

# OCD-ARTESIA

Form 3160-3  
(August 2007)

## UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

### APPLICATION FOR PERMIT TO DRILL OR REENTER

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

5. Lease Serial No. *BHL NM 06558581*  
*SHL* LC-028992-H

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No. *[38983]*  
NILE "34" FEDERAL COM. 2H

9. API Well No.  
*30015-39789*

10. Field and Pool, or Exploratory *[62685]*  
*Walters Lake; B.S.*

11. Sec., T. R. M. or Blk. and Survey or Area

SECTION 34 T17S-R30E

12. County or Parish  
EDDY CO.

13. State  
NM

1a. Type of work: ☒ DRILL ☐ REENTER

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

2. Name of Operator  
THREE RIVERS OPERATING COMPANY, LLC. *272295*

3a. Address 1122 S. CAPITAL OF TEXAS HWY SUITE 325 AUSTIN, TEXAS 78745  
3b. Phone No. (include area code) 512-600-3192

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

At surface 1840' FNL & 330' FWL SECTION 34 T17S-R30E

At proposed prod. zone 2310' FNL & 330' FEL SECTION 34 T17S-R30E

14. Distance in miles and direction from nearest town or post office\*  
Approximately 2 miles Southeast of Loco Hills New Mexico

15. Distance from proposed\* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330'

16. No. of acres in lease  
160

17. Spacing Unit dedicated to this well  
160

18. Distance from proposed location\* to nearest well, drilling, completed, applied for, on this lease, ft. 1500'

*nearest well 150' along drainage*

19. Proposed Depth  
MD-11,898'  
TVD-7500'  
PELOT-8300'

20. BLM/BIA Bond No. on file  
NMB-000737  
*& NMB-000672*

21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
3576' GL

22. Approximate date work will start\*  
WHEN APPROVED

23. Estimated duration

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 *Joe T. Janica*  
Title Permit Eng.

Name (Printed/Typed)  
Joe T. Janica

Date  
10/27/11

Approved by (Signature) */s/ James Stovall*

Name (Printed/Typed) */s/ James Stovall*

Date  
DEC 14 2011

Title  
FIELD MANAGER

Office  
CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

**APPROVAL FOR TWO YEARS**

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

(Continued on page 2)

\*(Instructions on page 2)

**ROSWELL CONTROLLED WATER BASIN**

**APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
ATTACHED**

**SEE ATTACHED FOR  
CONDITIONS OF APPROVAL**

*BT*

## OPERATOR CERTIFICATION

I HEREBY CERTIFY THAT I OR SOMEONE UNDER MY DIRECT SUPERVISION HAVE INSPECTED THE DRILL SITE AND ACCESS ROUTE PROPOSED HEREIN; THAT I AM FAMILIAR WITH THE CONDITIONS WHICH CURRENTLY EXIST; THAT I HAVE FULL KNOWLEDGE OF STATE AND FEDERAL LAWS APPLICABLE TO THIS OPERATIONS THAT THE STATEMENT MADE IN THIS APD PACKAGE ARE TO THE BEST OF MY KNOWLEDGE ARE TRUE AND CORRECT AND THAT THE WORK ASSOCIATED WITH THE OPERATIONS PROPOSED HEREIN WILL BE PERFORMED IN CONFORMITY WITH THIS APD PACKAGE AND THE TERMS AND CONDITIONS UNDER WHICH IT IS APPROVED. I ALSO CERTIFY THAT I OR THE COMPANY THAT I REPRESENT, AM RESPONSIBLE FOR THE OPERATIONS CONDUCTED UNDER THIS APPLICATION. THESE STATEMENTS ARE SUBJECT TO THE PROVISIONS OF 18 U. S. C. 1001 FOR THE FILING OF A FALSE STATEMENT.

### Operators representatives

#### Before construction

TIERRA EXPLORATION

P. O. BOX 2188

HOBBS, NEW MEXICO 88241

JOE JANICA OFF: 575-391-8503

CELL 575-390-1598

#### During and after construction

THREE RIVERS OPERATING CO. LLC

1122 SOUTH CAPITAL OF TEXAS

HI-WAY SUITE 325

AUSTIN, TEXAS 78745

STEPHEN ANDERSON

OFFICE PHONE 512-600-3192

NAME

TITLE

Permit Eng.

DATE 10/11/11

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

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

☐ AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

API Number <b>30015-39789</b>	Pool Code <b>62685</b>	Pool Name <b>WALTERS LAKE; Bone Spring</b>
Property Code <b>38983</b>	Property Name <b>NILE 34 FEDERAL</b>	Well Number <b>2H</b>
OGRID No. <b>272295</b>	Operator Name <b>THREE RIVERS OPERATING</b>	Elevation <b>3576'</b>

Surface Location									
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	34	17-S	30-E		1840	NORTH	330	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
H	34	17-S	30-E		2310	NORTH	330	EAST	EDDY
Dedicated Acres <b>160</b>		Joint or Infill		Consolidation Code		Order No.			

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

<p><b>SECTION, QUARTER &amp; SIXTEENTH CORNER COORDINATES</b></p> <p>(A) - Y=652944.3 N, X=612306.0 E (B) - Y=652954.6 N, X=617584.7 E (C) - Y=651624.5 N, X=612310.1 E (D) - Y=651634.5 N, X=617589.3 E</p> <p><b>PROJECT AREA</b> 1840' <b>PRODUCING AREA</b> 475' POE FWL &amp; 1885' FNL S.L. SEE DETAIL GRID AZ.=95°41'30" HORIZ. DIST.=4644.8' B.H. 330'</p>		<p><b>OPERATOR CERTIFICATION</b></p> <p>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.</p> <p><i>Joe T. Janica</i> Signature Date <b>Joe T. Janica</b> 10/11/11 Printed Name <b>joejanica@valornet.com</b> E-mail Address</p>
<p><b>GEODETIC COORDINATES NAD 27 NME</b></p> <p><b>SURFACE LOCATION</b> Y=652425.1 N X=612637.5 E LAT.=32.793070° N LONG.=103.966792° W</p> <p><b>BOTTOM HOLE LOCATION</b> Y=651964.6 N X=617258.2 E</p> <p>3595.6' 3605.5' 600' 3572.6' DETAIL 3567.3'</p>		<p><b>SURVEYOR CERTIFICATION</b></p> <p>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.</p> <p><b>SEPTEMBER 22, 2011</b></p> <p>Date of Survey Signature &amp; Seal of Professional Surveyor: <i>Ronald J. Eidson</i> <b>RONALD J. EIDSON</b> NEW MEXICO 3239 10/04/2011 Certificate Number: 12641 Ronald J. Eidson 3239 DSS JWSC W.O.: 11.11.2011</p>

In response to questions asked under Section II of Bulletin NTL-6, the following information on the above well will be provided.

1. LOCATION: 1840' FNL & 330' FWL SECTION 34 T17S-R30E EDDY CO. NM  
BHL 2310' FNL & 330' FEL SECTION 34 T17S-R30E EDDY CO. NM
2. ELEVATION ABOVE SEA LEVEL: 3576' GL
3. GEOLOGICAL NAME OF SURFACE FORMATION: Quaternary Aeolian Deposits;
4. DRILLING TOOLS AND ASSOCIATED EQUIPMENT: Conventional rotary drilling rig using drilling mud as a circulating medium for the removal of solids from hole.
5. PROPOSED DRILLING DEPTH: TVD-7500' MD-11,898'

6. ESTIMATED TOPS OF GEOLOGICAL FORMATIONS:

Rustler Anhydrite	360'	Brushy Canyon	3252'
Top Salt	539'	1st Bone Spring SD.	6274'
Base Salt	1292'	2nd Bone Spring SD.	7086'
7 Rivers	1780'	3rd Bone Spring SD.	8094'

7. POSSIBLE MINERAL BEARING FORMATIONS:

*Missing formations - Seven Rivers not 1500' thick*  
*Depth should be listed in formations*

Queen	Oil	Wolfcamp	Oil
Brushy Canyon	Oil		
Bone Spring Sd.	Oil	Possible Fresh Water	265'

8. CASING PROGRAM:

HOLE SIZE	INTERVAL	CASING OD	WEIGHT	THREAD	COLLAR	GRADE	CONDITION
26"	0-40'	20"	NA	NA	NA	Conductor	New
17½"	0-400' 365	13 3/8"	48#	8-R	ST&C	H-40	New
12½"	0-3500'	9 5/8"	40#	8-R	LT&C	N-80	New
8 3/4"	0-11,898'	5½"	17#	8-R	LT&C	N-80	New

