

Marshall & Winston Inc.

Project: Eddy County, NM (Nad27)
Site: Angel Ranch Federal Com 11
Well: Angel Ranch Fed Com 11 1H
Wellbore: Wellbore #1
Plan: Plan#1 092611 (Angel Ranch Fed Com 11 1H/Wellbore #1)

PHOENIX TECHNOLOGY SERVICES

N

Marshall & Winston, Inc.

WELL DETAILS: Angel Ranch Fed Com 11 1H

Ground Level: 3371.00

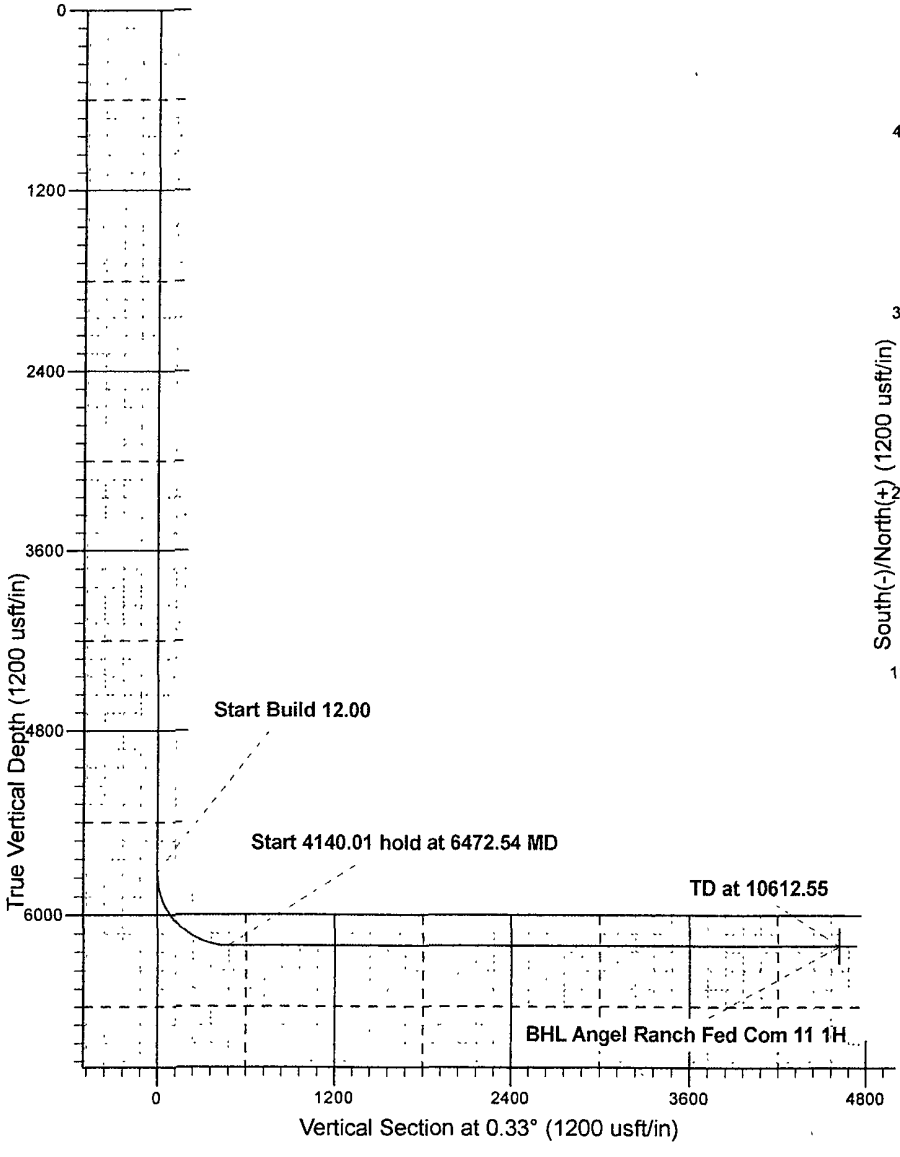
Northing	Easting	Latitude	Longitude
575286.20	523349.30	32° 34' 53.562 N	104° 15' 27.106 W

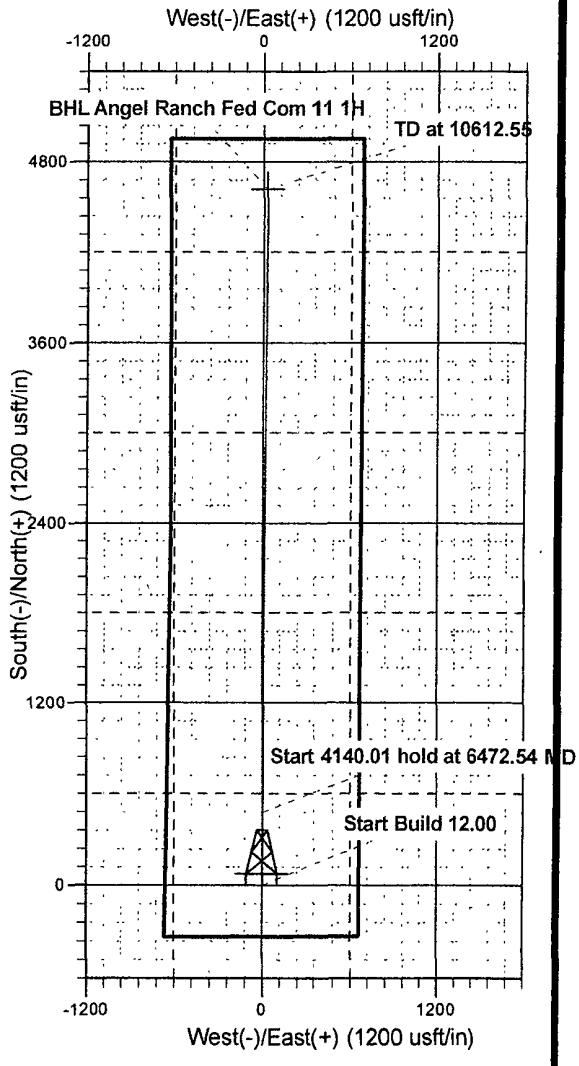
WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL Angel Ranch Fed Com 11 1H	6200.00	4617.40	26.90	Point

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5722.54	0.00	0.00	5722.54	0.00	0.00	0.00	0.00	0.00	
6472.54	90.00	0.33	6200.00	477.46	2.78	12.00	0.33	477.46	
10612.55	90.00	0.33	6200.00	4617.40	26.90	0.00	0.00	4617.48	BHL Angel Ranch Fed Com 11 1H





Company:	Marshall & Winston Inc	Local Co-ordinate Reference:	Well Angel Ranch Fed Com 11 1H
Project:	Eddy County, NM (Nad27)	TVD Reference:	WELL @ 3390.00usft (Original Well Elev + 19' KB)
Site:	Angel Ranch Federal Com 11	MD Reference:	WELL @ 3390.00usft (Original Well Elev + 19' KB)
Well:	Angel Ranch Fed Com 11 1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan#1 092611	Database:	GCR DB v5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	-3,390.00	0.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
100.00	0.00	0.00	-3,290.00	100.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
200.00	0.00	0.00	-3,190.00	200.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
300.00	0.00	0.00	-3,090.00	300.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
400.00	0.00	0.00	-2,990.00	400.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
500.00	0.00	0.00	-2,890.00	500.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
600.00	0.00	0.00	-2,790.00	600.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
700.00	0.00	0.00	-2,690.00	700.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
800.00	0.00	0.00	-2,590.00	800.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
900.00	0.00	0.00	-2,490.00	900.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
1,000.00	0.00	0.00	-2,390.00	1,000.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
1,100.00	0.00	0.00	-2,290.00	1,100.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
1,200.00	0.00	0.00	-2,190.00	1,200.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
1,300.00	0.00	0.00	-2,090.00	1,300.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
1,400.00	0.00	0.00	-1,990.00	1,400.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
1,500.00	0.00	0.00	-1,890.00	1,500.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
1,600.00	0.00	0.00	-1,790.00	1,600.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
1,700.00	0.00	0.00	-1,690.00	1,700.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
1,800.00	0.00	0.00	-1,590.00	1,800.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
1,900.00	0.00	0.00	-1,490.00	1,900.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
2,000.00	0.00	0.00	-1,390.00	2,000.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
2,100.00	0.00	0.00	-1,290.00	2,100.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
2,200.00	0.00	0.00	-1,190.00	2,200.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
2,300.00	0.00	0.00	-1,090.00	2,300.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
2,400.00	0.00	0.00	-990.00	2,400.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
2,500.00	0.00	0.00	-890.00	2,500.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30
2,600.00	0.00	0.00	-790.00	2,600.00	0.00	0.00	0.00	0.00	575,286.20	523,349.30