CASING SAFETY FACTORS: Collapse 1.125 Burst 1.00 Body Yield 1.5 Joint Strength  
 8-Round 1.8  
 Buttress 1.6

## 9. CASING CEMENTING & SETTING DEPTHS:

20"	Conductor	Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
13 3/8"	Surface	Run and set <del>400'</del> of 13 3/8" 48# H-40 ST&C casing. Cement with 400 Sx. of Class "C" cement + 2% CaCl, Yield, 1.35, circulate cement to surface 100% Excess.
9 5/8"	Intermediate	Run and set 3500' of 9 5/8" 40# ST&C N-80 casing. Cement with 1275 Sx. of Halco Light cement + 5% Salt, + 5# Gilsonite/Sx. Yield 1.85, tail in with 325 Sx. of Class "C" cement, Yield 1.33, circulate cement to surface 100% Excess.
		Drill 8 3/4" pilot hole to 8300', log open hole section and set a 450 Sx. cement plug back to KO point at 6927' cement yield .99 use 30% excess.
5 1/2"	Production	Run and set 11,898' of 5 1/2" 17# N-80 LT&C casing. Cement with 470 Sx. of EconoCem-Class "C" cement + 0.25% HR-601, Yield 2.61, 50% excess, tail in with 455 Sx. of SoluCem Class "H" cement + 0.25% D-AIR 3000 + 0.6% HR-601, Yield 2.61 use 50% Excess cement. Cement should circulate to surface.

*See  
COA*

## 10. Pressure Control Equipment

The Pressure Control System for this well will consist of a "Multi-bowl" Wellhead ( See Exhibit I ), a 5000 psi Blowout Preventer ( BOP ) Stack ( See Exhibit II ), a Choke Manifold ( See Exhibit III ), and a Mud/Gas Separator with Flare Stack ( See Exhibit IV ). All BOP components will conform to and be tested to Onshore Oil & Gas Order No. 2 for a 5000 psi system.

The Multi-bowl Wellhead will be installed on the 13 3/8" Surface Casing. The Multi-bowl type wellhead allows the setting of the intermediate and production casings without nipping-down the BOP Stack.

The BOP Stack and pressure control equipment will be nipped-up on the Multi-bowl after surface casing has been set. The BOP Stack will consist of a drilling spool, dual ram type preventer, and an annular type preventer. The dual ram preventer will be configured with drill pipe rams in the bottom cavity and blind rams in the top cavity. A remote control operating station for the BOP will be installed on the rig floor. The pipe rams will be function tested daily. The blind rams will be function tested each trip when pipe is pulled from the hole. Checks will be recorded in the Daily Report.

The drilling spool will be configured with a choke and kill line outlet. The kill outlet will be connected to the mud pumps via an isolation and check valve assembly. The choke outlet will be connected to the choke manifold via an isolation valve, a Hydraulically Controlled Valve ( HCR ), and a choke line.

The choke manifold will be equipped with a remotely controlled hydraulically operated choke. A remote operating station will be installed on the rig floor.

Other related Pressure Control Equipment will include an upper and lower Kelly cock, drill pipe safety valves, and inside BOP.

# APPLICATION TO DRILL

THREE RIVERS OPERATING COMPANY, LLC.  
 NILE "34" FEDERAL # 2H  
 UNIT "E" SECTION 34  
 T17S-R30E EDDY CO. NM

## 11. PROPOSED MUD CIRCULATING SYSTRM:

DEPTH	MUD WT.	VISC.	FLUID LOSS	TYPE MUD SYSTEM
40-400' <sup>365</sup>	8.6-8.8	28-34	NC	Fresh water Gel (Spud Mud) Use paper to control seepage.
400-3500'	10.0-10.2	28-34	NC	Brine water use paper to control seepage and high viscosity sweeps to clean hole.
3500-7000'	8.4-8.6	28-34	NC	Fresh water use paper to control seepage and high viscosity sweeps to clean hole.
7000-8300'	8.8-9.6	28-34	NC	Cut brine use high viscosity sweeps to clean hole.
Plug back to 6500'				
6500-11,898'	8.8-9.6	40-45	NC	Cut Brine Polymer mud system use additives as required to keep hole stabilized.

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run DST's, open hole logs, cut cores and casing, the viscosity, water loss and other properties may have to be altered to meet these requirements.

THIS WELL WILL BE DRILLED USING A CLOSED MUD SYSTEM.

APPLICATION TO DRILL

THREE RIVERS OPERATING COMPANY, LLC.  
NILE "34" FEDERAL # 2H  
UNIT "E" SECTION 34  
T17S-R30E EDDY CO. NM

12. LOGGING, CORING, AND TESTING PROGRAM: *See COA*

Open hole logs: Run Gamma Ray-Caliper, Litho-Density, Coppedensated Neutron from 8300' back to 9 5/8" casing shoe.

Run Gamma Ray, Density Compensated Neutron only from 9 5/8" casing shoe back to surface.

Two man mud logging unit will be rigged up on the hole form surface casing shoe and will remain on the hole to final total depth. No DST's, cores are planned.

13. POTENTIAL HAZARDS:

No abnormal pressures or temperatures are expected. There is no known presence of H<sup>2</sup>S in this area. If H<sup>2</sup>S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 3928 PSI, and Estimated BHT 173°.

14. ANTICIPATED STARTING DATE AND DURATION OF OPERATION:

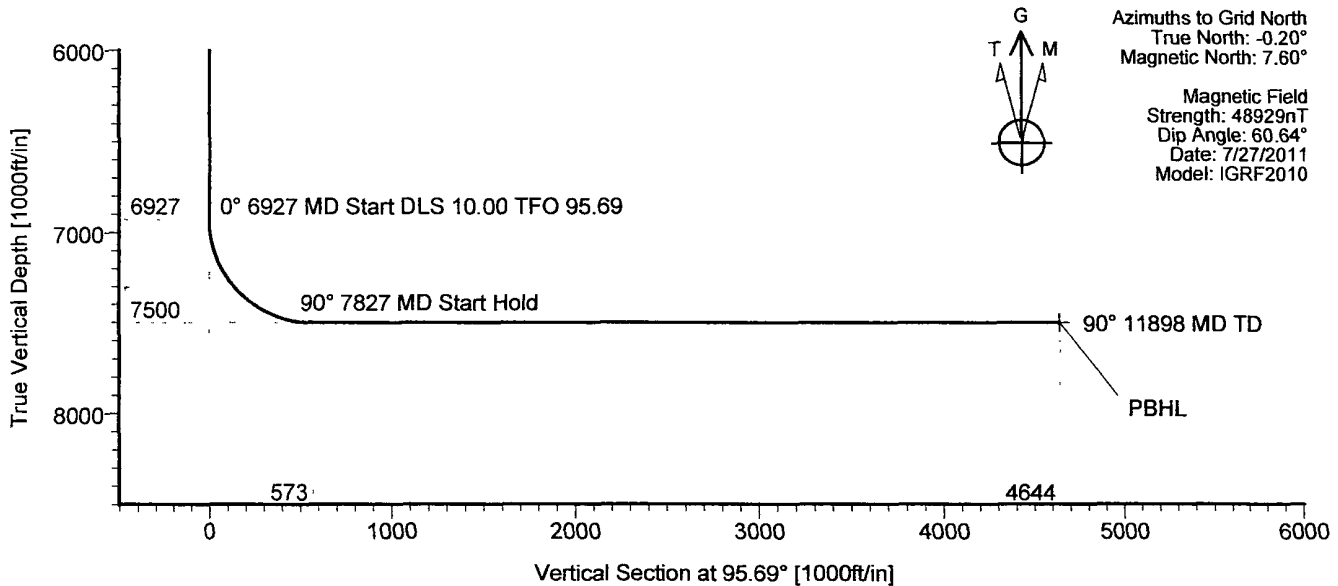
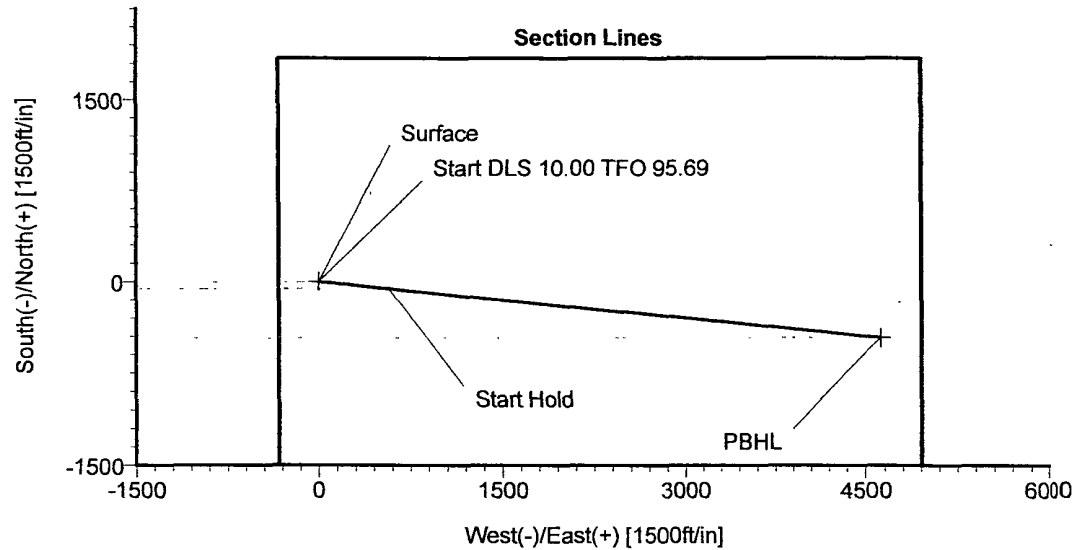
Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available.. Move in operation and drilling is expected to take 35 days. If production casing is run then an additional 21 days will be needed to complete well and construct surface facilities and/or lay flowlines in order to place well on production.

15. OTHER FACETS OF OPERATIONS:

After running casing, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The WOLFCAMP formation will be perforated and stimulated in order to establish production. The well will be swab tested and potentialied as an oil well.

# THREE RIVERS OPERATING COMPANY LLC

Field: Lea County, NM  
 Site: Nile Federal 2H  
 Well: #2H  
 Wellpath: Lateral  
 Plan: Plan #2



Azimuths to Grid North  
 True North: -0.20°  
 Magnetic North: 7.60°

Magnetic Field  
 Strength: 48929nT  
 Dip Angle: 60.64°  
 Date: 7/27/2011  
 Model: IGRF2010

## TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Surface	0.00	0.00	0.00	652425.10	612637.50	32°47'35.053N	103°58'00.449W	Point
PBHL	7500.00	-460.50	4620.70	651964.60	617258.20	32°47'30.335N	103°57'06.338W	Point

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	95.69	0.00	0.00	0.00	0.00	0.00	0.00	
2	6927.04	0.00	95.69	6927.04	0.00	0.00	0.00	95.69	0.00	
3	7827.04	90.00	95.69	7500.00	-56.82	570.13	10.00	95.69	572.96	
4	11897.67	90.00	95.69	7500.00	-460.50	4620.70	0.00	0.00	4643.59	PBHL

ARCHER DIRECTIONAL DRILLING SERVICES  
 911 Regional Park Drive Houston, Texas 77060  
 Phone: 713-934-9600 Fax: 713-934-9067

**Archer**

Plan: Plan #2 (#2H/Lateral)

Created By: Ashley Wischnewsky

Date: 10/5/2011



# Planning Report

<b>Company:</b> THREE RIVERS OPERATING COMPANY		<b>Date:</b> 10/5/2011	<b>Time:</b> 15:33:50	<b>Page:</b> 1
<b>Field:</b> Lea County, NM		<b>Co-ordinate(NE) Reference:</b> Well: #2H, Grid North		
<b>Site:</b> Nile Federal 2H		<b>Vertical (TVD) Reference:</b> 3576'GL+22'KB 3598.0		
<b>Well:</b> #2H		<b>Section (VS) Reference:</b> Well (0.00N,0.00E,95.69Az)		
<b>Wellpath:</b> Lateral		<b>Plan:</b> Plan #2		

<b>Field:</b> Lea County, NM	
<b>Map System:</b> US State Plane Coordinate System 1927	<b>Map Zone:</b> New Mexico, Eastern Zone
<b>Geo Datum:</b> NAD27 (Clarke 1866)	<b>Coordinate System:</b> Well Centre
<b>Sys Datum:</b> Mean Sea Level	<b>Geomagnetic Model:</b> IGRF2010

<b>Site:</b> Nile Federal 2H New SL 10-5-11	
<b>Site Position:</b>	<b>Northing:</b> 652425.10 ft
<b>From:</b> Map	<b>Easting:</b> 612637.50 ft
<b>Position Uncertainty:</b> 0.00 ft	<b>Latitude:</b> 32 47 35.053 N
<b>Ground Level:</b> 3576.00 ft	<b>Longitude:</b> 103 58 0.449 W
	<b>North Reference:</b> Grid
	<b>Grid Convergence:</b> 0.20 deg

<b>Well:</b> #2H		<b>Slot Name:</b>	
<b>Well Position:</b> +N/-S 0.00 ft	<b>Northing:</b> 652425.10 ft	<b>Latitude:</b> 32 47 35.053 N	
+E/-W 0.00 ft	<b>Easting:</b> 612637.50 ft	<b>Longitude:</b> 103 58 0.449 W	
<b>Position Uncertainty:</b> 0.00 ft			

<b>Wellpath:</b> Lateral		<b>Drilled From:</b> Surface	
<b>Current Datum:</b> 3576'GL+22'KB	<b>Height:</b> 3598.00 ft	<b>Tie-on Depth:</b> 0.00 ft	
<b>Magnetic Data:</b> 7/27/2011		<b>Above System Datum:</b> Mean Sea Level	
<b>Field Strength:</b> 48929 nT		<b>Declination:</b> 7.80 deg	
<b>Vertical Section: Depth From (TVD)</b>	<b>+N/-S</b>	<b>Mag Dip Angle:</b> 60.64 deg	
ft	ft	<b>+E/-W</b>	<b>Direction</b>
		ft	deg
0.00	0.00	0.00	95.69

<b>Plan:</b> Plan #2	<b>Date Composed:</b> 10/5/2011
<b>Principal:</b> No	<b>Version:</b> 1
	<b>Tied-to:</b> From Surface

Plan Section Information										
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	95.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6927.04	0.00	95.69	6927.04	0.00	0.00	0.00	0.00	0.00	95.69	
7827.04	90.00	95.69	7500.00	-56.82	570.13	10.00	10.00	0.00	95.69	
11897.67	90.00	95.69	7500.00	-460.50	4620.70	0.00	0.00	0.00	0.00	PBHL

Survey										
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
6927.04	0.00	95.69	6927.04	0.00	0.00	0.00	0.00	0.00	0.00	
6950.00	2.30	95.69	6949.99	-0.05	0.46	0.46	10.00	10.00	0.00	
7000.00	7.30	95.69	6999.80	-0.46	4.62	4.64	10.00	10.00	0.00	
7050.00	12.30	95.69	7049.06	-1.30	13.08	13.14	10.00	10.00	0.00	
7100.00	17.30	95.69	7097.39	-2.57	25.78	25.91	10.00	10.00	0.00	
7150.00	22.30	95.69	7144.42	-4.25	42.63	42.84	10.00	10.00	0.00	
7200.00	27.30	95.69	7189.79	-6.33	63.48	63.80	10.00	10.00	0.00	
7250.00	32.30	95.69	7233.17	-8.79	88.20	88.64	10.00	10.00	0.00	
7300.00	37.30	95.69	7274.21	-11.62	116.58	117.16	10.00	10.00	0.00	
7350.00	42.30	95.69	7312.62	-14.79	148.42	149.15	10.00	10.00	0.00	
7400.00	47.30	95.69	7348.09	-18.28	183.46	184.37	10.00	10.00	0.00	
7450.00	52.30	95.69	7380.35	-22.07	221.45	222.55	10.00	10.00	0.00	
7500.00	57.30	95.69	7409.17	-26.12	262.09	263.39	10.00	10.00	0.00	
7550.00	62.30	95.69	7434.31	-30.40	305.08	306.59	10.00	10.00	0.00	
7600.00	67.30	95.69	7455.60	-34.89	350.08	351.81	10.00	10.00	0.00	
7650.00	72.30	95.69	7472.86	-39.54	396.76	398.72	10.00	10.00	0.00	
7700.00	77.30	95.69	7485.97	-44.32	444.75	446.96	10.00	10.00	0.00	

# Planning Report

Company: THREE RIVERS OPERATING COMPANY  
 Field: Lea County, NM  
 Site: Nile Federal 2H  
 Well: #2H  
 Wellpath: Lateral