Company:	Marshall & Winston Inc.	**Local Co-ordinate Reference:**	Well Angel Ranch Fed Com 11 1H
Project:	Eddy County, NM (Nad27)	**TVD Reference:**	WELL @ 3390 00usft (Original Well Elev + 19' KB)
Site:	Angel Ranch Federal Com 11	**MD Reference:**	WELL @ 3390 00usft (Original Well Elev + 19' KB)
Well:	Angel Ranch Fed Com 11 1H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan#1 092611	**Database:**	GCR DB v5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
2,700 00	0.00	0.00	-690 00	2,700 00	0 00	0 00	0 00	0 00	575,286.20	523,349 30
2,800 00	0 00	0 00	-590 00	2,800.00	0.00	0 00	0 00	0 00	575,286 20	523,349 30
2,900 00	0 00	0 00	-490 00	2,900 00	0 00	0 00	0 00	0 00	575,286 20	523,349 30
3,000.00	0.00	0 00	-390 00	3,000 00	0 00	0 00	0 00	0.00	575,286.20	523,349.30
3,100 00	0 00	0 00	-290 00	3,100 00	0.00	0.00	0 00	0 00	575,286 20	523,349 30
3,200 00	0 00	0 00	-190 00	3,200 00	0 00	0 00	0 00	0 00	575,286 20	523,349 30
3,300.00	0 00	0 00	-90 00	3,300 00	0 00	0 00	0 00	0 00	575,286 20	523,349 30
3,400 00	0 00	0 00	10 00	3,400 00	0 00	0 00	0 00	0 00	575,286 20	523,349 30
3,500 00	0 00	0 00	110 00	3,500.00	0 00	0 00	0 00	0 00	575,286 20	523,349.30
3,600 00	0 00	0 00	210 00	3,600 00	0.00	0.00	0 00	0 00	575,286.20	523,349 30
3,700 00	0 00	0 00	310 00	3,700 00	0.00	0 00	0 00	0 00	575,286 20	523,349 30
3,800 00	0 00	0.00	410 00	3,800 00	0.00	0 00	0 00	0 00	575,286 20	523,349.30
3,900.00	0 00	0.00	510.00	3,900 00	0 00	0 00	0 00	0.00	575,286 20	523,349 30
4,000 00	0.00	0 00	610 00	4,000 00	0 00	0 00	0 00	0 00	575,286 20	523,349 30
4,100 00	0 00	0 00	710 00	4,100 00	0.00	0.00	0 00	0 00	575,286 20	523,349 30
4,200 00	0 00	0 00	810 00	4,200.00	0 00	0 00	0 00	0 00	575,286.20	523,349 30
4,300 00	0.00	0 00	910 00	4,300 00	0 00	0.00	0 00	0 00	575,286.20	523,349 30
4,400 00	0 00	0 00	1,010 00	4,400 00	0 00	0.00	0 00	0 00	575,286.20	523,349 30
4,500 00	0 00	0 00	1,110 00	4,500.00	0.00	0 00	0 00	0.00	575,286 20	523,349.30
4,600 00	0 00	0.00	1,210 00	4,600 00	0 00	0 00	0 00	0 00	575,286 20	523,349 30
4,700.00	0 00	0 00	1,310 00	4,700 00	0 00	0.00	0.00	0.00	575,286.20	523,349 30
4,800 00	0.00	0.00	1,410.00	4,800 00	0.00	0.00	0 00	0 00	575,286 20	523,349 30
4,900 00	0 00	0.00	1,510 00	4,900 00	0 00	0 00	0 00	0 00	575,286 20	523,349 30
5,000.00	0 00	0 00	1,610 00	5,000 00	0 00	0.00	0 00	0 00	575,286 20	523,349 30
5,100 00	0 00	0 00	1,710 00	5,100 00	0.00	0 00	0 00	0 00	575,286.20	523,349 30
5,200.00	0 00	0 00	1,810 00	5,200.00	0 00	0.00	0 00	0.00	575,286 20	523,349 30
5,300 00	0.00	0.00	1,910 00	5,300 00	0 00	0 00	0 00	0 00	575,286.20	523,349.30

Company:	Marshall & Winston Inc	Local Co-ordinate Reference:	Well Angel Ranch Fed Com 11 1H
Project:	Eddy County, NM (Nad27)	TVD Reference:	WELL @ 3390 00usft (Original Well Elev + 19' KB)
Site:	Angel Ranch Federal Com 11	MD Reference:	WELL @ 3390 00usft (Original Well Elev + 19' KB)
Well:	Angel Ranch Fed Com 11 1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan#1 092611	Database:	GCR DB v5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
5,400.00	0 00	0.00	2,010 00	5,400 00	0 00	0.00	0.00	0 00	575,286 20	523,349.30
5,500 00	0 00	0 00	2,110 00	5,500 00	0 00	0 00	0 00	0.00	575,286 20	523,349.30
5,600 00	0 00	0 00	2,210 00	5,600 00	0 00	0 00	0 00	0 00	575,286 20	523,349.30
5,700 00	0 00	0 00	2,310 00	5,700 00	0 00	0 00	0 00	0 00	575,286 20	523,349.30
5,722 54	0.00	0 00	2,332.54	5,722 54	0 00	0.00	0 00	0 00	575,286 20	523,349 30
Start Build 12.00										
5,800 00	9 30	0 33	2,409 66	5,799 66	6 27	0.04	6 27	12 00	575,292 47	523,349 34
5,900 00	21 30	0.33	2,505 94	5,895 94	32 60	0 19	32 60	12 00	575,318 80	523,349 49
6,000.00	33 30	0 33	2,594 64	5,984 64	78 38	0 46	78 38	12.00	575,364.58	523,349 76
6,100.00	45 30	0 33	2,671 89	6,061 89	141 59	0.82	141 59	12 00	575,427.79	523,350.12
6,200 00	57 30	0.33	2,734.31	6,124 31	219 49	1 28	219.49	12 00	575,505 69	523,350.58
6,300 00	69 30	0.33	2,779.16	6,169 16	308 65	1.80	308.66	12.00	575,594 85	523,351 10
6,400 00	81 30	0.33	2,804 50	6,194 50	405 20	2 36	405.21	12.00	575,691.40	523,351 66
6,472 54	90.00	0 33	2,810 00	6,200 00	477 46	2 78	477 46	12 00	575,763 66	523,352.08
Start 4140.01 hold at 6472.54 MD										
6,500.00	90 00	0 33	2,810 00	6,200.00	504 92	2 94	504 93	0.00	575,791 12	523,352 24
6,600.00	90 00	0 33	2,810 00	6,200 00	604.92	3.52	604.93	0 00	575,891 12	523,352 82
6,700 00	90.00	0 33	2,810 00	6,200.00	704 92	4.11	704 93	0 00	575,991 12	523,353.41
6,800 00	90 00	0 33	2,810 00	6,200 00	804 92	4 69	804 93	0 00	576,091 12	523,353.99
6,900 00	90 00	0 33	2,810 00	6,200 00	904 91	5 27	904 93	0 00	576,191.11	523,354 57
7,000 00	90 00	0.33	2,810 00	6,200.00	1,004 91	5 85	1,004 93	0 00	576,291 11	523,355.15
7,100 00	90 00	0.33	2,810 00	6,200 00	1,104 91	6 44	1,104 93	0 00	576,391 11	523,355 74
7,200 00	90 00	0 33	2,810 00	6,200 00	1,204 91	7 02	1,204 93	0 00	576,491 11	523,356 32
7,300.00	90.00	0 33	2,810 00	6,200 00	1,304.91	7 60	1,304.93	0 00	576,591 11	523,356.90
7,400 00	90 00	0 33	2,810.00	6,200.00	1,404 91	8.18	1,404 93	0.00	576,691 11	523,357 48
7,500.00	90 00	0 33	2,810.00	6,200 00	1,504 90	8 77	1,504 93	0.00	576,791.10	523,358 07
7,600 00	90 00	0.33	2,810.00	6,200 00	1,604 90	9.35	1,604 93	0 00	576,891 10	523,358.65