Date: 10/5/2011 Time: 15:33:50  
 Co-ordinate(NE) Reference: Well: #2H, Grid North  
 Vertical (TVD) Reference: 3576'GL+22'KB 3598.0  
 Section (VS) Reference: Well (0.00N,0.00E,95.69Azi)  
 Plan: Plan #2

Page: 2

## Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
7750.00	82.30	95.69	7494.83	-49.20	493.70	496.15	10.00	10.00	0.00	
7800.00	87.30	95.69	7499.36	-54.14	543.24	545.93	10.00	10.00	0.00	
7827.04	90.00	95.69	7500.00	-56.82	570.13	572.96	10.00	10.00	0.00	
7900.00	90.00	95.69	7500.00	-64.05	642.73	645.92	0.00	0.00	0.00	
8000.00	90.00	95.69	7500.00	-73.97	742.24	745.92	0.00	0.00	0.00	
8100.00	90.00	95.69	7500.00	-83.89	841.75	845.92	0.00	0.00	0.00	
8200.00	90.00	95.69	7500.00	-93.81	941.25	945.92	0.00	0.00	0.00	
8300.00	90.00	95.69	7500.00	-103.72	1040.76	1045.92	0.00	0.00	0.00	
8400.00	90.00	95.69	7500.00	-113.64	1140.27	1145.92	0.00	0.00	0.00	
8500.00	90.00	95.69	7500.00	-123.56	1239.78	1245.92	0.00	0.00	0.00	
8600.00	90.00	95.69	7500.00	-133.47	1339.28	1345.92	0.00	0.00	0.00	
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9400.00	90.00	95.69	7500.00	-212.81	2135.34	2145.92	0.00	0.00	0.00	
9500.00	90.00	95.69	7500.00	-222.73	2234.85	2245.92	0.00	0.00	0.00	
9600.00	90.00	95.69	7500.00	-232.64	2334.35	2345.92	0.00	0.00	0.00	
9700.00	90.00	95.69	7500.00	-242.56	2433.86	2445.92	0.00	0.00	0.00	
9800.00	90.00	95.69	7500.00	-252.48	2533.37	2545.92	0.00	0.00	0.00	
9900.00	90.00	95.69	7500.00	-262.39	2632.88	2645.92	0.00	0.00	0.00	
10000.00	90.00	95.69	7500.00	-272.31	2732.38	2745.92	0.00	0.00	0.00	
10100.00	90.00	95.69	7500.00	-282.23	2831.89	2845.92	0.00	0.00	0.00	
10200.00	90.00	95.69	7500.00	-292.14	2931.40	2945.92	0.00	0.00	0.00	
10300.00	90.00	95.69	7500.00	-302.06	3030.90	3045.92	0.00	0.00	0.00	
10400.00	90.00	95.69	7500.00	-311.98	3130.41	3145.92	0.00	0.00	0.00	
10500.00	90.00	95.69	7500.00	-321.89	3229.92	3245.92	0.00	0.00	0.00	
10600.00	90.00	95.69	7500.00	-331.81	3329.42	3345.92	0.00	0.00	0.00	
10700.00	90.00	95.69	7500.00	-341.73	3428.93	3445.92	0.00	0.00	0.00	
10800.00	90.00	95.69	7500.00	-351.64	3528.44	3545.92	0.00	0.00	0.00	
10900.00	90.00	95.69	7500.00	-361.56	3627.95	3645.92	0.00	0.00	0.00	
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11100.00	90.00	95.69	7500.00	-381.40	3826.96	3845.92	0.00	0.00	0.00	
11200.00	90.00	95.69	7500.00	-391.31	3926.47	3945.92	0.00	0.00	0.00	
11300.00	90.00	95.69	7500.00	-401.23	4025.97	4045.92	0.00	0.00	0.00	
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11600.00	90.00	95.69	7500.00	-430.98	4324.50	4345.92	0.00	0.00	0.00	
11700.00	90.00	95.69	7500.00	-440.90	4424.00	4445.92	0.00	0.00	0.00	
11800.00	90.00	95.69	7500.00	-450.81	4523.51	4545.92	0.00	0.00	0.00	
11897.67	90.00	95.69	7500.00	-460.50	4620.70	4643.59	0.00	0.00	0.00	PBHL

## Targets

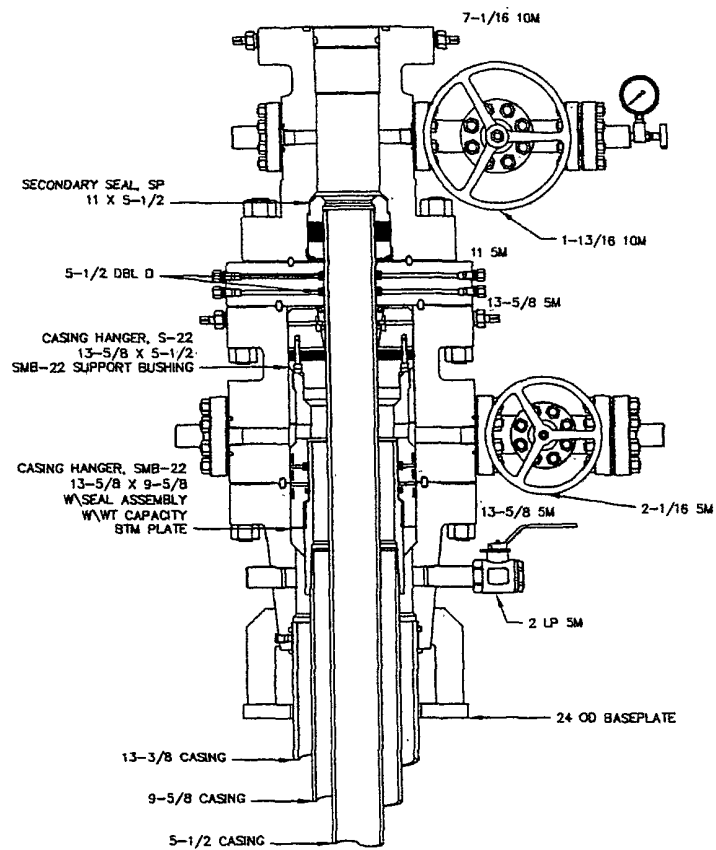
Name	Description Dip. Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude --->		<--- Longitude --->	
							Deg. Min. Sec		Deg. Min. Sec	
Surface		0.00	0.00	0.00	652425.10	612637.50	32 47 35.053 N		103 58 0.449 W	
PBHL		7500.00	-460.50	4620.70	651964.60	617258.20	32 47 30.335 N		103 57 6.338 W	

EXHIBIT I

WELLHEAD SCHEMATIC

Three Rivers Operating Company, LLC

Nile 34 Federal # 2H

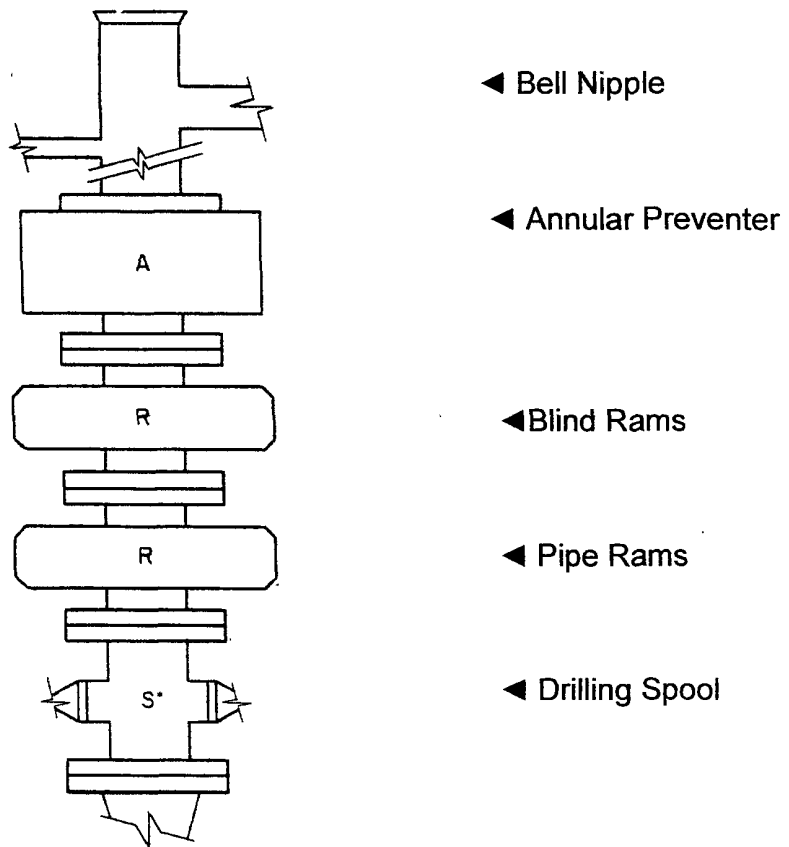


# EXHIBIT II

## BLOWOUT PREVENTER SCHEMATIC

Three Rivers Operating Company, LLC

Nile 34 Federal # 2H



13 5/8" – 5M PSI

EXHIBIT II  
SKETCH OF B.O.P. TO BE USED ON

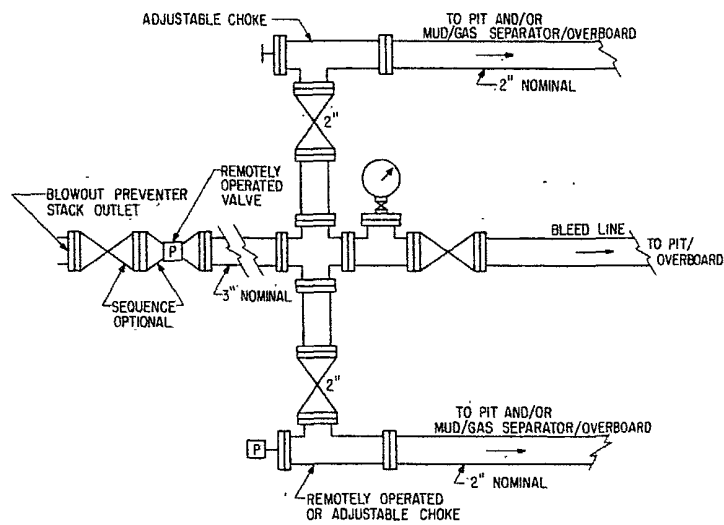
THREE RIVERS OPERATING COMPANY, LLC.  
MILE "34" FEDERAL # 2H  
UNIT "E" SECTION 34  
T17S-R30E EDDY CO. NM

# EXHIBIT III

## CHOKE MANIFOLD SCHEMATIC

Three Rivers Operating Company, LLC

Nile 34 Federal # 2H



5M PSI

EXHIBIT III  
CHOKE MANIFOLD SCHEMATIC

THREE RIVERS OPERATING COMPANY, LLC.  
NILE "34" FEDERAL # 2H  
UNIT "E" SECTION 34  
T17S-R30E EDDY CO. NM

# EXHIBIT IV

## MUD/GAS SEPERATOR SCHEMATIC

Three Rivers Operating Company, LLC

Nile 34 Federal # 2H

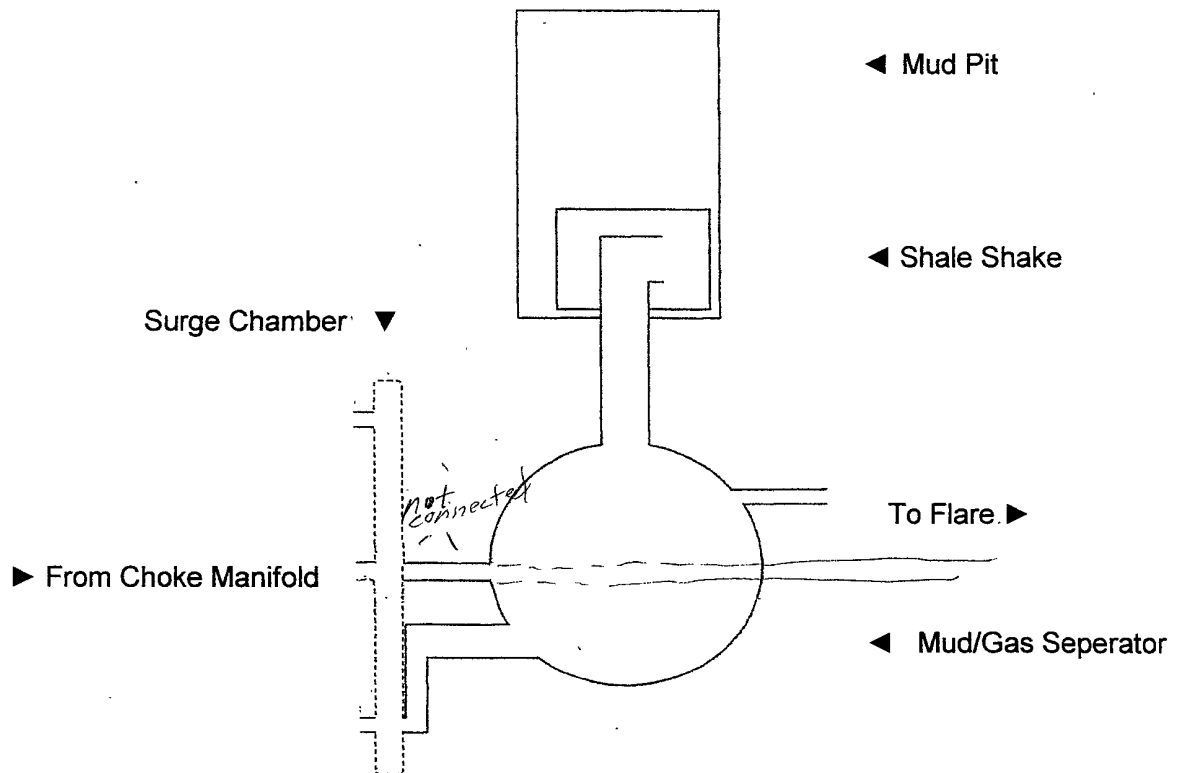
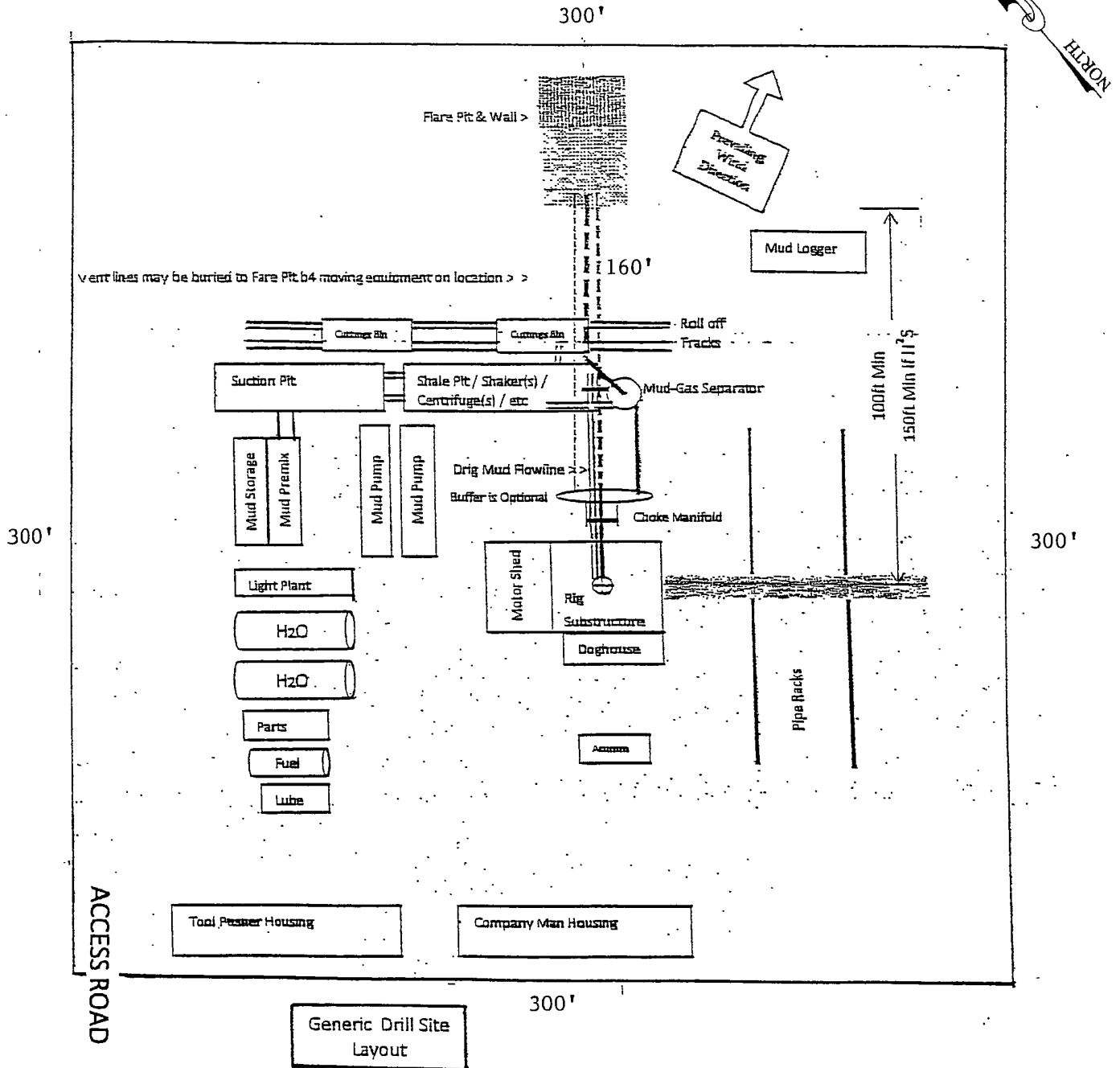