Company:	Marshall & Winston Inc	Local Co-ordinate Reference:	Well Angel Ranch Fed Com 11 1H
Project:	Eddy County, NM (Nad27)	TVD Reference:	WELL @ 3390.00usft (Original Well Elev + 19' KB)
Site:	Angel Ranch Federal Com 11	MD Reference:	WELL @ 3390.00usft (Original Well Elev + 19' KB)
Well:	Angel Ranch Fed Com 11 1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan#1 092611	Database:	GCR DB v5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
7,700.00	90.00	0.33	2,810.00	6,200.00	1,704.90	9.93	1,704.93	0.00	576,991.10	523,359.23
7,800.00	90.00	0.33	2,810.00	6,200.00	1,804.90	10.51	1,804.93	0.00	577,091.10	523,359.81
7,900.00	90.00	0.33	2,810.00	6,200.00	1,904.90	11.10	1,904.93	0.00	577,191.10	523,360.40
8,000.00	90.00	0.33	2,810.00	6,200.00	2,004.90	11.68	2,004.93	0.00	577,291.10	523,360.98
8,100.00	90.00	0.33	2,810.00	6,200.00	2,104.89	12.26	2,104.93	0.00	577,391.09	523,361.56
8,200.00	90.00	0.33	2,810.00	6,200.00	2,204.89	12.85	2,204.93	0.00	577,491.09	523,362.15
8,300.00	90.00	0.33	2,810.00	6,200.00	2,304.89	13.43	2,304.93	0.00	577,591.09	523,362.73
8,400.00	90.00	0.33	2,810.00	6,200.00	2,404.89	14.01	2,404.93	0.00	577,691.09	523,363.31
8,500.00	90.00	0.33	2,810.00	6,200.00	2,504.89	14.59	2,504.93	0.00	577,791.09	523,363.89
8,600.00	90.00	0.33	2,810.00	6,200.00	2,604.89	15.18	2,604.93	0.00	577,891.09	523,364.48
8,700.00	90.00	0.33	2,810.00	6,200.00	2,704.88	15.76	2,704.93	0.00	577,991.08	523,365.06
8,800.00	90.00	0.33	2,810.00	6,200.00	2,804.88	16.34	2,804.93	0.00	578,091.08	523,365.64
8,900.00	90.00	0.33	2,810.00	6,200.00	2,904.88	16.92	2,904.93	0.00	578,191.08	523,366.22
9,000.00	90.00	0.33	2,810.00	6,200.00	3,004.88	17.51	3,004.93	0.00	578,291.08	523,366.81
9,100.00	90.00	0.33	2,810.00	6,200.00	3,104.88	18.09	3,104.93	0.00	578,391.08	523,367.39
9,200.00	90.00	0.33	2,810.00	6,200.00	3,204.88	18.67	3,204.93	0.00	578,491.08	523,367.97
9,300.00	90.00	0.33	2,810.00	6,200.00	3,304.87	19.25	3,304.93	0.00	578,591.07	523,368.55
9,400.00	90.00	0.33	2,810.00	6,200.00	3,404.87	19.84	3,404.93	0.00	578,691.07	523,369.14
9,500.00	90.00	0.33	2,810.00	6,200.00	3,504.87	20.42	3,504.93	0.00	578,791.07	523,369.72
9,600.00	90.00	0.33	2,810.00	6,200.00	3,604.87	21.00	3,604.93	0.00	578,891.07	523,370.30
9,700.00	90.00	0.33	2,810.00	6,200.00	3,704.87	21.58	3,704.93	0.00	578,991.07	523,370.88
9,800.00	90.00	0.33	2,810.00	6,200.00	3,804.87	22.17	3,804.93	0.00	579,091.07	523,371.47
9,900.00	90.00	0.33	2,810.00	6,200.00	3,904.86	22.75	3,904.93	0.00	579,191.06	523,372.05
10,000.00	90.00	0.33	2,810.00	6,200.00	4,004.86	23.33	4,004.93	0.00	579,291.06	523,372.63
10,100.00	90.00	0.33	2,810.00	6,200.00	4,104.86	23.91	4,104.93	0.00	579,391.06	523,373.21
10,200.00	90.00	0.33	2,810.00	6,200.00	4,204.86	24.50	4,204.93	0.00	579,491.06	523,373.80
10,300.00	90.00	0.33	2,810.00	6,200.00	4,304.86	25.08	4,304.93	0.00	579,591.06	523,374.38

Company:	Marshall & Winston Inc	**Local Co-ordinate Reference:**	Well Angel Ranch Fed Com 11 1H
Project:	Eddy County, NM (Nad27)	**TVD Reference:**	WELL @ 3390.00usft (Original Well Elev + 19' KB)
Site:	Angel Ranch Federal Com 11	**MD Reference:**	WELL @ 3390.00usft (Original Well Elev + 19' KB)
Well:	Angel Ranch Fed Com 11 1H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan#1 092611	**Database:**	GCR.DB v5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
10,400 00	90.00	0.33	2,810 00	6,200 00	4,404 85	25 66	4,404 93	0 00	579,691 05	523,374.96
10,500 00	90 00	0 33	2,810.00	6,200 00	4,504 85	26.24	4,504 93	0 00	579,791.05	523,375 54
10,600.00	90 00	0 33	2,810 00	6,200 00	4,604 85	26 83	4,604 93	0 00	579,891 05	523,376.13
10,612 55	90 00	0 33	2,810 00	6,200 00	4,617 40	26 90	4,617 48	0 00	579,903 60	523,376 20
TD at 10612.55										

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
5,722 54	5,722.54	0 00	0 00	Start Build 12 00
6,472 54	6,200 00	477 46	2 78	Start 4140 01 hold at 6472 54 MD
10,612 55	6,200 00	4,617.40	26 90	TD at 10612 55