EXHIBIT IV  
MUD/GAS SEPERATOR SCHEMATIC

THREE RIVERS OPERATING COMPANY, LLC.  
NILE "34" FEDERAL # 2H  
UNIT "E" SECTION 34  
T17S-R30E EDDY CO. NM



Preplanning reasonable spacing accommodations for a useable "Closed Loop" drillsite layout is challenging. Particular site specific conflicts need to be resolved. This generic APD plat was prepared to demonstrate several necessary elements. The plat should include: a north arrow, prevailing wind direction, spacing access for truck removal of cutting bins, flare pit location, and piping provision to vent all combustible gas to the flare pit. Include the choke manifold and mud-gas separator location and their connection routing.

#### EXHIBIT "D" RIG LAY OUT PLAT

THREE RIVERS OPERATING COMPANY, LLC.  
NILE "34" FEDERAL # 2H  
UNIT "E" SECTION 34  
T17S-R30E EDDY CO. NM

**Three Rivers Operating Company, LLC**

*com*  
**Nile 34 Federal # 2H**

**H2S Drilling Operation Plan**

Three Rivers Operating does not anticipate encountering any formations in this wellbore which would contain hazardous levels of H2S.

However, prior to commencing operations all personnel will be trained by a qualified instructor as follows:

1. Recognizing the hazards, characteristics, and properties of H2S.
2. Implementing the use and proper maintenance of personal protective equipment and life support systems.
3. Installation and operation of H2S detectors and alarms.
4. Initiating evacuation procedures and organizing safe rally points.
5. Emergency rescue and first aid procedures.

This well and its anticipated facility are not expected to have Hydrogen Sulfide releases. However , there may be Hydrogen Sulfide production in the nearby area . There are no private residences in the area but a contingency plan has been orchestrated. THREE RIVERS OPERATING COMPANY, LLC. Will have a company representative available to rig personnel throughout the drilling or production operations. If Hydrogen Sulfide is detected or suspected, monitoring equipment will be acquired for monitoring and/or testing.



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#### GENERAL H2S EMERGENCY ACTIONS:

In the event of an H2S emergency, the following plan will be initiated.

- 1) All personnel will immediately evacuate to an up-wind and if possible up-hill "safe area".
- 2) If for any reason a person must enter the hazardous area, they must wear a SCBA (Self contained breathing apparatus)
- 3) Always use the "buddy system"
- 4) Isolate the well/problem if possible.
- 5) Account for all personnel
- 6) Display the proper colors warning all unsuspecting personnel of the danger at hand.
- 7) Contact the Company personnel as soon as possible if not at the location.  
(use the enclosed call list as instructed)

At this point the company representative will evaluate the situation and co-ordinate the necessary duties to bring the situation under control, and if necessary, the notification of emergency response agencies and residents.

#### EMERGENCY PROCEDURES FOR AN UNCONTROLLABLE RELEASE OF H2S

- 1) All personnel will don the self-contained breathing apparatus.
- 2) Remove all personnel to the "safe area" (always use the "buddy system")
- 3) Contact company personnel if not on location.
- 4) Set in motion the steps to protect and or remove the general public to an upwind "safe area". Maintain strict security & safety procedures while dealing with the source.
- 5) No entry to any unauthorized personnel.
- 6) Notify the appropriate agencies: City Police-City street(s)  
State Police-State Rd,  
County Sheriff-County Rd.  
(will assist in general public evacuation/safety while maintaining roadblocks)
- 7) Call the NMOCD & or BLM

If at this time the supervising person determines the release of H2S cannot be contained to the site location and the general public is in harms way he will take necessary steps to contact the following:

EMERGENCY CALL LIST: (Start and continue until ONE of these people have been reached)

	<u>OFFICE</u>	<u>MOBILE</u>	<u>HOME</u>
WINSTON BALLARD	432-563-0031	575-513-9366	
CHRIS CHESSER	432-563-0035	575-405-9156	

EMERGENCY RESPONSE NUMBERS: Lea County, New Mexico

State Police	575-392-5588
Lea County Sheriff	575-396-3611
Emergency Medical Service (Ambulance)	911 or 575-393-2677
State Emergency Response Center (SERC)	575-476-9620
Hobbs Police Department	575-397-9265
Hobbs Fire Department	575-393-2677
Lovington Police Department	575-396-3144
Lovington Fire Department	575-396-2359
Loco Hills Fire Department	575-677-2349
Majamar Fire Department	575-676-4100
(NMOCD) New Mexico Oil Conservation Division, District I (Lea, Roosevelt, Chaves, Curry)	575-393-6161
District II (Eddy, Chaves)	575-748-1283
American Safety	575-746-1096
Indian Fire & Safety	575-746-4660 or 800-530-8693
Callaway Safety	575-746-2847
BJ Services	575-746-3569

### PROTECTION OF THE GENERAL PUBLIC/ROE:

In the event greater than 100 ppm H<sub>2</sub>S is present, the ROE (Radius Of Exposure) calculations will be done to determine if the following is warranted:

- 100 ppm at any public area (any place not associated with this site)
- 500 ppm at any public road (any road which the general public may travel)
- 100 ppm radius of 3000' will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H<sub>2</sub>S could be present in concentrations greater than 100 ppm in the gas mixture.

#### **Calculation for the 100 ppm ROE:**

$$X = [(1.589) (\text{concentration}) (Q)]^{(0.6258)}$$

#### **Calculation for the 500 ppm ROE:**

$$X = [(0.4546) (\text{concentration}) (Q)]^{(0.6258)}$$

EXAMPLE: If a well/facility has been determined to have 150 ppm H<sub>2</sub>S in the gas mixture and the well/facility is producing at a gas rate of 100 MCFPD then:

$$\begin{aligned} 100 \text{ PPM} \quad X &= [(1.589)(150/1,000,000)(100,000)]^{0.6258} \\ X &= 7' \end{aligned}$$

$$\begin{aligned} 500 \text{ PPM} \quad X &= [(0.4546)(150/1,000,000)(100,000)]^{0.6258} \\ X &= 3' \end{aligned}$$

(These calculations will be forwarded to the appropriate District NMOCD office when applicable)

#### PUBLIC EVACUATION PLAN:

(When the supervisor has determined that the General Public will be involved, the following plan will be implemented)

- 1) Notification of the emergency response agencies of the hazardous condition and implement evacuation procedures.
- 2) A trained person in H<sub>2</sub>S safety, shall monitor with detection equipment the H<sub>2</sub>S concentration, wind and area of exposure (ROE). This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. **(All monitoring equipment shall be UL approved, for use in class I groups A,B,C, & D, Division I, hazardous locations. All monitors will have a minimum capability of measuring H<sub>2</sub>S values.)**
- 3) Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.
- 4) The company supervising personnel shall stay in communications with all agencies through out the duration of the situation and inform such agencies when the situation has been contained and the effected area(s) is safe to enter.

#### PROCEDURE FOR IGNITING AN UNCONTROLLABLE CONDITION:

The decision to ignite a well should be a last resort and one if not both of the following pertain.

- 1) Human life and/or property are in danger.
- 2) There is no hope of bringing the situation under control with the prevailing conditions at the site.