Checked By: _____ Approved By: _____ Date: _____

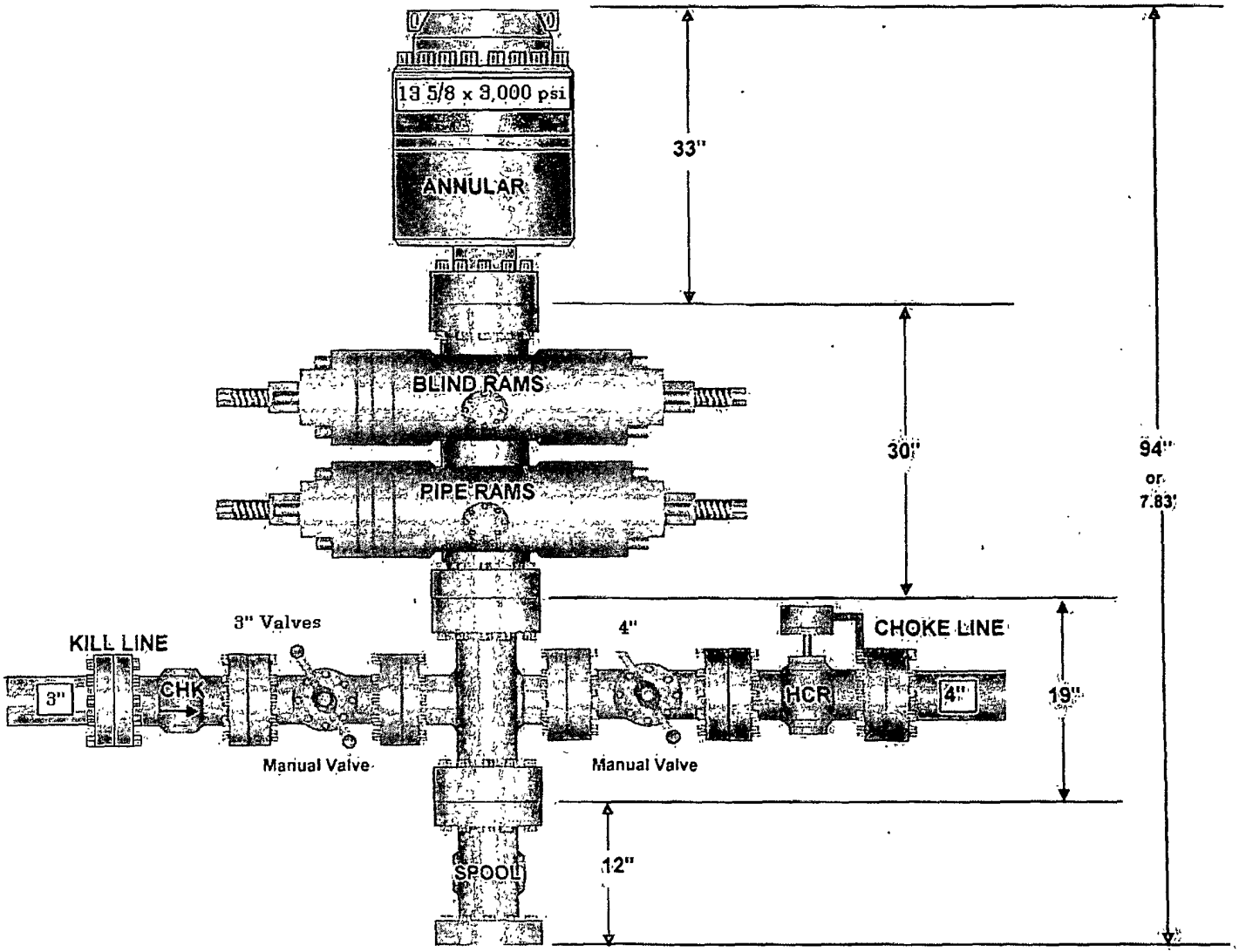


Exhibit 2
13 5/8" x 3M BOPE
stacking configuration

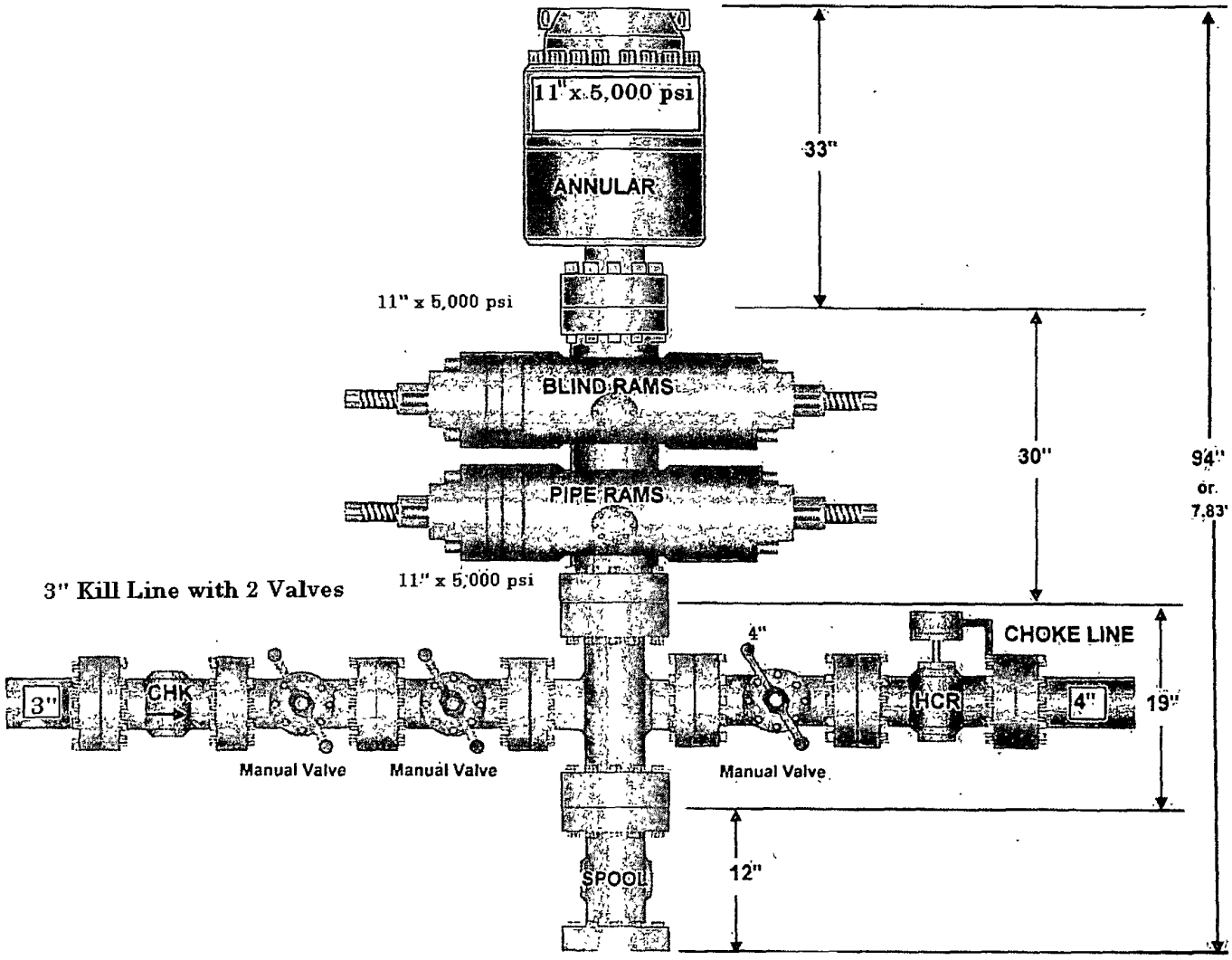
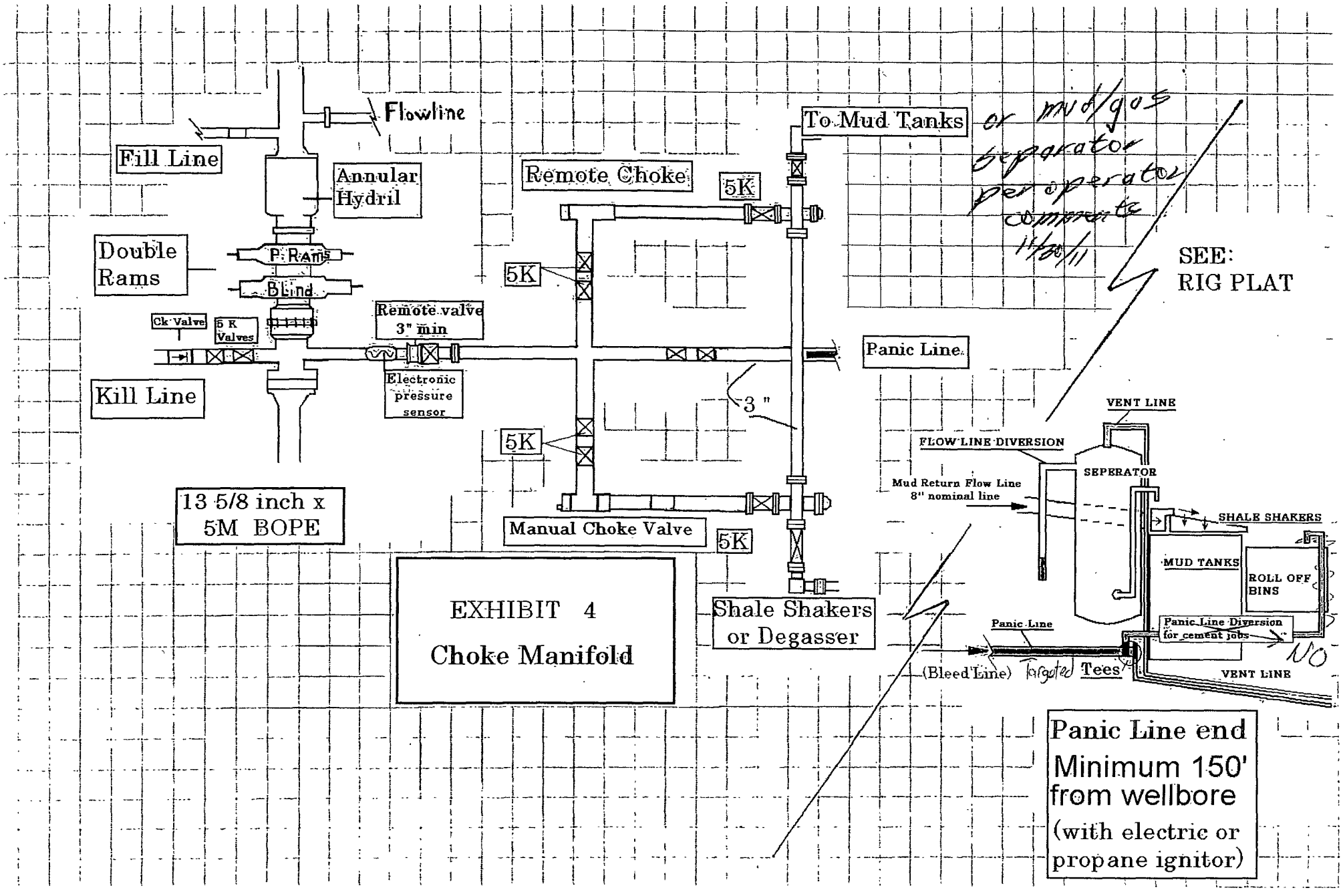