#### INSTRUCTIONS FOR IGNITION:

- 1) Two people are required. They must be equipped with positive pressure; self contained breathing apparatus and a "D" –ring style, full body, OSHA approved safety harness. Non-flammable rope will be attached.
- 2) One of the people will be a qualified safety person who will test the atmosphere for H<sub>2</sub>S, Oxygen, & LFL. The other person will be the company supervisor; he is responsible for igniting the well.
- 3) Ignite up-wind from a distance no closer than necessary. Make sure that where you ignite from has the maximum escape avenue available. A 25mm flare gun shall be used, with a  $\pm 500'$  range to ignite the gas.
- 4) Prior to ignition, make a final check for combustible gases.
- 5) Following ignition, continue with the emergency actions & procedures as before.

#### REQUIRED EMERGENCY EQUIPMENT:

- 1) Breathing Apparatus:
  - Rescue Packs (SCBA) – 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
  - Work/Escape Packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
  - Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation.
- 2) Signage & Flagging:
  - One Color Code Condition Sign will be placed at the entrance to the site reflecting the possible conditions at the site.
  - A Colored Condition flag will be on display, reflecting the condition at the site at that time.
- 3) Briefing Area: Two, perpendicular areas will be designated by signs and readily accessible.

- 4) Wind Socks: Two windsocks will be placed in strategic locations, visible from all angles.
- 5) H2S Detectors and Alarm: The stationary detector with three (3) sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 15 ppm. Calibrate a minimum of every 30 days or as needed. The 3 sensors will be placed in the following places: (Gas sample tubes will be stored in the safety trailer)
  - Rig Floor
  - Bell Nipple
  - End of Flow line or where well bore fluid are being discharged.
- 6) Auxiliary Rescue Equipment:
  - Stretcher
  - Two OSHA full body harness
  - 100' of 5/8" OSHA approved rope
  - 1 – 20# Class ABC fire extinguisher
  - Communication via cell phones on location and vehicles on location.

#### USING SELF-CONTAINED BREATHING AIR EQUIPMENT (SCBA):

SCBA should be worn when any of the following are performed:

- Working near the top or on top of a tank.
- Disconnecting any line where H2S can reasonably be expected.
- Sampling air in the area to determine if toxic concentrations of H2S exist.
- Working in areas where over 10 ppm on H2S has been detected.
- At any time there is a doubt as the level of H2S in the area.

All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.

Facial hair and standard eyeglasses are not allowed with SCBA.

Contact lenses are never allowed with SCBA.

Air quality shall continuously be checked during the entire operation.

After each use, the SCBA unit shall be cleaned, disinfected, serviced and inspected.

All SCBA shall be inspected monthly.

## RESCUE & FIRST AID FOR VICTIMS OF HYDROGEN SULFIDE (H<sub>2</sub>S) POISONING

Do not panic.

Remain calm & think.

Get on the breathing apparatus.

Remove the victim to the safe breathing area as quickly as possible. Upwind an uphill from source of cross wind to achieve upwind.

Notify emergency response personnel.

Provide artificial respiration and/or CPR, as necessary.

Remove all contaminated clothing to avoid further exposure.

A minimum of two (2) personnel on location shall be trained in CPR and First Aid.

### H2S TOXIC EFFECTS:

H2S is extremely toxic. The acceptable ceiling for eight hours of exposure is 10 ppm, which is .001% by volume. H2S is approximately 20% heavier than air (Sp.Gr=1.19 / Air=1 ) and colorless. It forms an explosive mixture with air between 4.3% and 46.0%. By volume hydrogen sulfide (H2S) is almost as toxic as hydrogen cyanide and is 5-6 times more toxic than carbon monoxide.

#### Various Gases

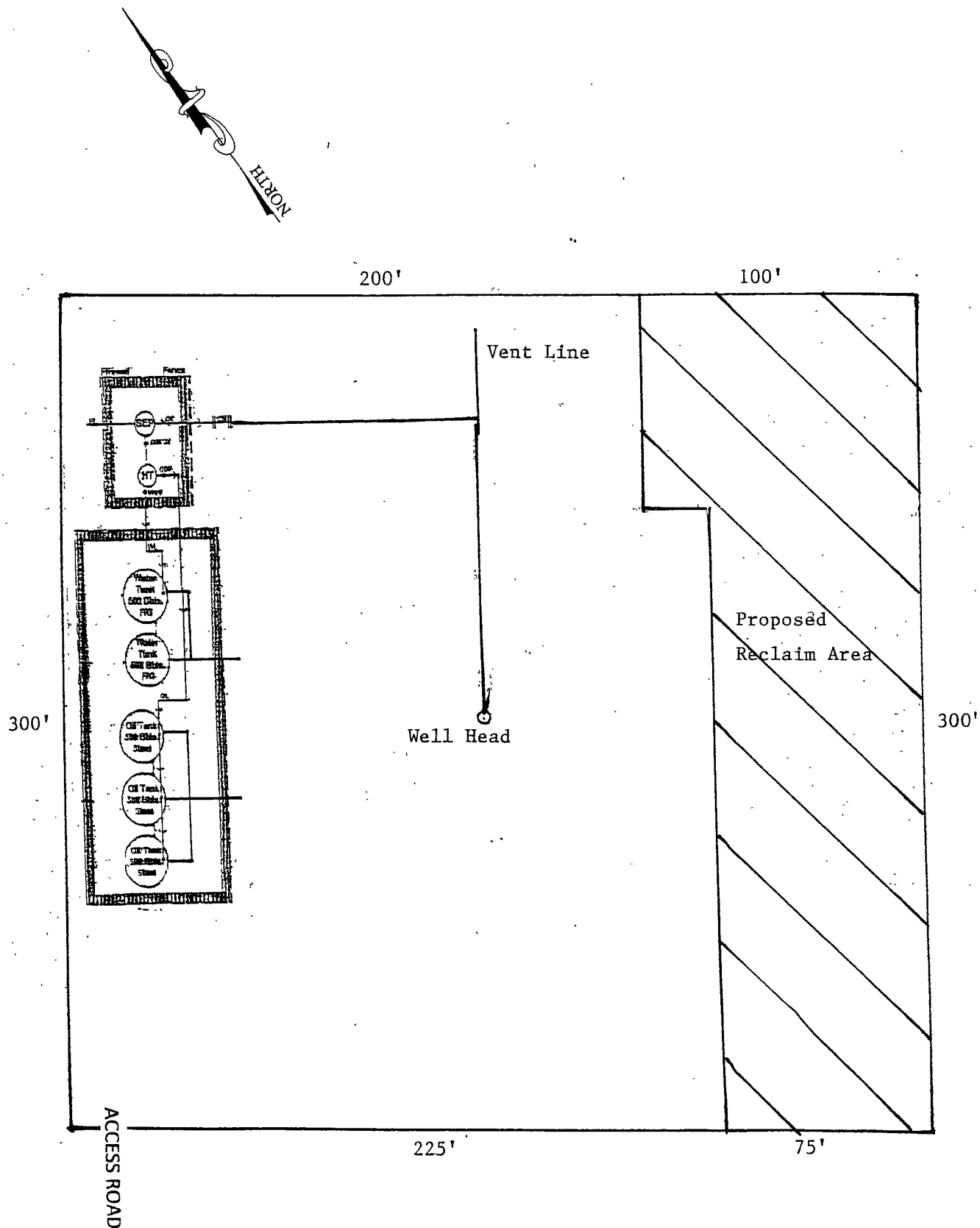
Common Name	Chemical Abbrev.	Sp. Gr.	Threshold Limits	Hazardous Limits	Lethal Concentration
Hydrogen Sulfide	H2S	1.19	10 ppm 15 ppm	100 ppm/hr	600 ppm
Hydrogen Cyanide	HCN	0.94	10 ppm	150 ppm/hr	300 ppm
Sulfur Dioxide	SO2	2.21	2 ppm	N/A	1000 ppm
Chlorine	CL2	2.45	1 ppm	4 ppm/hr	1000 ppm
Carbon Monoxide	CO	0.97	50 ppm	400 ppm/hr	1000 ppm
Carbon Dioxide	CO2	1.52	5000 ppm	5%	10%
Methane	CH4	0.55	90,000	Combustible @ 5%	N/A

1. Threshold limit – Concentrations at which it is believed that all workers may be repeatedly exposed, day after day without adverse effects.
2. Hazardous limit – Concentration that may cause death.
3. Lethal concentration – Concentration that will cause death with short-term exposure.
4. Threshold limit – 10 ppm – NIOSH guide to chemical hazards.
5. Short-term threshold limit.

### PHYSICAL EFFECTS OF HYDROGEN SULFIDE:

CONCENTRATIONS		PHYSICAL EFFECTS
.001%	10 ppm	Obvious and unpleasant odor. Safe for 8 hr. exposure
.005%	50 ppm	Can cause some flu-like symptoms and can cause pneumonia.
.01%	100 ppm	Kills the sense of smell in 3-15 minutes. May irritate eyes and throat.
.02%	200 ppm	Kills the sense of smell rapidly. Severely irritates eyes and throat. Severe flu-like symptoms after 4 or more hours. May cause lung damage and/or death.
.06%	600 ppm	Loss of consciousness quickly, death will result if not rescued promptly.





PLAT OF PROPOSED RECLAIMED AREA

THREE RIVERS OPERATING COMPANY, LLC.  
 NILE "34" FEDERAL # 2H  
 UNIT "E" SECTION 34  
 T17S-R#0E EDDY CO. NM

**PECOS DISTRICT  
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Three Rivers Operating Co
LEASE NO.:	NM-0558581
WELL NAME & NO.:	Nile 34 Federal #2H
SURFACE HOLE FOOTAGE:	1840' FNL & 330 FWL
BOTTOM HOLE FOOTAGE:	2310' FNL & 330' FEL
LOCATION:	Section 34, T.17 S., R.30 E., NMPM
COUNTY:	Eddy County, New Mexico

**TABLE OF CONTENTS**

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.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Berm
  - Lesser Prairie-Chicken Timing Stipulations
  - Ground-level Abandoned Well Marker
  - Communitization Agreement
- ☐ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
  - Logging Requirements
  - Waste Material and Fluids
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
  - Electric Lines
- ☒ **Interim Reclamation**
- ☒ **Final Abandonment & Reclamation**

## **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)

### Berm

**Berm northwest side of well pad to prevent water from flowing across location**

### Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

**Ground-level Abandoned Well Marker to avoid raptor perching:** Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

### 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) 234-6235 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 4 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 the Carlsbad 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.

### **Crowning**

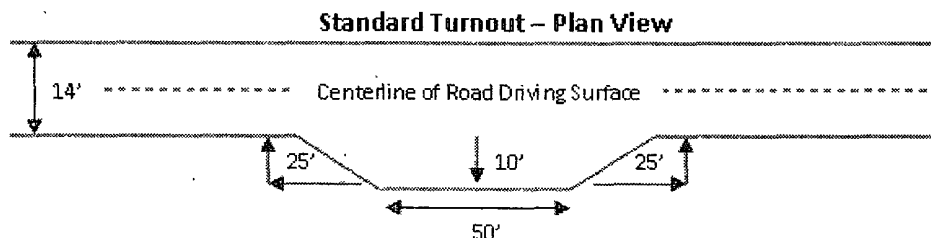
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

### **Ditching**

Ditching shall be required on both sides of the road.

### **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:

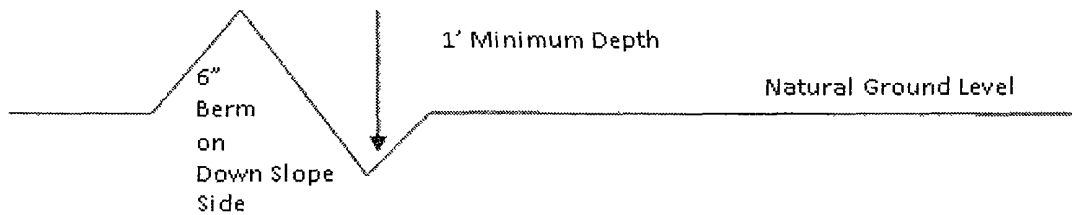


### **Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing 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:

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

#### **Culvert Installations**

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

#### **Cattleguards**

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

#### **Fence Requirement**

Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

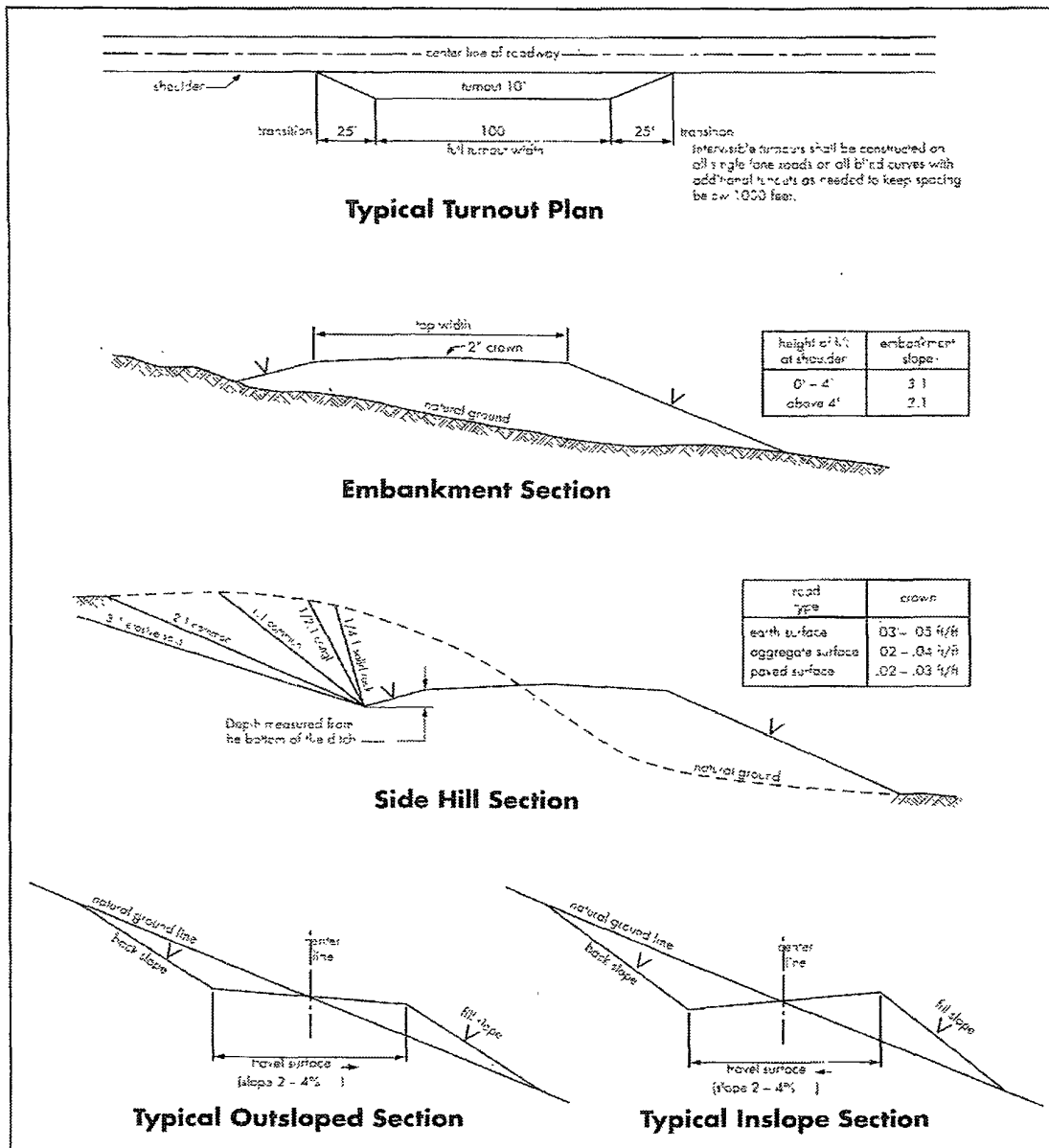
The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

#### **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. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan should be activated 500 feet prior to drilling into the Grayburg formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values 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. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

### B. CASING

**Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.**

**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.**

**Possible water flows in the Salado and Artesia groups.**

**There exists the possibility of lost circulation in the Grayburg and San Andres formations.**

1. The 13-3/8 inch surface casing shall be set at approximately 365 feet (in a competent bed below the Magenta Dolomite, a Member of the Rustler, and if salt is encountered, set casing at least 25 feet above the salt) 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.

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.

The pilot hole plugging procedure is approved as written. Cement volume is inadequate for 8-3/4" hole.

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

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

☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. Additional cement may be required – excess calculates to -21%.

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 **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.**
3. 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).
- a. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.
- b. The results of the test shall be reported to the appropriate BLM office.
- c. 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.**
- d. 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.
- e. **BOP/BOPE must be tested by an independent service company at 30 day intervals.**

#### **D. DRILL STEM TEST**

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

#### **E. 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 120811**

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).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

## Seed Mixture for LPC Sand/Shinnery 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:

<u>Species</u>	<u>lb/acre</u>
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

\*Pounds of pure live seed:

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