Exhibit 2.2

11" x 5M BOPE

stacking configuration


Flowline
Fill Line
Annular Hydril
Double Rams
Pipe Rams
Blind
Ck Valve
5 K Valves
Remote valve 3" min
Electronic pressure sensor
Kill Line
13 5/8 inch x 5M BOPE
Remote Choke
5K
5K
5K
5K
3"
Manual Choke Valve
To Mud Tanks
or mud/gas separator per operator comments 11/30/11
SEE: RIG PLAT
Panic Line
VENT LINE
FLOW LINE DIVERSION
SEPERATOR
Mud Return Flow Line 8" nominal line
SHALE SHAKERS
MUD TANKS
ROLL OFF BINS
Panic Line
Panic Line Diversion for cement jobs
NO
(Bleed Line) Targeted Tees
VENT LINE
Shale Shakers or Degasser
EXHIBIT 4
Choke Manifold
Panic Line end Minimum 150' from wellbore (with electric or propane ignitor)

✓

Generic Company
Layout

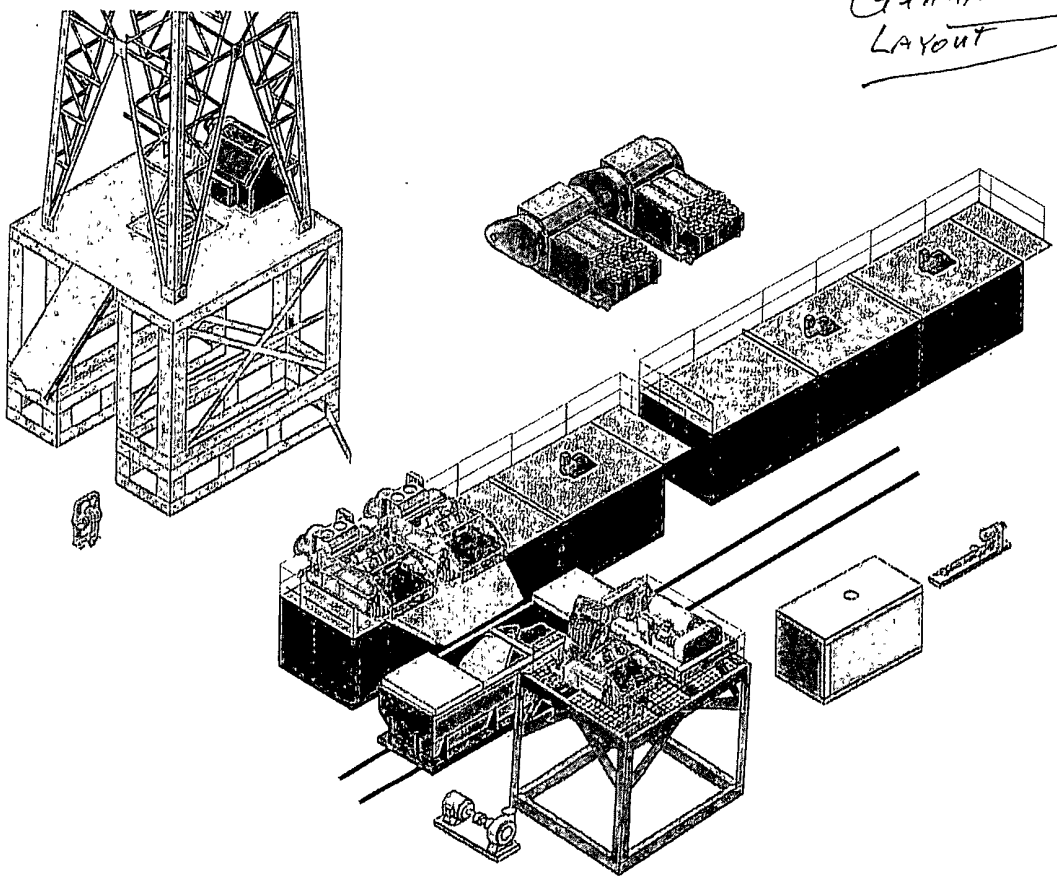


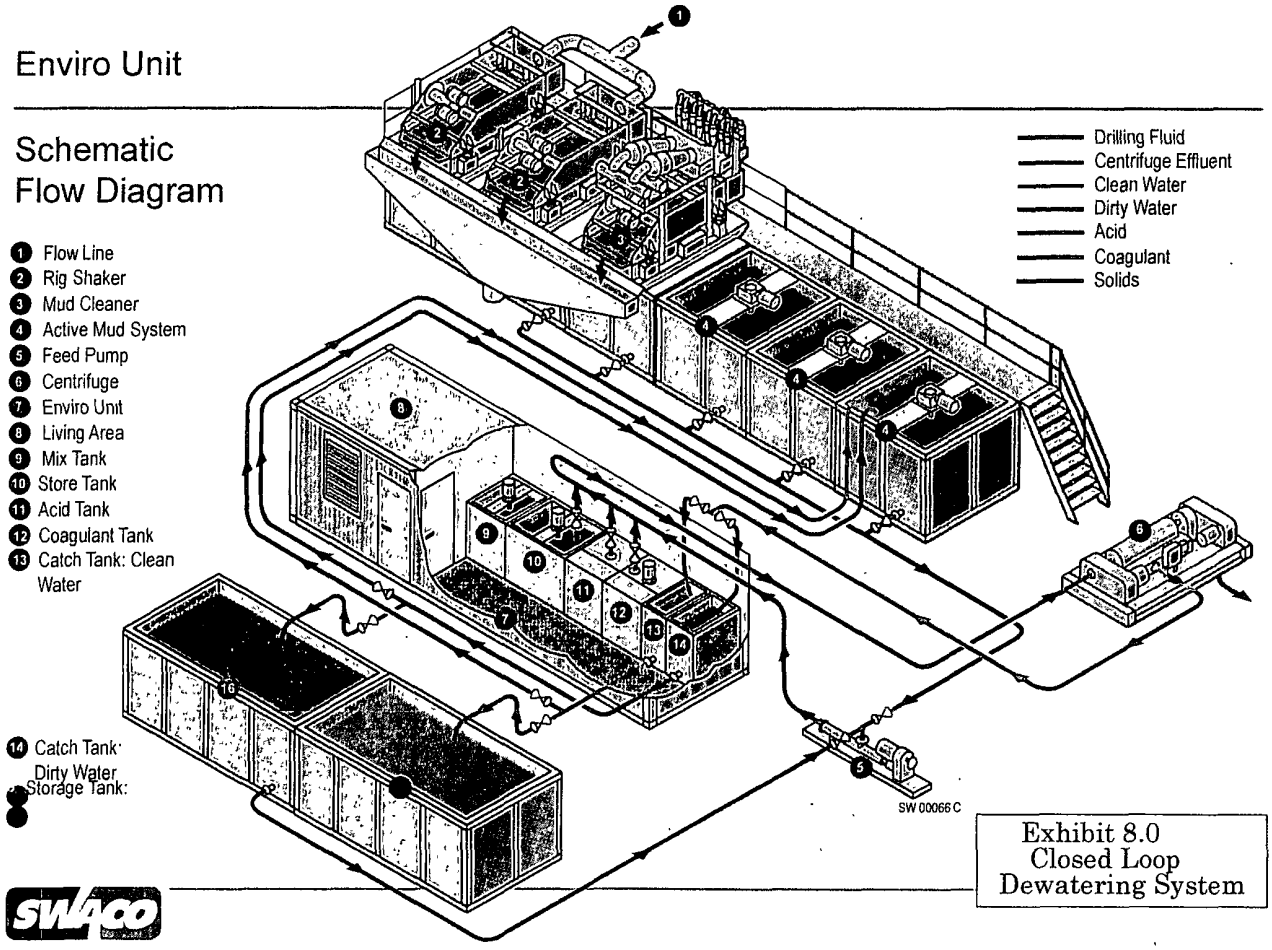
Exhibit 9
Closed Loop/Roll-Off Bins

MI SWACO

Generic Company
Layout

Enviro Unit

Schematic Flow Diagram



SW4CO

Exhibit 8.0
Closed Loop
Dewatering System

✓

Granite Company
Layout

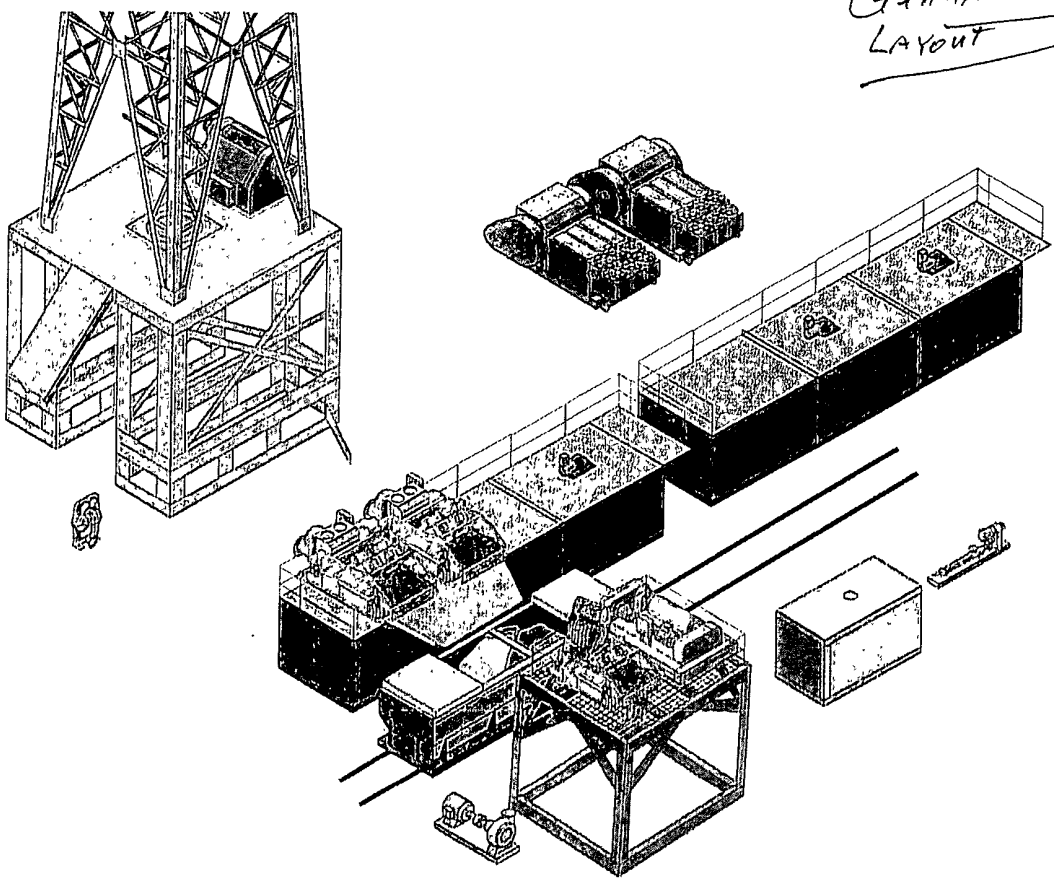


Exhibit 9
Closed Loop/Roll-Off Bins

MI SWACO

C-144 Attachment
Closed Loop System Maintenance Summary
NMOCD Rule 19.15.17 NMAC
District I, NMOCD,
Hobbs, NM at (575) 393-6161

Operator and Well:

Marshall and Winston Incorporated
Angel Ranch 11 #1H
Section 11(M to D), T. 20 S., R. 27 E.
Eddy County, NM

Equipment:

The anticipated equipment shall consist of:
Above Ground steel tanks and or Roll-off steel tanks.
Dual motion shale shakers, solid removal centrifuges, gas separator, one 500 bbl fresh water and one 500 bbl brine water frac tanks. The closed loop mud system shall follow the guidance of regulations NM 19.15.17.11 NMAC.

Maintenance:

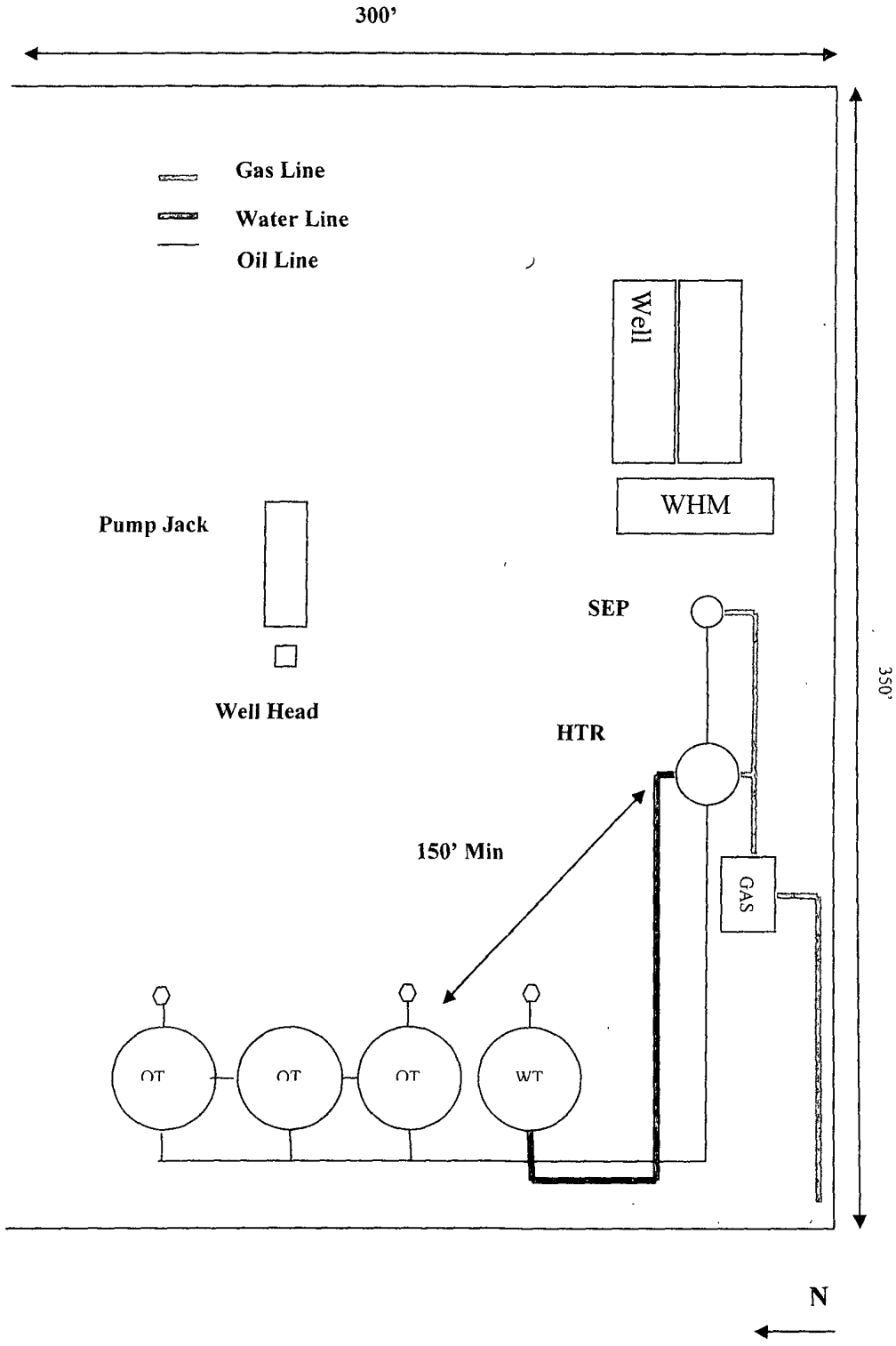
The drilling crew will inspect the closed loop circulating system at least once during each tour. Inspections or maintenance shall be entered into the driller's log. Any release of spill discovered will be reported to the NMOCD at (575) 393-6161 within 24 hours in accordance to NMOCD Rule 19.15.29 NMAC.

Closure:

All circulating fluids and cuttings deemed for disposal shall be transported to ► (NO.3). The other two sites listed are alternative state permitted waste disposal sites.

1) Gandy Marley Inc., waste disposal site, Route 45 Crossroads, Hwy 380, permit no. NM 711-01-020, EPID 0001002484.
2) Alternative disposal sites are Sundance Services, waste disposal site, located three miles east of Eunice, NM permit no. NM-01-0003.
► 3) Control Recovery Inc. waste disposal site, Halfway, Hwy 62,permit no. NM- 01-0006.

SITE FACILITY DIAGRAM



H2S Emergency Procedures

In the case of a release of gas containing H2S, the first responder(s) must isolate the area and prevent entry by other persons into the 100 ppm ROE. Additionally the first responder(s) must evacuate any public places encompassed by the 100 ppm ROE, First responder(s) must take care not to injure themselves during this operation. Marshall and Winston Inc. and/or local officials must be contacted to aid in this operation. Evacuation of the public should be beyond the 100 ppm ROE.

All responders must have training in the detection of H2S, measures for protection against the gas, equipment used for protection and emergency response. Additionally, responders must be equipped with H2S monitors and air packs in order to control the release. Use the "buddy system' to ensure no injuries during the response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved, NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H_2S and SO2:

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1.0	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1.0	2 ppm	N/A	1000 ppm

Contacting Authorities

Marshall and Winston Inc.'s personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Marshall and Winston Inc.'s response must be in coordination with the State of New Mexico's Hazardous Materials Emergency Response Plan' (HMER)

Marshall & Winston, Incorporated.
P.O. Box 50880 Midland, TX., 79710-0880
OFFICE 1-(432)-684-6373, Fax 1-(432)-687-2684

COMPANY PERSONNEL:	Cell Phone #
Otis Holt (Wellsite Supervisor)	1-(325)-206-1528
Gabe Herrera (Marshall & Winston – Engineer)	1-(432)-260-8650
Tom Brandt (Marshall & Winston – Operations)	1-(432)-553-9747
George Walters (Marshall & Winston – Geologist)	1-(432)-631-2051

HYDROGEN SULFIDE DRILLING OPERATIONS PLAN
PERMIAN BASIN

This Hydrogen Sulfide Drilling Operations Plan shall be implemented prior to drilling out from under casing (surface or intermediate) set above potential H_2S bearing formations.

I. Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H_2S).
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H_2S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H_2S Drilling Operations Plan and the Public Protection Plan.

All personnel entering a location posted with the potential of Hydrogen Sulfide shall be required to carry documentation that they have received the proper training. (Training certificate typically valid for 1 year after training)

II. Site Specific Information:

Upon installation of H2S Safety Equipment and Systems on a well, and prior to drilling out of casing above potential Hydrogen Sulfide bearing formations a briefing with all personnel on location shall be held. The briefing should include a review of H_2S Drilling Operations Plan and the Public Protection Plan. This briefing should include site specific elements such as;

- Identification of the briefing areas.
- Discussion of rig orientation and prevailing wind direction.

- Identification of access roads, including secondary egress.
- Confirmation that all personnel have current training.
- Formation tops of potential H2S bearing formations.

The H_2S Drilling Operations Plan and the Public Protection Plan shall be available at the well site.

III. H_2S Safety Equipment and Systems

1. Well Control Equipment that will be installed prior to drilling out of casing above potential Hydrogen Sulfide bearing formations:
   - A. Choke manifold with a minimum of one adjustable choke.
   - B At least one choke line must be directed away from the drilling unit and secured at the end. (For closed-loop operations this should be directed to containment bin at the back edge of the location.)
   - C Blind rams and pipe rams to accommodate all pipe sizes
   - D Annular preventor
   - E Properly sized closing unit.

1.1 Well control equipment to be available to install as needed should H2S be encountered;
   - .A Flare line with electronic igniter or continuous pilot.
   - B Mud gas separator
   - C Flare gun with flares.
   - D One portable S02 monitor positioned near flare line.

2. Protective equipment for essential personnel:
   - A. 30-minute air pack units located in the dog house and at briefing areas.

3. H_2S detection and monitoring equipment:
   - A. Two portable H_2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H_2S levels of 20 ppm are reached.

4. Visual warning systems:
   - A. Wind direction indicators.
   - B. Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

5. Mud program:
   A. The mud program shall be designed to minimize the volume of H_2S circulated to the surface. Proper mud weight, safe drilling practices, and the use of H_2S scavengers will minimize hazards when penetrating H_2S-bearing zones.
   B. A mud-gas separator and an H_2S gas buster will be utilized as required if H2S is encountered.

6. Metallurgy:
   A. All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H_2S service.
   B. All elastomers used for packing and seals shall be H_2S trim.

7. Communication:
   A. Communications shall be available on the rig site and in company vehicles. Communications equipment may include one or more of the following; land lines, satellite phones, cellular telephone and 2-way radios.

Emergency Phone Numbers

Artesia	State Police	(575) 746 -2703
Artesia	City Police	(575) 746 -2703
Artesia	Sheriff's Office	(575) 746 -9888
Artesia	Ambulance	911
Artesia	Fire Department	(575) 746 -2701
Artesia	LEPC (Local Emergency Planning Committee)	(575) 746 -2122
Artesia	NMOCD	(575) 748 -1283
Carlsbad	State Police	(575) 885 -3137
Carlsbad	City Police	(575) 885 -2111
Carlsbad	Sheriff's Office	(575) 887 -7551
Carlsbad	AMBULANCE	911
Carlsbad	Fire Department	(575) 885 - 2111
Carlsbad	LEPC (Local Emergency Planning Committee)	(575) 887 - 3798
Carlsbad	US Bureau of Land Management	(575) 887 – 6544
Santa Fe	N.M. Emergency Response Commission	(505) 476 -9600
24 Hr.	" " " "	(505) 827 -9126
Santa Fe	N.M. State Emergency Operations Center	(505) 476 -9635
Washington D.C.	National Emergency Response Center	1-(800) 424 -8802

Other Services :		
Houston	Boots & Coots IWC	1-800-256-9688 or (281) 931 -8884
Odessa	Cudd Pressure Control	(915) 699-0139 or (915) 563 -3356
Artesia	Halliburton	(575) 746-2757
Artesia	B.J. Services	(575) 746-3569

Air Ambulance

Lubbock, Tx	Flight For Life, 4000 24th St.	(806) 743 - 9911
Lubbock, TX	Aerocare, Rt 3 Box49-F	(806)747- 8923
Albuquerque, NM	Med Flight Air Amb, 2301 Yale Blvd SE #D3,	(505) 842 - 4433
Albuquerque, NM	S B Air Med Svc, 2505 Clark Carr Loop SE,	(505) 842 - 4949

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Marshall & Winston Incorporated
LEASE NO.:	NMNM02295
WELL NAME & NO.:	Angel Ranch Fed Com 11 1H
SURFACE HOLE FOOTAGE:	330' FSL & 660' FWL
BOTTOM HOLE FOOTAGE	330' FNL & 660' FWL
LOCATION:	Section 11, T. 20 S., R. 27 E., NMPM
COUNTY:	Eddy County, New Mexico

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Access Road Requirement:
The new access road shall be constructed entirely upon the existing two-track road, even when it parallels the buried pipeline.

Pipeline Requirement:
The pipeline shall be installed no farther than 6 feet from and parallel to the existing access road from the well to the tank battery. The fence line shall not be disturbed during installation.

Cave and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:
No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:
The pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the pad. All sides will be bermed.

Tank Battery Liners and Berms:
Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:
Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:
Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

Communitization Agreement

A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call theCarlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty (20) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

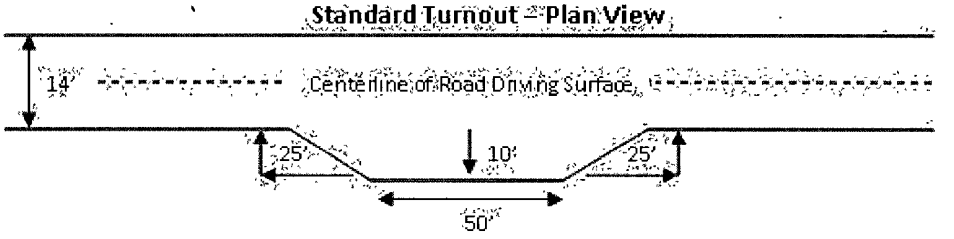
Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Ditching
Both sides of the road shall be ditched.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

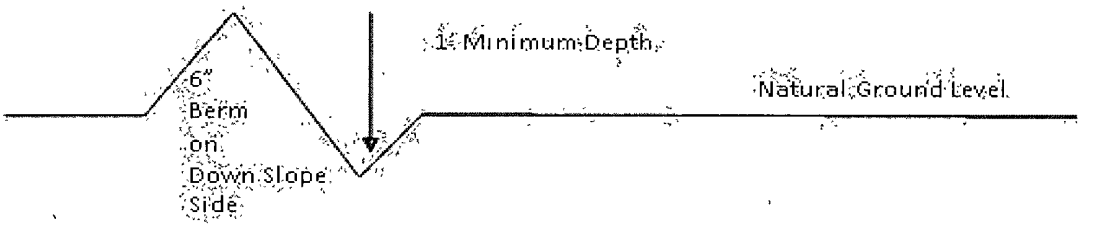
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%}$ + 100' = 200' lead-off ditch interval

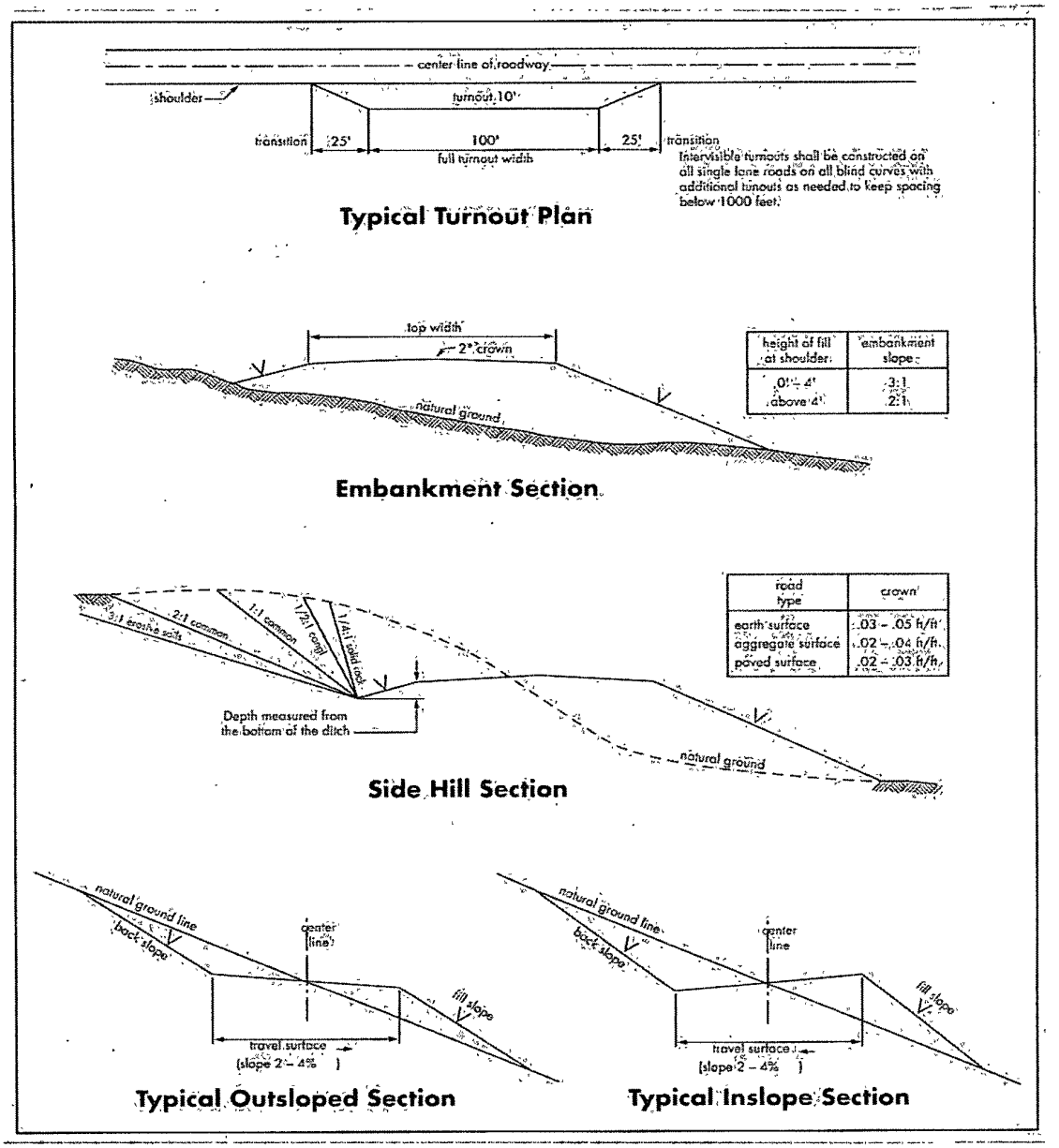
Culvert Installations

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Although Hydrogen Sulfide has not been reported in this section, it is always a potential hazard. If Hydrogen Sulfide is encountered, please report measured amounts and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

High Cave/Karst
Possible lost circulation in the Grayburg, San Andres, Delaware and Bone Spring.

1. The **13-3/8** inch surface casing shall be set at approximately **450** feet and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

    ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.
    Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

The pilot hole plugging procedure is approved as written, contact the BLM (575-361-2822) prior to tagging plugs.

3. The minimum required fill of cement behind the **7 X 5-1/2** inch production casing is:

   ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

   a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 9-5/8 inch intermediate casing shoe shall be **5000 (5M)** psi. **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

c. The results of the test shall be reported to the appropriate BLM office.

d. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

D. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

E. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

F. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

CRW 040212

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

IX. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed