R-111-POTASH

14-591

Form 3160-3
(March 2012)

WIPP

OCD Artesia

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NMNM-89051(BHL) JES 8-6-2014

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. Apache 24 Fed 13H <33029>

2. Name of Operator Devon Energy Production Company, L.P. <6137>

9. API Well No. 30-015-42552

3a. Address 333 W. Sheridan, Oklahoma City, OK 73102

3b. Phone No. *(include area code)* 405.235.3611

10. Field and Pool, or Exploratory Los Medanos; Bone Spring (40295)

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

At surface 970 FSL & 330 FEL, P PP: 1050 FSL & 330 FWL

At proposed prod. zone 1980 FSL & 330 FWL, L

11. Sec., T. R. M. or Blk. and Survey or Area Sec 24, T22S R30E

14. Distance in miles and direction from nearest town or post office* 23 Miles East of Carlsbad, NM

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) See attached map

16. No. of acres in lease NMNM-89051: 1040 ac

17. Spacing Unit dedicated to this well 160 ac

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. See attached map

19. Proposed Depth 11009' TVD 15766' MD

20. BLM/BIA Bond No. on file CO-1104; NBM-000801

21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3408.9

22. Approximate date work will start* 06/21/2014

23. Estimated duration 45 Days

24. Attachments To be pad drilled w/Apache 24 Fed 12H

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)* Ryan DeLong — Date 02/24/2014

Title Regulatory Coordinator

Approved by *(Signature)* /s/George MacDonell — Name *(Printed/Typed)* — Date JUL 30 2014

Title FIELD MANAGER — Office CARLSBAD FIELD OFFICE

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

APPROVAL FOR TWO YEARS

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

(Continued on page 2)

*(Instructions on page 2)

NM OIL CONSERVATION
ARTESIA DISTRICT
AUG 04 2014
RECEIVED

Carlsbad Controlled Water Basin

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or Devon Energy Production Company, L.P. am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

I hereby also certify that I, or Devon Energy Production Company, L.P. have made a good faith effort to provide the surface owner with a copy of the Surface Use Plan of Operations and any Conditions of Approval that are attached to the APD.

Executed this _24th__ day of __February, 2014.
Printed Name: Ryan DeLong
Signed Name: _____
Position Title: Regulatory Coordinator
Address: 333 W. Sheridan, OKC OK 73102
Telephone: (405)-552-6559

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015-42552	40295	Los Medanos; Bone Spring

[4] Property Code	[5] Property Name	[6] Well Number
33079	APACHE 24 FED	13H

[7] OGRID No.	[8] Operator Name	[9] Elevation
6137	DEVON ENERGY PRODUCTION COMPANY, L.P.	3408.9

[10] Surface Location

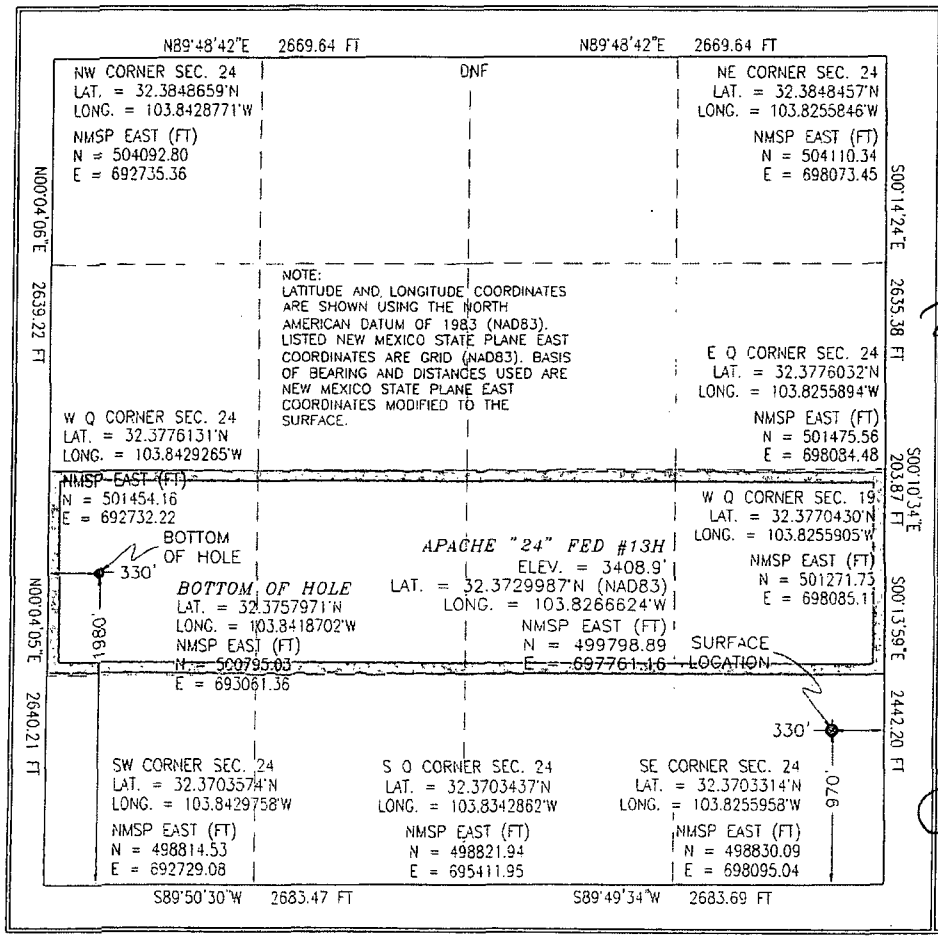
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	24	22 S	30 E		970	SOUTH	330	EAST	EDDY

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	24	22 S	30 E		1980	SOUTH	330	WEST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
160 ac			

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. PP: 1050 FSL & 330 FWL, Sec 24 T22S R30E



[17] OPERATOR CERTIFICATION

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

Signature — Date: 2/24/2014

Ryan DeLong - Regulatory Coordinator
Printed Name

ryan.delong@dvn.com
E-mail Address

[18] SURVEYOR CERTIFICATION

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

JANUARY 21, 2014
Date of Survey

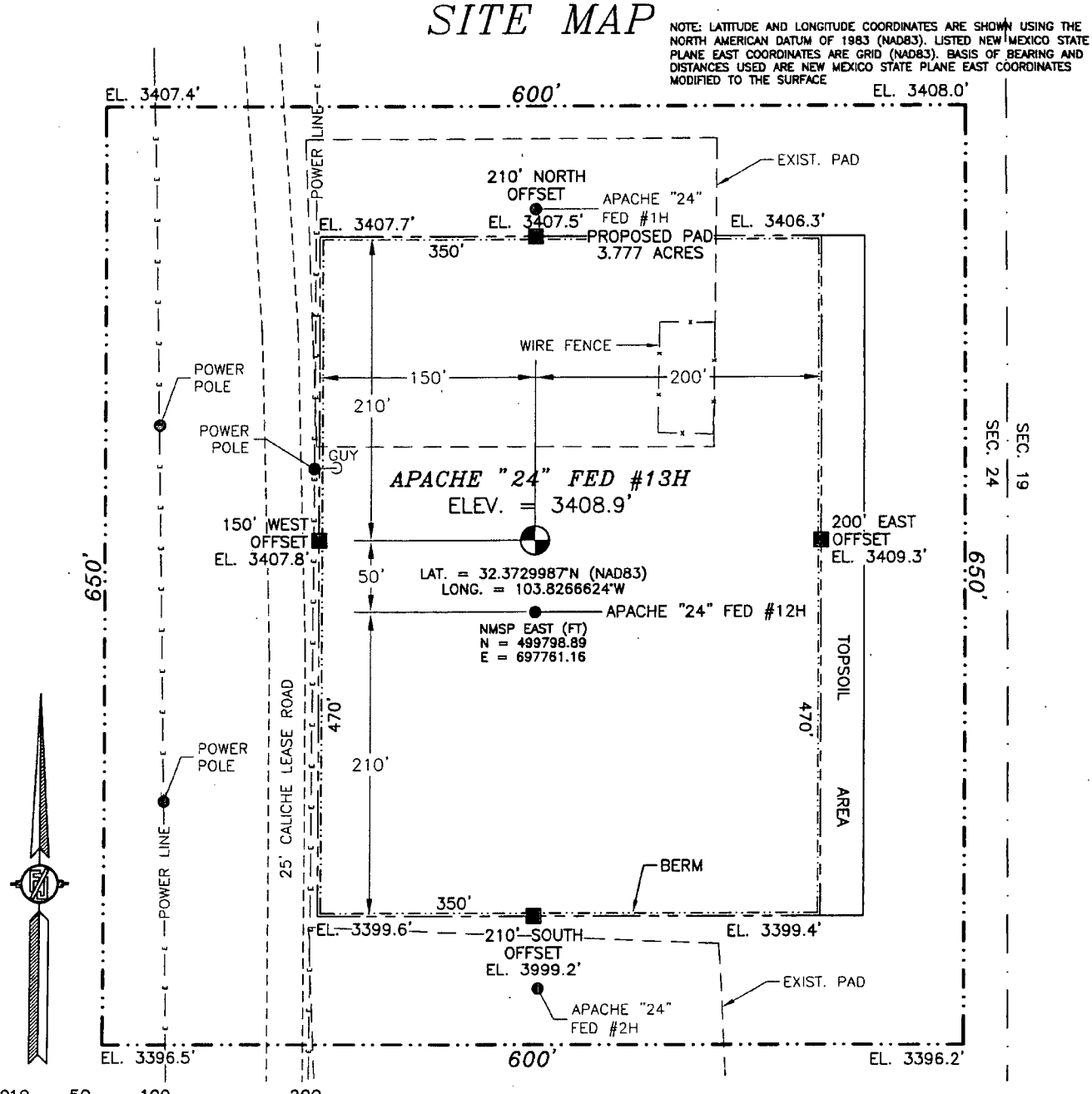
Signature and Seal of Professional Surveyor

Certificate Number FIDEL F. JARAMILLO, PLS 12797

SURVEY NO. 2400A

SECTION 24, TOWNSHIP 22 SOUTH, RANGE 30 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE



010 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF US 62-180 AND LOUIS WHITLOCK ROAD GO SOUTH ON LOUIS WHITLOCK ROAD 11.6 MILES, TURN RIGHT ON CALICHE LEASE ROAD GO WEST 1.8 MILES, TURN LEFT ON CALICHE LEASE ROAD GO SOUTH 0.35 MILES. SITE IS ABOUT 150' ON LEFT.

DEVON ENERGY PRODUCTION COMPANY, L.P.

APACHE "24" FED #13H

LOCATED 970 FT. FROM THE SOUTH LINE AND 330 FT. FROM THE EAST LINE OF SECTION 24, TOWNSHIP 22 SOUTH, RANGE 30 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

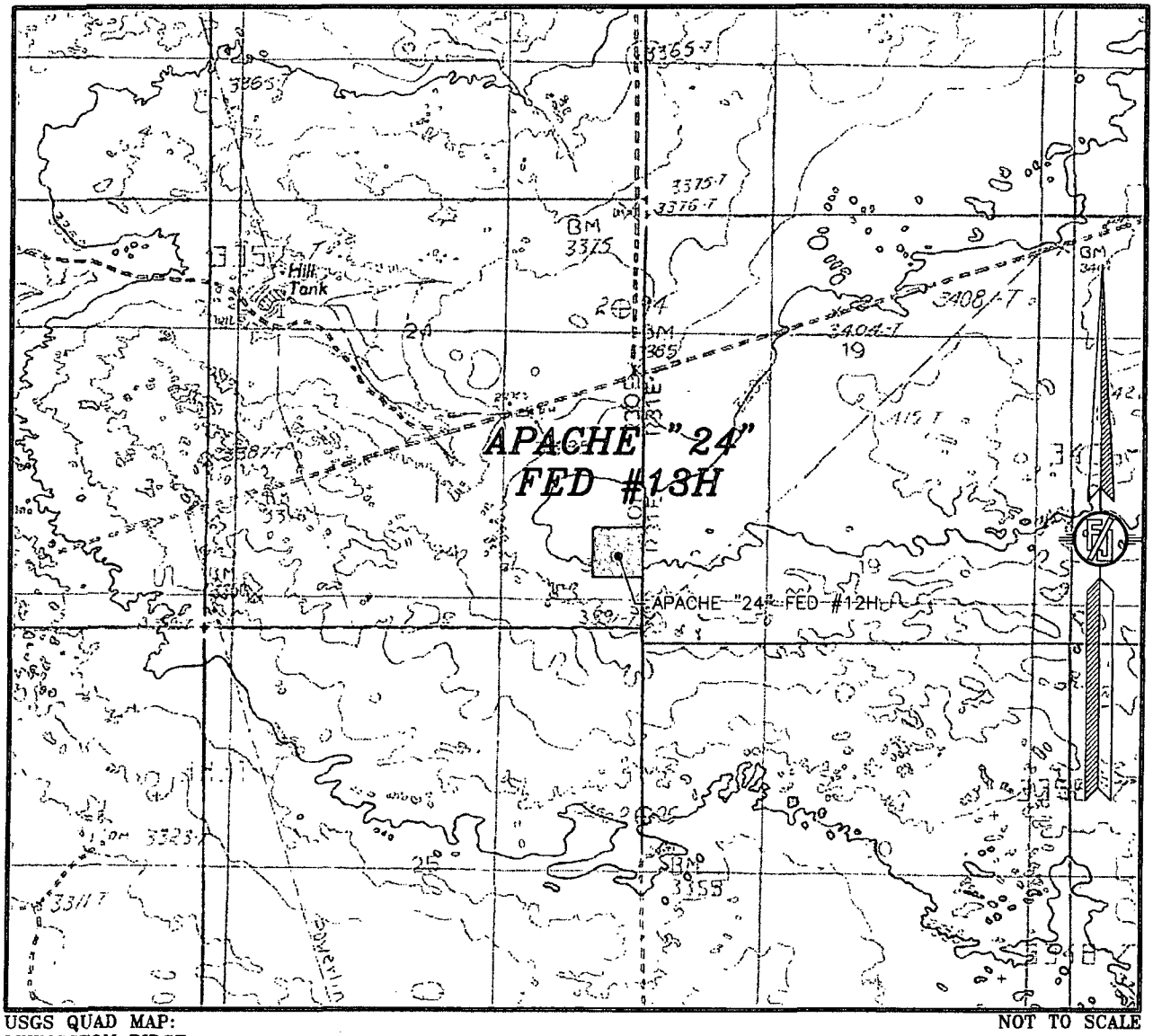
JANUARY 21, 2014

SURVEY NO. 2400A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

SECTION 24, TOWNSHIP 22 SOUTH, RANGE 30 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

LOCATION VERIFICATION MAP



USGS QUAD MAP:
LIVINGSTON RIDGE

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

APACHE "24" FED #13H

LOCATED 970 FT. FROM THE SOUTH LINE
AND 330 FT. FROM THE EAST LINE OF
SECTION 24, TOWNSHIP 22 SOUTH,
RANGE 30 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

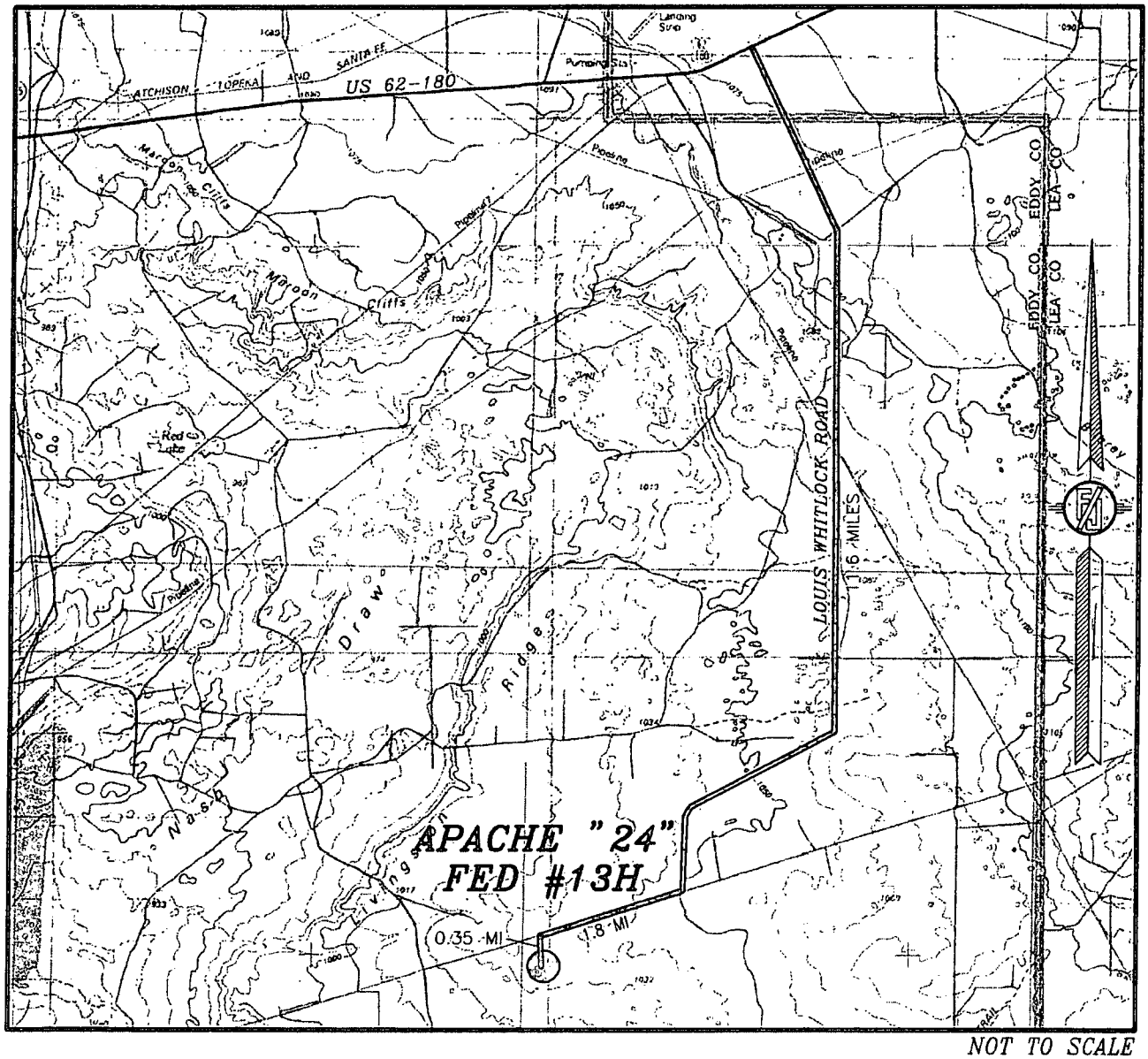
JANUARY 21, 2014

SURVEY NO. 2400A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 24, TOWNSHIP 22 SOUTH, RANGE 30 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

VICINITY MAP



NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.

APACHE "24" FED #13H

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SECTION 24, TOWNSHIP 22 SOUTH,
RANGE 30 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JANUARY 21, 2014

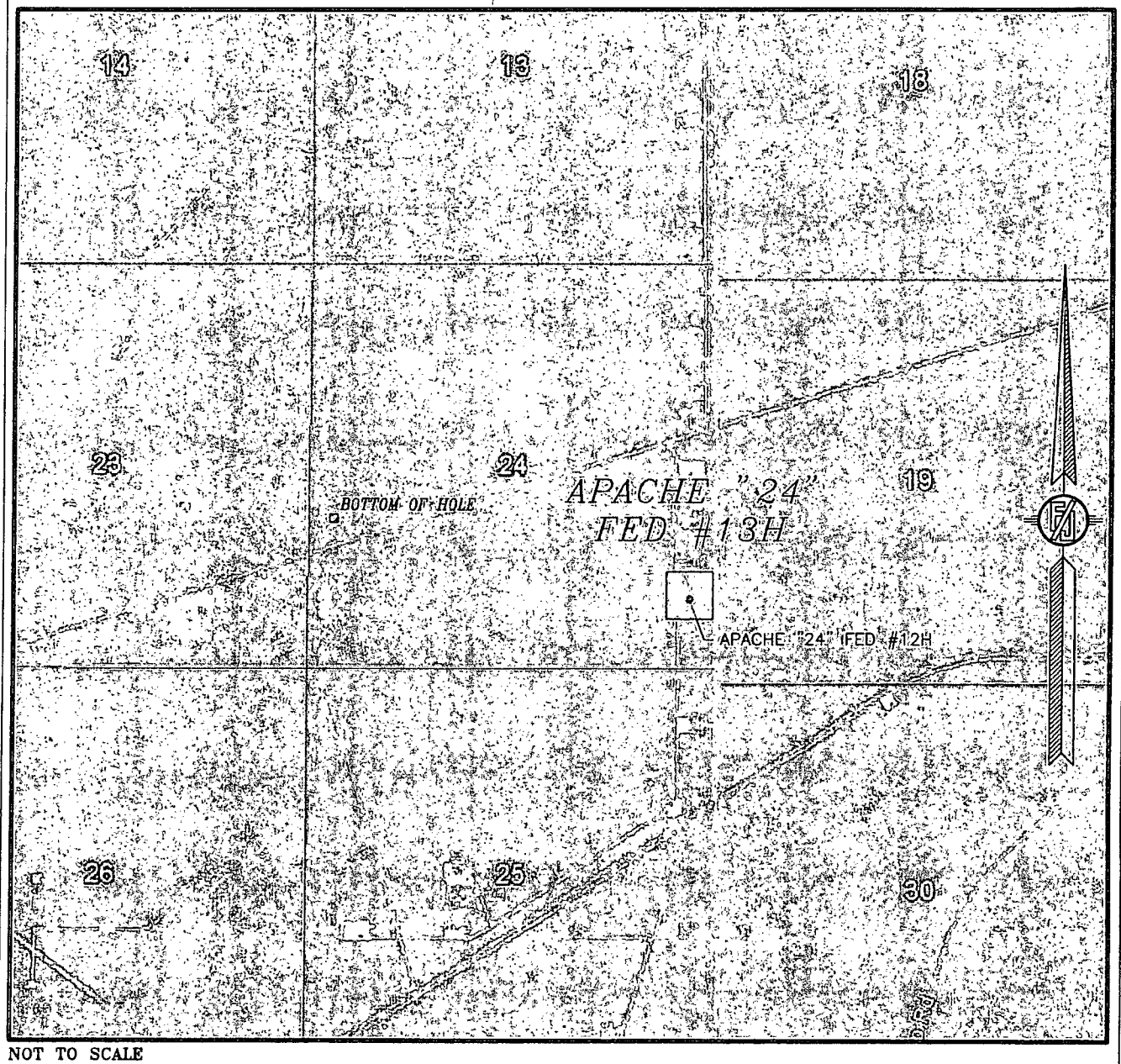
DIRECTIONS TO LOCATION
FROM THE INTERSECTION OF US 62-180 AND LOUIS WHITLOCK ROAD GO SOUTH ON LOUIS WHITLOCK ROAD 11.6 MILES, TURN RIGHT ON CALICHE LEASE ROAD GO WEST 1.8 MILES, TURN LEFT ON CALICHE LEASE ROAD GO SOUTH 0.35 MILES. SITE IS ABOUT 150' ON LEFT.

SURVEY NO. 2400A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 24, TOWNSHIP 22 SOUTH, RANGE 30 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
MARCH 2012

DEVON ENERGY PRODUCTION COMPANY, L.P.

APACHE "24" FED #13H

LOCATED 970 FT. FROM THE SOUTH LINE
AND 330 FT. FROM THE EAST LINE OF
SECTION 24, TOWNSHIP 22 SOUTH,
RANGE 30 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JANUARY 21, 2014

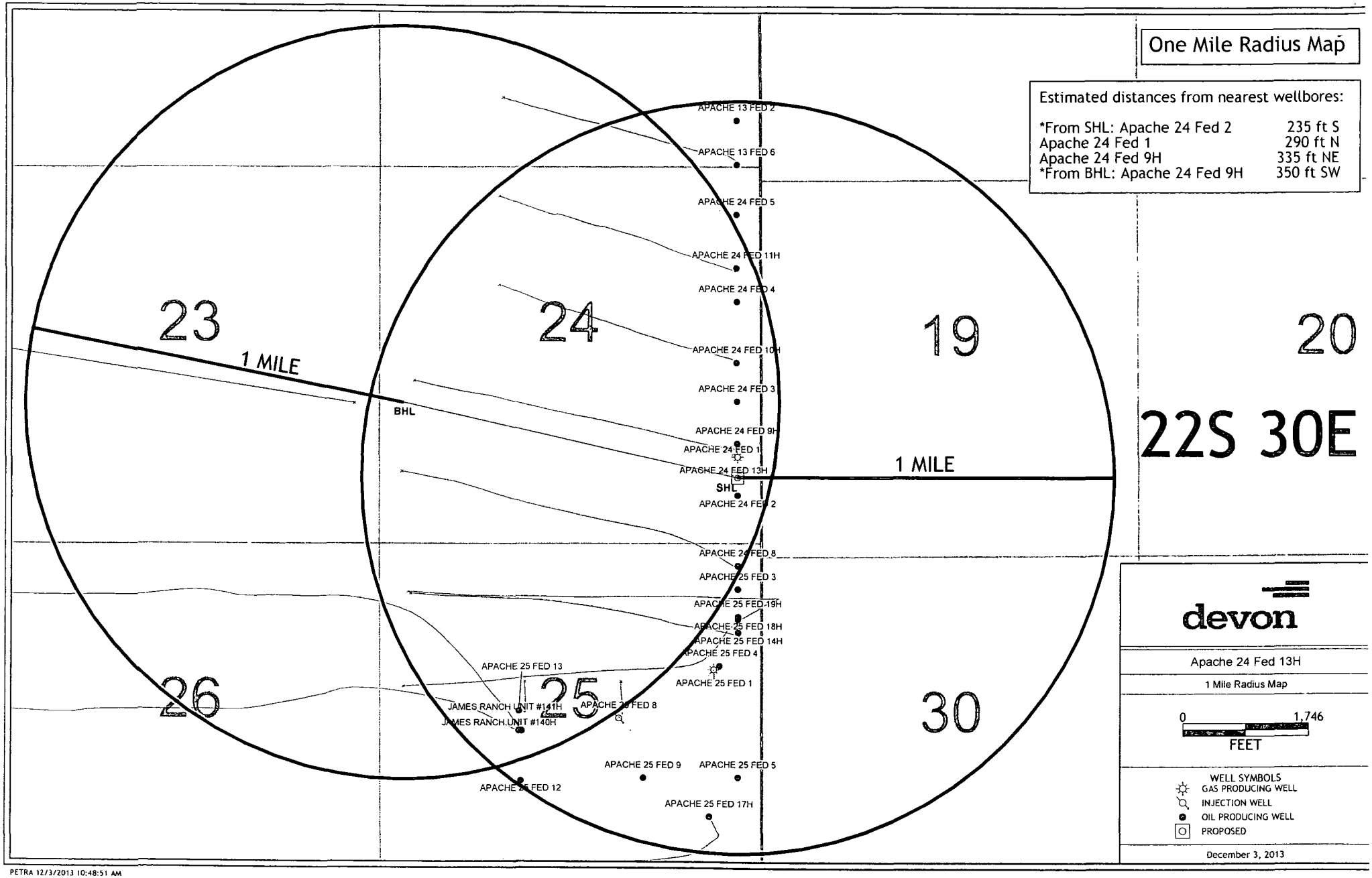
SURVEY NO. 2400A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

One Mile Radius Map

Estimated distances from nearest wellbores:

*From SHL: Apache 24 Fed 2	235 ft S
Apache 24 Fed 1	290 ft N
Apache 24 Fed 9H	335 ft NE
*From BHL: Apache 24 Fed 9H	350 ft SW



devon

Apache 24 Fed 13H

1 Mile Radius Map

0 1,746

FEET

WELL SYMBOLS
- GAS PRODUCING WELL
- INJECTION WELL
- OIL PRODUCING WELL
- PROPOSED

December 3, 2013

PETRA 12/3/2013 10:48:51 AM

DRILLING PROGRAM

Devon Energy Production Company, L.P.
Apache 24 Fed 13H

1. **Geologic Name of Surface Formation:** Quaternary

2. **Estimated Tops of Geological Markers & Depths of Anticipated FW, Oil, or Gas:**

a.	Fresh Water	200'	Fresh Water
b.	Rustler	493'	Barren
c.	Top of Salt/Salado	784'	Barren
d.	Castile	2580'	Barren
e.	Base of Salt/L. Castile	3654'	Barren
f.	Delaware	3912'	Oil/Gas
g.	Bell Canyon	3956'	Oil/Gas
h.	Cherry Canyon	4912'	Oil/Gas
i.	Brushy Canyon	6108'	Oil/Gas
j.	Bone Spring	7803'	Oil/gas
k.	First Bone Spring	8850'	Oil/Gas
l.	Second Bone Spring	9588'	Oil/Gas
m.	Third Bone Spring	10,596'	Oil/Gas
	Total Depth	10969' TVD	15766' MD

Apache 24 Fed 13H BOPE

3. Pressure Control Equipment:

A 5M 13-5/8" BOP system (Double Ram and Annular preventer) will be installed and tested prior to drilling out the surface casing shoe. The BOP system used to drill the intermediate hole will be tested per BLM Onshore Oil and Gas Order 2.

A 5M 13-5/8" BOP system (Double Ram and Annular preventer) will be installed and tested prior to drilling out the 1st and 2nd intermediate casing shoe. The BOP system used to drill the production hole will be tested per BLM Onshore Oil and Gas Order 2.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 5,000 psi WP. All BOPE will be tested to 5,000 psi.

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line); **if an H&P rig drills this well. Otherwise no flex line is needed**. The line will be kept as straight as possible with minimal turns.

See COA

Auxiliary Well Control and Monitoring Equipment:

a. A Kelly cock will be in the drill string at all times.
b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.

4. **Casing Program:**

See COA

Hole Size	Hole Interval	Casing OD	Casing Interval	Weight (lb/ft)	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17-1/2"	0-530' 580'	13-3/8"	0-530' 580'	48	ST&C	H-40	2.91	6.54	21.27
12-1/4"	530 - 3850'	9-5/8"	0 - 3850'	40	BTC	J-55	1.26	1.93	3.38
8-3/4"	3850 -11170'	7"	0-11170'	29	BTC	P-110	1.79	2.19	3.00
6-1/8"	11170-15766'	4-1/2"	10625-15766'	13.5	BTC	P-110	2.07	2.41	2.98

Casing Notes:

- All casing is new and API approved

Maximum Lateral TVD: 11,009'

5. **Proposed mud Circulations System:**

See COA

Depth	Mud Weight	Viscosity	Fluid Loss	Type System
0-530' 580'	8.3-9.6	30-34	N/C	FW
530-3850'	10-10.2	28-32	N/C	Brine
3850-11170'	8.4-9.0	28-32	N/C	FW
11075-15766'	9 -10	28-32	N/C	FW

The necessary mud products for weight addition and fluid loss control will be on location at all times. Visual mud monitoring equipment will be in place to detect volume changes indicating loss or gain of circulating fluid volume. If abnormal pressures are encountered, electronic/mechanical mud monitoring equipment will be installed.

6. Cementing Table:

String	Number of sx	Weight lbs/gal	Water Volume g/sx	Yield cf/sx	Stage; Lead/Tail	Slurry Description
13-3/8" Surface	590	14.8	6.32	1.33	Tail	Class C Cement + 63.5% Fresh Water
9-5/8" Intermediate #1	800	12.9	9.81	1.85	Lead	(65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 70.9 % Fresh Water
	430	14.8	6.32	1.33	Tail	Class C Cement + 63.5% Fresh Water
9-5/8" Intermediate #1 Two Stage Option	820	12.9	9.81	1.85	Lead	(65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 70.9 % Fresh Water
	220	14.8	6.32	1.33	Tail	Class C Cement + 63.5% Fresh Water
	DV Tool at ~~590ft~~ See COA					
	180	14.8	6.32	1.33	Tail	Class C Cement + 63.5% Fresh Water
7" Intermediate #2	400	11.0	14.94	2.66	Lead	Tuned Light Blend + 0.125 lb/sk Pol-E-Flake + 76.3% Fresh Water
	200	14.4	5.69	1.25	Tail	(50:50) Class H Cement: Poz (Fly Ash) + 0.3% bwoc HALAD-9 + 0.2% bwoc HR-800 + 1lb/sk KolSeal + 2% bwoc Bentonite + 62.3 % Fresh Water
	DV Tool @ 5450ft					
	330	11.0	14.94	2.66	Lead	Tuned Light Blend + 0.125 lb/sk Pol-E-Flake + 76.3% Fresh Water
	90	14.8	6.32	1.33	Tail	Class C Cement + 0.2% HR-800 + 63.5% Fresh Water
7" Intermediate #2 Single Stage Option	770	11.0	14.94	2.66	Lead	Tuned Light Blend + 0.125 lb/sk Pol-E-Flake + 76.3% Fresh Water
	200	14.4	5.69	1.25	Tail	(50:50) Class H Cement: Poz (Fly Ash) + 0.3% bwoc HALAD-9 + 0.2% bwoc HR-800 + 1lb/sk KolSeal + 2% bwoc Bentonite + 62.3 % Fresh Water
4-1/2" Production Liner	510	14.5	5.32	1.21	Tail	(50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.25% bwoc CFR-3 + 0.2% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water

See COA

See COA

TOC for all Strings:

13-3/8" Surface	0ft
9-5/8" Intermediate	0ft
9-5/8" Two Stage Option	Stage #1 = 590ft Stage #2 = 0ft
7" Intermediate Two Stage Option	Stage #1 = 5450ft Stage #2 = 0ft
7" Intermediate Single Stage Option	0ft
4-1/2" Production Liner	10,625ft -545' tie back into casing

Notes:

- Cement volumes Surface 100%, Intermediate #1 75% , Intermediate #2 50% and Production Liner based on at least 25% excess
- Actual cement volumes will be adjusted based on fluid caliper and caliper log data
- If lost circulation is encountered while drilling the production and/or the intermediate wellbores, a DV tool will be installed a minimum of 50' below the previous casing shoe and a minimum of 200' above the current shoe. If the DV tool has to be moved, the cement volumes will be adjusted proportionately. Both single and double stage proposals are listed in the cement table.

See COA

volumes will be adjusted proportionately. Both single and double stage proposals are listed in the cement table.

Logging, Coring, and Testing Program:

a. Drill stem tests will be based on geological sample shows.
b. If a drill stem test is anticipated, a procedure, equipment to be used, and safety measures will be provided via sundry notice to the BLM.
c. Resistivity and porosity logs are planned below the intermediate casing point. State logs run will be named in the Completion Report and submitted to the BLM.
d. No coring program is planned
e. Additional Testing will be initiated subsequent to setting the production casing. Specific intervals will be targeted based on log evaluation, geological sample shows, and drill stem tests.

Sec COA

7. Potential Hazards:

a. No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area, and none is anticipated to be encountered. If H2s 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 being used to drill this well. Estimated BHP: 5500 psi, and estimated BHT: 171 degrees.
b. Hydrogen Sulfide detection equipment will be in operation after drilling out the surface casing shoe until the production casing is cemented. Breathing equipment will be on location upon drilling the surface casing shoe until total depth is reached.

Sec COA

8. Anticipated Starting Date and Duration of Operations:

a. 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 operations and drilling is expected to take 32 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

DEVON ENERGY

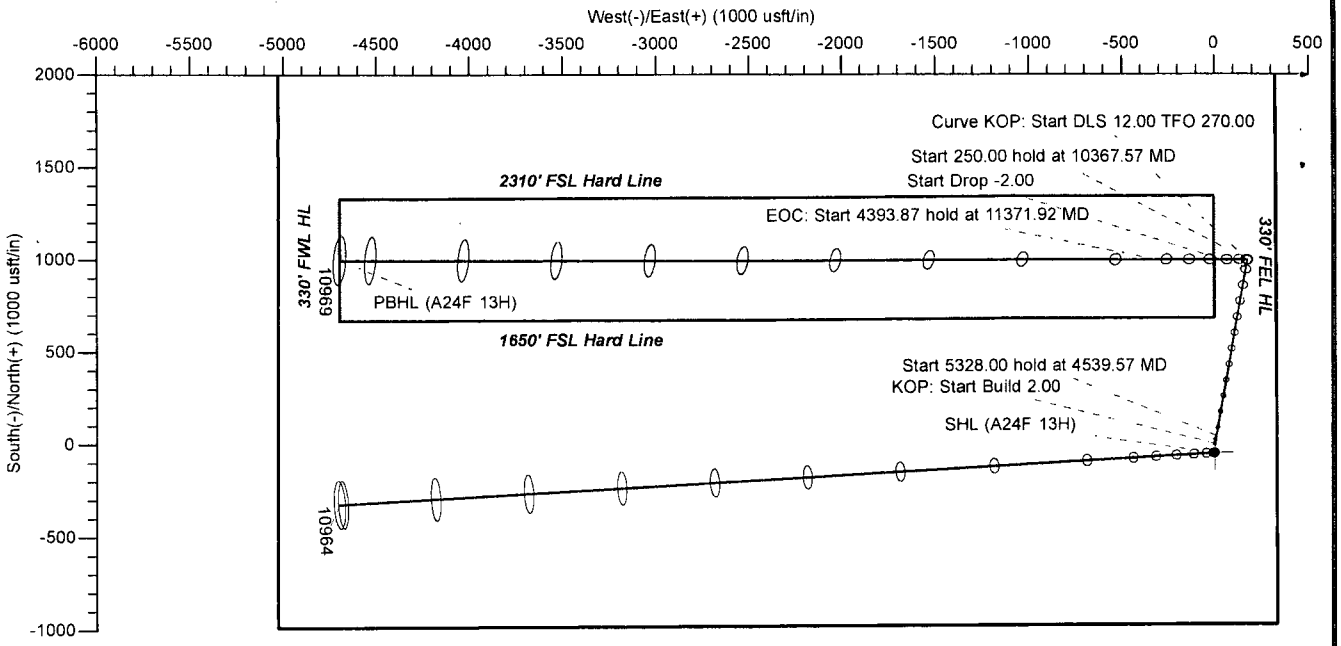
Project: Eddy County, NM (NAD-83)
Site: Apache 24 Fed
Well: 13H
Wellbore: OH
Design: Plan #1 Draft 1

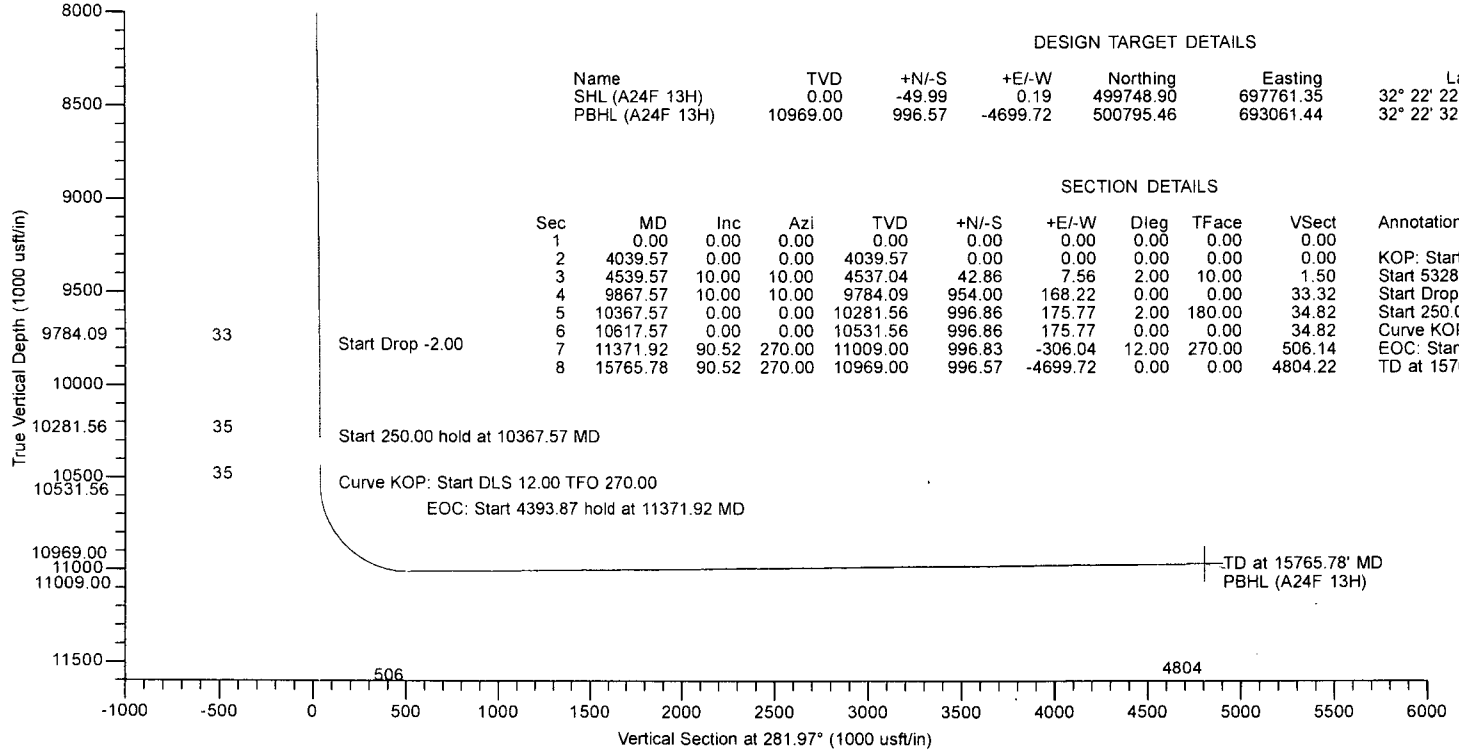
devon

Azimuths to Grid North
True North: -0.27°
Magnetic North: 7.23°

Magnetic Field
Strength: 48391.2snT
Dip Angle: 60.20°
Date: 02/11/2014
Model: BGGM2013

PROJECT DETAILS: Eddy County, NM (NAD-83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone





DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL (A24F 13H)	0.00	-49.99	0.19	499748.90	697761.35	32° 22' 22.301 N	103° 49' 35.985 W
PBHL (A24F 13H)	10969.00	996.57	-4699.72	500795.46	693061.44	32° 22' 32.874 N	103° 50' 30.732 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	4039.57	0.00	0.00	4039.57	0.00	0.00	0.00	0.00	0.00	KOP: Start Build 2.00
3	4539.57	10.00	10.00	4537.04	42.86	7.56	2.00	10.00	1.50	Start 5328.00 hold at 4539.57 MD
4	9867.57	10.00	10.00	9784.09	954.00	168.22	0.00	0.00	33.32	Start Drop -2.00
5	10367.57	0.00	0.00	10281.56	996.86	175.77	2.00	180.00	34.82	Start 250.00 hold at 10367.57 MD
6	10617.57	0.00	0.00	10531.56	996.86	175.77	0.00	0.00	34.82	Curve KOP: Start DLS 12.00 TFO 270.00
7	11371.92	90.52	270.00	11009.00	996.83	-306.04	12.00	270.00	506.14	EOC: Start 4393.87 hold at 11371.92 MD
8	15765.78	90.52	270.00	10969.00	996.57	-4699.72	0.00	0.00	4804.22	TD at 15765.78' MD

LEAM Drilling Systems LLC

LEAM DRILLING SYSTEMS LLC
2010 East Davis, Conroe, Texas 77301
Phone: 936/756-7577, Fax 936/756-7595

Plan: Plan #1 Draft 1 (13H/OH)
Apache 24 Fed
Created By: Heber Claros Date: 15:30, February 11 2014
Date: _____
Approved: _____ Date: _____

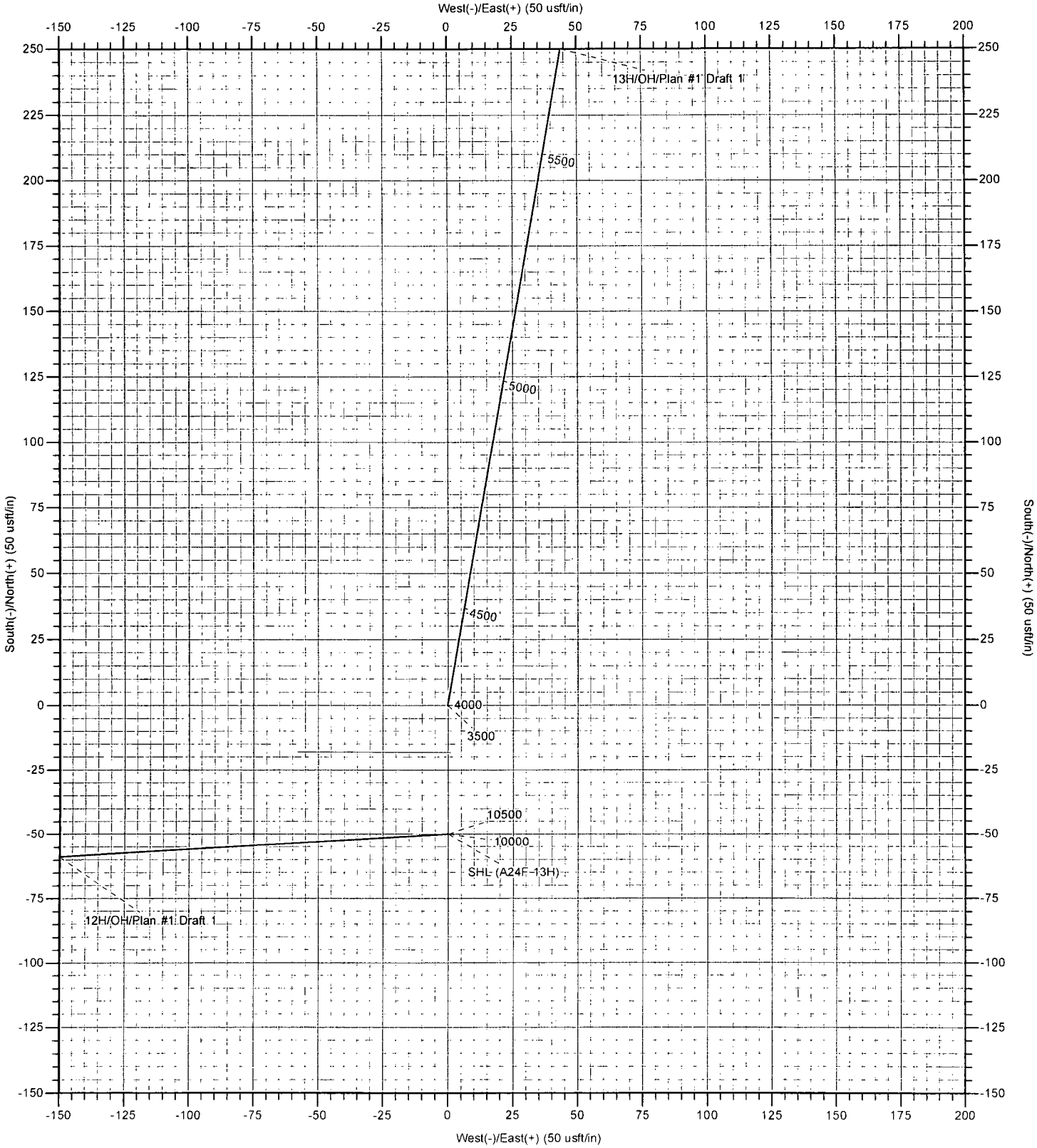
DEVON ENERGY

Project: Eddy County, NM (NAD-83)
Site: Apache 24 Fed
Well: 13H
Wellbore: OH
Design: Plan #1 Draft 1

Azimuths to Grid North
True North: -0.27°
Magnetic North: 7.23°

Magnetic Field
Strength: 48391.2snT
Dip Angle: 60.20°
Date: 02/11/2014
Model: BGGM2013

devon



LEAM Drilling Systems LLC

LEAM DRILLING SYSTEMS LLC
2010 East Davis, Conroe, Texas 77301
Phone: 936/756-7577, Fax 936/756-7595

Plan: Plan #1 Draft 1 (13H/OH)
Apache 24 Fed
Created By: Heber Claros Date: 15:25, February 11 2014
Date: _____
Approved: _____ Date: _____

DEVON ENERGY

Eddy County, NM (NAD-83)
Apache 24 Fed
13H

OH

Plan: Plan #1 Draft 1

Standard Planning Report

11 February, 2014

Leam Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well 13H
Company:	DEVON ENERGY	**TVD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Project:	Eddy County, NM (NAD-83)	**MD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Site:	Apache 24 Fed	**North Reference:**	Grid
Well:	13H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 Draft 1		

Project Eddy County, NM (NAD-83)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Apache 24 Fed

Site Position:		**Northing:**	499,748.90 usft	**Latitude:**	32° 22' 22.301 N
From:	Map	**Easting:**	697,761.35 usft	**Longitude:**	103° 49' 35.985 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.27 °

Well 13H

Well Position	**+N/-S**	49.99 usft	**Northing:**	499,798.89 usft	**Latitude:**	32° 22' 22.795 N
	+E/-W	-0.19 usft	**Easting:**	697,761.16 usft	**Longitude:**	103° 49' 35.985 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	3,407.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	02/11/14	7.50	60.20	48,391

Design Plan #1 Draft 1

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	281.97

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,039.57	0.00	0.00	4,039.57	0.00	0.00	0.00	0.00	0.00	0.00	
4,539.57	10.00	10.00	4,537.04	42.86	7.56	2.00	2.00	0.00	10.00	
9,867.57	10.00	10.00	9,784.09	954.00	168.22	0.00	0.00	0.00	0.00	
10,367.57	0.00	0.00	10,281.56	996.86	175.77	2.00	-2.00	0.00	180.00	
10,617.57	0.00	0.00	10,531.56	996.86	175.77	0.00	0.00	0.00	0.00	
11,371.92	90.52	270.00	11,009.00	996.83	-306.04	12.00	12.00	-11.93	270.00	
15,765.79	90.52	270.00	10,969.00	996.57	-4,699.72	0.00	0.00	0.00	0.00	PBHL (A24F 13H)

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well 13H
Company:	DEVON ENERGY	**TVD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Project:	Eddy County, NM (NAD-83)	**MD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Site:	Apache 24 Fed	**North Reference:**	Grid
Well:	13H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 Draft 1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,039.57	0.00	0.00	4,039.57	0.00	0.00	0.00	0.00	0.00	0.00
KOP: Start Build 2.00									
4,100.00	1.21	10.00	4,100.00	0.63	0.11	0.02	2.00	2.00	0.00
4,200.00	3.21	10.00	4,199.92	4.42	0.78	0.15	2.00	2.00	0.00
4,300.00	5.21	10.00	4,299.64	11.65	2.05	0.41	2.00	2.00	0.00
4,400.00	7.21	10.00	4,399.05	22.30	3.93	0.78	2.00	2.00	0.00
4,500.00	9.21	10.00	4,498.02	36.36	6.41	1.27	2.00	2.00	0.00
4,539.57	10.00	10.00	4,537.04	42.86	7.56	1.50	2.00	2.00	0.00
Start 5328.00 hold at 4539.57 MD									
4,600.00	10.00	10.00	4,596.55	53.20	9.38	1.86	0.00	0.00	0.00
4,700.00	10.00	10.00	4,695.03	70.30	12.40	2.46	0.00	0.00	0.00
4,800.00	10.00	10.00	4,793.51	87.40	15.41	3.05	0.00	0.00	0.00
4,900.00	10.00	10.00	4,891.99	104.50	18.43	3.65	0.00	0.00	0.00
5,000.00	10.00	10.00	4,990.47	121.60	21.44	4.25	0.00	0.00	0.00
5,100.00	10.00	10.00	5,088.95	138.70	24.46	4.84	0.00	0.00	0.00
5,200.00	10.00	10.00	5,187.43	155.80	27.47	5.44	0.00	0.00	0.00
5,300.00	10.00	10.00	5,285.91	172.90	30.49	6.04	0.00	0.00	0.00
5,400.00	10.00	10.00	5,384.39	190.00	33.50	6.64	0.00	0.00	0.00
5,500.00	10.00	10.00	5,482.87	207.10	36.52	7.23	0.00	0.00	0.00
5,600.00	10.00	10.00	5,581.36	224.21	39.53	7.83	0.00	0.00	0.00
5,700.00	10.00	10.00	5,679.84	241.31	42.55	8.43	0.00	0.00	0.00
5,800.00	10.00	10.00	5,778.32	258.41	45.56	9.02	0.00	0.00	0.00
5,900.00	10.00	10.00	5,876.80	275.51	48.58	9.62	0.00	0.00	0.00
6,000.00	10.00	10.00	5,975.28	292.61	51.59	10.22	0.00	0.00	0.00
6,100.00	10.00	10.00	6,073.76	309.71	54.61	10.82	0.00	0.00	0.00
6,200.00	10.00	10.00	6,172.24	326.81	57.63	11.41	0.00	0.00	0.00
6,300.00	10.00	10.00	6,270.72	343.91	60.64	12.01	0.00	0.00	0.00
6,400.00	10.00	10.00	6,369.20	361.01	63.66	12.61	0.00	0.00	0.00
6,500.00	10.00	10.00	6,467.68	378.11	66.67	13.21	0.00	0.00	0.00
6,600.00	10.00	10.00	6,566.16	395.22	69.69	13.80	0.00	0.00	0.00
6,700.00	10.00	10.00	6,664.64	412.32	72.70	14.40	0.00	0.00	0.00
6,800.00	10.00	10.00	6,763.12	429.42	75.72	15.00	0.00	0.00	0.00
6,900.00	10.00	10.00	6,861.61	446.52	78.73	15.59	0.00	0.00	0.00
7,000.00	10.00	10.00	6,960.09	463.62	81.75	16.19	0.00	0.00	0.00
7,100.00	10.00	10.00	7,058.57	480.72	84.76	16.79	0.00	0.00	0.00
7,200.00	10.00	10.00	7,157.05	497.82	87.78	17.39	0.00	0.00	0.00
7,300.00	10.00	10.00	7,255.53	514.92	90.79	17.98	0.00	0.00	0.00
7,400.00	10.00	10.00	7,354.01	532.02	93.81	18.58	0.00	0.00	0.00
7,500.00	10.00	10.00	7,452.49	549.12	96.83	19.18	0.00	0.00	0.00
7,600.00	10.00	10.00	7,550.97	566.23	99.84	19.78	0.00	0.00	0.00
7,700.00	10.00	10.00	7,649.45	583.33	102.86	20.37	0.00	0.00	0.00
7,800.00	10.00	10.00	7,747.93	600.43	105.87	20.97	0.00	0.00	0.00
7,900.00	10.00	10.00	7,846.41	617.53	108.89	21.57	0.00	0.00	0.00
8,000.00	10.00	10.00	7,944.89	634.63	111.90	22.16	0.00	0.00	0.00
8,100.00	10.00	10.00	8,043.37	651.73	114.92	22.76	0.00	0.00	0.00
8,200.00	10.00	10.00	8,141.86	668.83	117.93	23.36	0.00	0.00	0.00
8,300.00	10.00	10.00	8,240.34	685.93	120.95	23.96	0.00	0.00	0.00
8,400.00	10.00	10.00	8,338.82	-703.03	123.96	24.55	0.00	0.00	0.00
8,500.00	10.00	10.00	8,437.30	720.13	126.98	25.15	0.00	0.00	0.00
8,600.00	10.00	10.00	8,535.78	737.24	129.99	25.75	0.00	0.00	0.00
8,700.00	10.00	10.00	8,634.26	754.34	133.01	26.35	0.00	0.00	0.00
8,800.00	10.00	10.00	8,732.74	771.44	136.03	26.94	0.00	0.00	0.00
8,900.00	10.00	10.00	8,831.22	788.54	139.04	27.54	0.00	0.00	0.00
9,000.00	10.00	10.00	8,929.70	805.64	142.06	28.14	0.00	0.00	0.00

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Company:	DEVON ENERGY	**TVD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Project:	Eddy County, NM (NAD-83)	**MD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Site:	Apache 24 Fed	**North Reference:**	Grid
Well:	13H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 Draft 1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,100.00	10.00	10.00	9,028.18	822.74	145.07	28.73	0.00	0.00	0.00
9,200.00	10.00	10.00	9,126.66	839.84	148.09	29.33	0.00	0.00	0.00
9,300.00	10.00	10.00	9,225.14	856.94	151.10	29.93	0.00	0.00	0.00
9,400.00	10.00	10.00	9,323.62	874.04	154.12	30.53	0.00	0.00	0.00
9,500.00	10.00	10.00	9,422.11	891.14	157.13	31.12	0.00	0.00	0.00
9,600.00	10.00	10.00	9,520.59	908.25	160.15	31.72	0.00	0.00	0.00
9,700.00	10.00	10.00	9,619.07	925.35	163.16	32.32	0.00	0.00	0.00
9,800.00	10.00	10.00	9,717.55	942.45	166.18	32.91	0.00	0.00	0.00
9,867.57	10.00	10.00	9,784.09	954.00	168.22	33.32	0.00	0.00	0.00
Start Drop -2.00									
9,900.00	9.35	10.00	9,816.06	959.37	169.16	33.51	2.00	-2.00	0.00
10,000.00	7.35	10.00	9,914.99	973.67	171.68	34.01	2.00	-2.00	0.00
10,100.00	5.35	10.00	10,014.38	984.57	173.61	34.39	2.00	-2.00	0.00
10,200.00	3.35	10.00	10,114.08	992.04	174.92	34.65	2.00	-2.00	0.00
10,300.00	1.35	10.00	10,213.99	996.08	175.64	34.79	2.00	-2.00	0.00
10,367.57	0.00	0.00	10,281.56	996.86	175.77	34.82	2.00	-2.00	0.00
Start 250.00 hold at 10367.57 MD									
10,400.00	0.00	0.00	10,313.99	996.86	175.77	34.82	0.00	0.00	0.00
10,500.00	0.00	0.00	10,413.99	996.86	175.77	34.82	0.00	0.00	0.00
10,600.00	0.00	0.00	10,513.99	996.86	175.77	34.82	0.00	0.00	0.00
10,617.57	0.00	0.00	10,531.56	996.86	175.77	34.82	0.00	0.00	0.00
Curve KOP: Start DLS 12.00 TFO 270.00									
10,625.00	0.89	270.00	10,538.99	996.86	175.72	34.87	12.00	12.00	0.00
10,650.00	3.89	270.00	10,563.96	996.86	174.67	35.89	12.00	12.00	0.00
10,675.00	6.89	270.00	10,588.85	996.86	172.32	38.19	12.00	12.00	0.00
10,700.00	9.89	270.00	10,613.58	996.86	168.68	41.76	12.00	12.00	0.00
10,725.00	12.89	270.00	10,638.08	996.86	163.74	46.59	12.00	12.00	0.00
10,750.00	15.89	270.00	10,662.30	996.86	157.53	52.67	12.00	12.00	0.00
10,775.00	18.89	270.00	10,686.15	996.86	150.05	59.98	12.00	12.00	0.00
10,800.00	21.89	270.00	10,709.58	996.86	141.34	68.50	12.00	12.00	0.00
10,825.00	24.89	270.00	10,732.52	996.86	131.42	78.20	12.00	12.00	0.00
10,850.00	27.89	270.00	10,754.91	996.86	120.31	89.07	12.00	12.00	0.00
10,875.00	30.89	270.00	10,776.69	996.86	108.04	101.07	12.00	12.00	0.00
10,900.00	33.89	270.00	10,797.80	996.86	94.65	114.17	12.00	12.00	0.00
10,925.00	36.89	270.00	10,818.18	996.86	80.17	128.34	12.00	12.00	0.00
10,950.00	39.89	270.00	10,837.77	996.86	64.65	143.52	12.00	12.00	0.00
10,975.00	42.89	270.00	10,856.53	996.86	48.12	159.69	12.00	12.00	0.00
11,000.00	45.89	270.00	10,874.39	996.86	30.63	176.80	12.00	12.00	0.00
11,025.00	48.89	270.00	10,891.31	996.85	12.24	194.80	12.00	12.00	0.00
11,050.00	51.89	270.00	10,907.25	996.85	-7.02	213.63	12.00	12.00	0.00
11,075.00	54.89	270.00	10,922.15	996.85	-27.09	233.26	12.00	12.00	0.00
11,100.00	57.89	270.00	10,935.99	996.85	-47.91	253.63	12.00	12.00	0.00
11,125.00	60.89	270.00	10,948.72	996.85	-69.42	274.68	12.00	12.00	0.00
11,150.00	63.89	270.00	10,960.30	996.85	-91.57	296.34	12.00	12.00	0.00
11,175.00	66.89	270.00	10,970.71	996.85	-114.30	318.58	12.00	12.00	0.00
11,200.00	69.89	270.00	10,979.92	996.85	-137.54	341.31	12.00	12.00	0.00
11,225.00	72.89	270.00	10,987.89	996.84	-161.23	364.49	12.00	12.00	0.00
11,250.00	75.89	270.00	10,994.62	996.84	-185.31	388.04	12.00	12.00	0.00
11,275.00	78.89	270.00	11,000.08	996.84	-209.70	411.90	12.00	12.00	0.00
11,300.00	81.89	270.00	11,004.25	996.84	-234.35	436.01	12.00	12.00	0.00
11,325.00	84.89	270.00	11,007.13	996.84	-259.18	460.30	12.00	12.00	0.00
11,350.00	87.89	270.00	11,008.70	996.84	-284.12	484.71	12.00	12.00	0.00
11,371.92	90.52	270.00	11,009.00	996.83	-306.04	506.14	12.00	12.00	0.00

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Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
EOC: Start 4393.87 hold at 11371.92 MD									
11,400.00	90.52	270.00	11,008.75	996.83	-334.12	533.61	0.00	0.00	0.00
11,500.00	90.52	270.00	11,007.84	996.83	-434.12	631.43	0.00	0.00	0.00
11,600.00	90.52	270.00	11,006.93	996.82	-534.11	729.25	0.00	0.00	0.00
11,700.00	90.52	270.00	11,006.01	996.81	-634.11	827.07	0.00	0.00	0.00
11,800.00	90.52	270.00	11,005.10	996.81	-734.10	924.89	0.00	0.00	0.00
11,900.00	90.52	270.00	11,004.19	996.80	-834.10	1,022.71	0.00	0.00	0.00
12,000.00	90.52	270.00	11,003.28	996.80	-934.09	1,120.53	0.00	0.00	0.00
12,100.00	90.52	270.00	11,002.37	996.79	-1,034.09	1,218.35	0.00	0.00	0.00
12,200.00	90.52	270.00	11,001.46	996.78	-1,134.09	1,316.17	0.00	0.00	0.00
12,300.00	90.52	270.00	11,000.55	996.78	-1,234.08	1,413.99	0.00	0.00	0.00
12,400.00	90.52	270.00	10,999.64	996.77	-1,334.08	1,511.81	0.00	0.00	0.00
12,500.00	90.52	270.00	10,998.73	996.77	-1,434.07	1,609.63	0.00	0.00	0.00
12,600.00	90.52	270.00	10,997.82	996.76	-1,534.07	1,707.45	0.00	0.00	0.00
12,700.00	90.52	270.00	10,996.91	996.75	-1,634.07	1,805.27	0.00	0.00	0.00
12,800.00	90.52	270.00	10,996.00	996.75	-1,734.06	1,903.09	0.00	0.00	0.00
12,900.00	90.52	270.00	10,995.09	996.74	-1,834.06	2,000.91	0.00	0.00	0.00
13,000.00	90.52	270.00	10,994.18	996.74	-1,934.05	2,098.73	0.00	0.00	0.00
13,100.00	90.52	270.00	10,993.27	996.73	-2,034.05	2,196.55	0.00	0.00	0.00
13,200.00	90.52	270.00	10,992.36	996.72	-2,134.04	2,294.37	0.00	0.00	0.00
13,300.00	90.52	270.00	10,991.45	996.72	-2,234.04	2,392.19	0.00	0.00	0.00
13,400.00	90.52	270.00	10,990.54	996.71	-2,334.04	2,490.01	0.00	0.00	0.00
13,500.00	90.52	270.00	10,989.63	996.70	-2,434.03	2,587.83	0.00	0.00	0.00
13,600.00	90.52	270.00	10,988.72	996.70	-2,534.03	2,685.65	0.00	0.00	0.00
13,700.00	90.52	270.00	10,987.81	996.69	-2,634.02	2,783.47	0.00	0.00	0.00
13,800.00	90.52	270.00	10,986.90	996.69	-2,734.02	2,881.29	0.00	0.00	0.00
13,900.00	90.52	270.00	10,985.99	996.68	-2,834.02	2,979.11	0.00	0.00	0.00
14,000.00	90.52	270.00	10,985.08	996.67	-2,934.01	3,076.93	0.00	0.00	0.00
14,100.00	90.52	270.00	10,984.17	996.67	-3,034.01	3,174.75	0.00	0.00	0.00
14,200.00	90.52	270.00	10,983.26	996.66	-3,134.00	3,272.57	0.00	0.00	0.00
14,300.00	90.52	270.00	10,982.34	996.66	-3,234.00	3,370.39	0.00	0.00	0.00
14,400.00	90.52	270.00	10,981.43	996.65	-3,334.00	3,468.21	0.00	0.00	0.00
14,500.00	90.52	270.00	10,980.52	996.64	-3,433.99	3,566.03	0.00	0.00	0.00
14,600.00	90.52	270.00	10,979.61	996.64	-3,533.99	3,663.85	0.00	0.00	0.00
14,700.00	90.52	270.00	10,978.70	996.63	-3,633.98	3,761.67	0.00	0.00	0.00
14,800.00	90.52	270.00	10,977.79	996.62	-3,733.98	3,859.49	0.00	0.00	0.00
14,900.00	90.52	270.00	10,976.88	996.62	-3,833.97	3,957.31	0.00	0.00	0.00
15,000.00	90.52	270.00	10,975.97	996.61	-3,933.97	4,055.13	0.00	0.00	0.00
15,100.00	90.52	270.00	10,975.06	996.61	-4,033.97	4,152.95	0.00	0.00	0.00
15,200.00	90.52	270.00	10,974.15	996.60	-4,133.96	4,250.77	0.00	0.00	0.00
15,300.00	90.52	270.00	10,973.24	996.59	-4,233.96	4,348.59	0.00	0.00	0.00
15,400.00	90.52	270.00	10,972.33	996.59	-4,333.95	4,446.41	0.00	0.00	0.00
15,500.00	90.52	270.00	10,971.42	996.58	-4,433.95	4,544.23	0.00	0.00	0.00
15,600.00	90.52	270.00	10,970.51	996.58	-4,533.95	4,642.05	0.00	0.00	0.00
15,700.00	90.52	270.00	10,969.60	996.57	-4,633.94	4,739.87	0.00	0.00	0.00
15,765.79	90.52	270.00	10,969.00	996.57	-4,699.72	4,804.22	0.00	0.00	0.00
TD at 15765.78' MD - PBHL (A24F 13H)									

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well 13H
Company:	DEVON ENERGY	**TVD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Project:	Eddy County, NM (NAD-83)	**MD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Site:	Apache 24 Fed	**North Reference:**	Grid
Well:	13H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 Draft 1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL (A24F 13H)	0.00	0.00	0.00	-49.99	0.19	499,748.90	697,761.35	32° 22' 22.301 N	103° 49' 35.985 W
- plan misses target center by 4039.88usft at 4039.57usft MD (4039.57 TVD, 0.00 N, 0.00 E)									
- Point									
PBHL (A24F 13H)	0.00	0.00	10,969.00	996.57	-4,699.72	500,795.46	693,061.43	32° 22' 32.874 N	103° 50' 30.732 W
- plan hits target center									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
4,039.57	4,039.57	0.00	0.00	KOP: Start Build 2.00
4,539.57	4,537.04	42.86	7.56	Start 5328.00 hold at 4539.57 MD
9,867.57	9,784.09	954.00	168.22	Start Drop -2.00
10,367.57	10,281.56	996.86	175.77	Start 250.00 hold at 10367.57 MD
10,617.57	10,531.56	996.86	175.77	Curve KOP: Start DLS 12.00 TFO 270.00
11,371.92	11,009.00	996.83	-306.04	EOC: Start 4393.87 hold at 11371.92 MD
15,765.79	10,969.00	996.57	-4,699.72	TD at 15765.78' MD

DEVON ENERGY

Eddy County, NM (NAD-83)
Apache 24 Fed
13H

OH
Plan #1 Draft 1

Anticollision Report

11 February, 2014

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	**Local Co-ordinate Reference:**	Well 13H
Project:	Eddy County, NM (NAD-83)	**TVD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Reference Site:	Apache 24 Fed	**MD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	**Offset TVD Reference:**	Reference Datum

Reference Plan #1 Draft 1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00usft	**Error Model:**	ISCWSA
Depth Range:	0.00 to 15,766.22usft	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 usft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 02/11/14

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	15,765.79	Plan #1 Draft 1 (OH)	LEAM MWD-ADJ	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Apache 24 Fed						
12H - OH - Plan #1 Draft 1	4,039.57	4,039.57	49.99	32.11	2.796	CC, ES
12H - OH - Plan #1 Draft 1	4,100.00	4,100.00	50.62	32.47	2.789	SF

Offset Design Apache 24 Fed - 12H - OH - Plan #1 Draft 1 — Offset Site Error: 0.00 usft

Survey Program: 0-LEAM MWD-ADJ — Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	179.78	-49.99	0.19	49.99				
100.00	100.00	100.00	100.00	0.08	0.08	179.78	-49.99	0.19	49.99	49.82	0.17	296.547	
200.00	200.00	200.00	200.00	0.31	0.31	179.78	-49.99	0.19	49.99	49.37	0.62	80.877	
300.00	300.00	300.00	300.00	0.53	0.53	179.78	-49.99	0.19	49.99	48.92	1.07	46.823	
400.00	400.00	400.00	400.00	0.76	0.76	179.78	-49.99	0.19	49.99	48.47	1.52	32.950	
500.00	500.00	500.00	500.00	0.98	0.98	179.78	-49.99	0.19	49.99	48.02	1.97	25.418	
600.00	600.00	600.00	600.00	1.21	1.21	179.78	-49.99	0.19	49.99	47.57	2.42	20.689	
700.00	700.00	700.00	700.00	1.43	1.43	179.78	-49.99	0.19	49.99	47.12	2.87	17.444	
800.00	800.00	800.00	800.00	1.66	1.66	179.78	-49.99	0.19	49.99	46.68	3.32	15.079	
900.00	900.00	900.00	900.00	1.88	1.88	179.78	-49.99	0.19	49.99	46.23	3.76	13.278	
1,000.00	1,000.00	1,000.00	1,000.00	2.11	2.11	179.78	-49.99	0.19	49.99	45.78	4.21	11.862	
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	179.78	-49.99	0.19	49.99	45.33	4.66	10.719	
1,200.00	1,200.00	1,200.00	1,200.00	2.56	2.56	179.78	-49.99	0.19	49.99	44.88	5.11	9.776	
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	179.78	-49.99	0.19	49.99	44.43	5.56	8.986	
1,400.00	1,400.00	1,400.00	1,400.00	3.01	3.01	179.78	-49.99	0.19	49.99	43.98	6.01	8.314	
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	179.78	-49.99	0.19	49.99	43.53	6.46	7.736	
1,600.00	1,600.00	1,600.00	1,600.00	3.46	3.46	179.78	-49.99	0.19	49.99	43.08	6.91	7.233	
1,700.00	1,700.00	1,700.00	1,700.00	3.68	3.68	179.78	-49.99	0.19	49.99	42.63	7.36	6.791	
1,800.00	1,800.00	1,800.00	1,800.00	3.91	3.91	179.78	-49.99	0.19	49.99	42.18	7.81	6.400	
1,900.00	1,900.00	1,900.00	1,900.00	4.13	4.13	179.78	-49.99	0.19	49.99	41.73	8.26	6.052	
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	179.78	-49.99	0.19	49.99	41.28	8.71	5.740	
2,100.00	2,100.00	2,100.00	2,100.00	4.58	4.58	179.78	-49.99	0.19	49.99	40.83	9.16	5.458	
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	179.78	-49.99	0.19	49.99	40.38	9.61	5.203	
2,300.00	2,300.00	2,300.00	2,300.00	5.03	5.03	179.78	-49.99	0.19	49.99	39.93	10.06	4.970	
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	179.78	-49.99	0.19	49.99	39.48	10.51	4.757	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	**Local Co-ordinate Reference:**	Well 13H
Project:	Eddy County, NM (NAD-83)	**TVD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Reference Site:	Apache 24 Fed	**MD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	**Offset TVD Reference:**	Reference Datum

Offset Design Apache 24 Fed - 12H - OH - Plan #1 Draft 1 — Offset Site Error: 0.00 usft

Survey Program: 0-LEAM MWD-ADJ — Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,500.00	2,500.00	2,500.00	2,500.00	5.48	5.48	179.78	-49.99	0.19	49.99	39.03	10.96	4.562	
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	179.78	-49.99	0.19	49.99	38.58	11.41	4.382	
2,700.00	2,700.00	2,700.00	2,700.00	5.93	5.93	179.78	-49.99	0.19	49.99	38.13	11.86	4.216	
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	179.78	-49.99	0.19	49.99	37.68	12.31	4.062	
2,900.00	2,900.00	2,900.00	2,900.00	6.38	6.38	179.78	-49.99	0.19	49.99	37.23	12.76	3.919	
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	179.78	-49.99	0.19	49.99	36.79	13.21	3.786	
3,100.00	3,100.00	3,100.00	3,100.00	6.83	6.83	179.78	-49.99	0.19	49.99	36.34	13.65	3.661	
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	179.78	-49.99	0.19	49.99	35.89	14.10	3.544	
3,300.00	3,300.00	3,300.00	3,300.00	7.28	7.28	179.78	-49.99	0.19	49.99	35.44	14.55	3.435	
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	179.78	-49.99	0.19	49.99	34.99	15.00	3.332	
3,500.00	3,500.00	3,500.00	3,500.00	7.73	7.73	179.78	-49.99	0.19	49.99	34.54	15.45	3.235	
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	179.78	-49.99	0.19	49.99	34.09	15.90	3.144	
3,700.00	3,700.00	3,700.00	3,700.00	8.18	8.18	179.78	-49.99	0.19	49.99	33.64	16.35	3.057	
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	179.78	-49.99	0.19	49.99	33.19	16.80	2.975	
3,900.00	3,900.00	3,900.00	3,900.00	8.63	8.63	179.78	-49.99	0.19	49.99	32.74	17.25	2.898	
4,000.00	4,000.00	4,000.00	4,000.00	8.85	8.85	179.78	-49.99	0.19	49.99	32.29	17.70	2.824	
4,039.57	4,039.57	4,039.57	4,039.57	8.94	8.94	179.78	-49.99	0.19	49.99	32.11	17.88	2.796	CC, ES
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	169.91	-49.99	0.19	50.62	32.47	18.15	2.789	SF
4,200.00	4,199.92	4,199.92	4,199.92	9.30	9.30	170.61	-49.99	0.19	54.42	35.84	18.57	2.930	
4,300.00	4,299.64	4,299.64	4,299.64	9.52	9.52	171.70	-49.99	0.19	61.67	42.69	18.98	3.250	
4,400.00	4,399.05	4,399.05	4,399.05	9.75	9.75	172.91	-49.99	0.19	72.39	53.03	19.35	3.740	
4,500.00	4,498.02	4,498.02	4,498.02	9.97	9.97	174.04	-49.99	0.19	86.57	66.87	19.71	4.393	
4,539.57	4,537.04	4,537.04	4,537.04	10.07	10.06	174.45	-49.99	0.19	93.14	73.30	19.84	4.694	
4,600.00	4,596.55	4,596.55	4,596.55	10.21	10.19	175.01	-49.99	0.19	103.59	83.49	20.11	5.152	
4,700.00	4,695.03	4,695.03	4,695.03	10.45	10.41	175.73	-49.99	0.19	120.90	100.35	20.55	5.882	
4,800.00	4,793.51	4,793.51	4,793.51	10.71	10.63	176.27	-49.99	0.19	138.23	117.23	21.00	6.582	
4,900.00	4,891.99	4,891.99	4,891.99	10.97	10.86	176.68	-49.99	0.19	155.56	134.11	21.45	7.253	
5,000.00	4,990.47	4,990.47	4,990.47	11.23	11.08	177.01	-49.99	0.19	172.90	151.00	21.90	7.896	
5,100.00	5,088.95	5,088.95	5,088.95	11.51	11.30	177.29	-49.99	0.19	190.24	167.90	22.35	8.513	
5,200.00	5,187.43	5,187.43	5,187.43	11.79	11.52	177.51	-49.99	0.19	207.59	184.79	22.80	9.106	
5,300.00	5,285.91	5,285.91	5,285.91	12.07	11.74	177.71	-49.99	0.19	224.94	201.69	23.25	9.675	
5,400.00	5,384.39	5,384.39	5,384.39	12.36	11.96	177.87	-49.99	0.19	242.29	218.59	23.70	10.222	
5,500.00	5,482.87	5,482.87	5,482.87	12.66	12.18	178.01	-49.99	0.19	259.65	235.49	24.16	10.748	
5,600.00	5,581.36	5,581.36	5,581.36	12.96	12.40	178.14	-49.99	0.19	277.00	252.39	24.61	11.254	
5,700.00	5,679.84	5,679.84	5,679.84	13.26	12.63	178.25	-49.99	0.19	294.36	269.29	25.07	11.742	
5,800.00	5,778.32	5,778.32	5,778.32	13.57	12.85	178.34	-49.99	0.19	311.72	286.19	25.53	12.212	
5,900.00	5,876.80	5,876.80	5,876.80	13.88	13.07	178.43	-49.99	0.19	329.08	303.09	25.98	12.665	
6,000.00	5,975.28	5,975.28	5,975.28	14.19	13.29	178.51	-49.99	0.19	346.43	319.99	26.44	13.102	
6,100.00	6,073.76	6,073.76	6,073.76	14.51	13.51	178.58	-49.99	0.19	363.79	336.89	26.90	13.524	
6,200.00	6,172.24	6,172.24	6,172.24	14.83	13.73	178.65	-49.99	0.19	381.15	353.79	27.36	13.931	
6,300.00	6,270.72	6,270.72	6,270.72	15.15	13.95	178.71	-49.99	0.19	398.51	370.69	27.82	14.325	
6,400.00	6,369.20	6,369.20	6,369.20	15.47	14.18	178.76	-49.99	0.19	415.87	387.59	28.28	14.705	
6,500.00	6,467.68	6,467.68	6,467.68	15.80	14.40	178.81	-49.99	0.19	433.24	404.49	28.74	15.073	
6,600.00	6,566.16	6,566.16	6,566.16	16.13	14.62	178.85	-49.99	0.19	450.60	421.39	29.20	15.429	
6,700.00	6,664.64	6,664.64	6,664.64	16.46	14.84	178.90	-49.99	0.19	467.96	438.29	29.67	15.774	
6,800.00	6,763.12	6,763.12	6,763.12	16.80	15.06	178.94	-49.99	0.19	485.32	455.19	30.13	16.108	
6,900.00	6,861.61	6,861.61	6,861.61	17.13	15.28	178.97	-49.99	0.19	502.68	472.09	30.59	16.431	
7,000.00	6,960.09	6,960.09	6,960.09	17.47	15.50	179.01	-49.99	0.19	520.04	488.99	31.06	16.745	
7,100.00	7,058.57	7,058.57	7,058.57	17.81	15.72	179.04	-49.99	0.19	537.41	505.89	31.52	17.049	
7,200.00	7,157.05	7,157.05	7,157.05	18.15	15.95	179.07	-49.99	0.19	554.77	522.78	31.99	17.344	
7,300.00	7,255.53	7,255.53	7,255.53	18.49	16.17	179.10	-49.99	0.19	572.13	539.68	32.45	17.631	
7,400.00	7,354.01	7,354.01	7,354.01	18.84	16.39	179.12	-49.99	0.19	589.50	556.58	32.92	17.909	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	**Local Co-ordinate Reference:**	Well 13H
Project:	Eddy County, NM (NAD-83)	**TVD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Reference Site:	Apache 24 Fed	**MD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	**Offset TVD Reference:**	Reference Datum

Offset Design Apache 24 Fed - 12H - OH - Plan #1 Draft 1 — **Offset Site Error:** 0.00 usft

Survey Program: 0-LEAM MWD-ADJ — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,500.00	7,452.49	7,452.49	7,452.49	19.18	16.61	179.15	-49.99	0.19	606.86	573.48	33.38	18.179	
7,600.00	7,550.97	7,550.97	7,550.97	19.53	16.83	179.17	-49.99	0.19	624.22	590.37	33.85	18.442	
7,700.00	7,649.45	7,649.45	7,649.45	19.87	17.05	179.20	-49.99	0.19	641.58	607.27	34.31	18.697	
7,800.00	7,747.93	7,747.93	7,747.93	20.22	17.27	179.22	-49.99	0.19	658.95	624.17	34.78	18.945	
7,900.00	7,846.41	7,846.41	7,846.41	20.57	17.50	179.24	-49.99	0.19	676.31	641.06	35.25	19.187	
8,000.00	7,944.89	7,944.89	7,944.89	20.92	17.72	179.26	-49.99	0.19	693.67	657.96	35.72	19.422	
8,100.00	8,043.37	8,043.37	8,043.37	21.27	17.94	179.27	-49.99	0.19	711.04	674.85	36.18	19.651	
8,200.00	8,141.86	8,141.86	8,141.86	21.63	18.16	179.29	-49.99	0.19	728.40	691.75	36.65	19.874	
8,300.00	8,240.34	8,240.34	8,240.34	21.98	18.38	179.31	-49.99	0.19	745.76	708.64	37.12	20.091	
8,400.00	8,338.82	8,338.82	8,338.82	22.33	18.60	179.32	-49.99	0.19	763.13	725.54	37.59	20.302	
8,500.00	8,437.30	8,437.30	8,437.30	22.69	18.82	179.34	-49.99	0.19	780.49	742.43	38.06	20.508	
8,600.00	8,535.78	8,535.78	8,535.78	23.05	19.05	179.35	-49.99	0.19	797.86	759.33	38.53	20.709	
8,700.00	8,634.26	8,634.26	8,634.26	23.40	19.27	179.37	-49.99	0.19	815.22	776.22	39.00	20.905	
8,800.00	8,732.74	8,732.74	8,732.74	23.76	19.49	179.38	-49.99	0.19	832.58	793.12	39.47	21.096	
8,900.00	8,831.22	8,831.22	8,831.22	24.12	19.71	179.39	-49.99	0.19	849.95	810.01	39.94	21.283	
9,000.00	8,929.70	8,929.70	8,929.70	24.48	19.93	179.41	-49.99	0.19	867.31	826.90	40.41	21.465	
9,100.00	9,028.18	9,028.18	9,028.18	24.84	20.15	179.42	-49.99	0.19	884.67	843.80	40.88	21.643	
9,200.00	9,126.66	9,126.66	9,126.66	25.20	20.37	179.43	-49.99	0.19	902.04	860.69	41.35	21.816	
9,300.00	9,225.14	9,225.14	9,225.14	25.56	20.59	179.44	-49.99	0.19	919.40	877.58	41.82	21.986	
9,400.00	9,323.62	9,323.62	9,323.62	25.92	20.82	179.45	-49.99	0.19	936.77	894.48	42.29	22.151	
9,500.00	9,422.11	9,422.11	9,422.11	26.28	21.04	179.46	-49.99	0.19	954.13	911.37	42.76	22.313	
9,600.00	9,520.59	9,520.59	9,520.59	26.64	21.26	179.47	-49.99	0.19	971.50	928.26	43.23	22.472	
9,700.00	9,619.07	9,619.07	9,619.07	27.00	21.48	179.48	-49.99	0.19	988.86	945.16	43.70	22.626	
9,800.00	9,717.55	9,717.55	9,717.55	27.36	21.70	179.49	-49.99	0.19	1,006.22	962.05	44.18	22.778	
9,857.57	9,784.09	9,784.09	9,784.09	27.61	21.85	179.49	-49.99	0.19	1,017.96	973.46	44.49	22.878	
9,900.00	9,816.06	9,816.06	9,816.06	27.72	21.92	179.50	-49.99	0.19	1,023.41	978.72	44.68	22.904	
10,000.00	9,914.99	9,914.99	9,914.99	27.99	22.15	179.51	-49.99	0.19	1,037.93	992.72	45.21	22.959	
10,100.00	10,014.38	10,014.38	10,014.38	28.23	22.37	179.51	-49.99	0.19	1,048.99	1,003.30	45.69	22.960	
10,200.00	10,114.08	10,114.08	10,114.08	28.43	22.59	179.52	-49.99	0.19	1,056.58	1,010.45	46.12	22.907	
10,300.00	10,213.99	10,213.99	10,213.99	28.61	22.82	179.52	-49.99	0.19	1,060.68	1,014.16	46.52	22.803	
10,367.57	10,281.56	10,281.56	10,281.56	28.71	22.97	-170.48	-49.99	0.19	1,061.48	1,009.80	51.68	20.540	
10,400.00	10,313.99	10,313.99	10,313.99	28.76	23.04	-170.48	-49.99	0.19	1,061.48	1,009.67	51.80	20.491	
10,500.00	10,413.99	10,413.99	10,413.99	28.94	23.27	-170.48	-49.99	0.19	1,061.48	1,009.27	52.20	20.334	
10,600.00	10,513.99	10,513.99	10,513.99	29.11	23.49	-170.48	-49.99	0.19	1,061.48	1,008.88	52.60	20.179	
10,617.57	10,531.56	10,531.56	10,531.56	29.14	23.53	-170.48	-49.99	0.19	1,061.48	1,008.80	52.67	20.152	
10,625.00	10,538.99	10,536.57	10,536.57	29.15	23.54	-80.48	-49.99	0.19	1,061.47	1,013.61	47.86	22.178	
10,650.00	10,563.96	10,554.92	10,554.91	29.19	23.58	-80.50	-50.01	-0.16	1,061.41	1,013.48	47.93	22.144	
10,675.00	10,588.85	10,575.00	10,574.96	29.23	23.62	-80.56	-50.08	-1.35	1,061.34	1,013.34	48.00	22.110	
10,700.00	10,613.58	10,588.41	10,588.31	29.26	23.65	-80.61	-50.15	-2.62	1,061.24	1,013.18	48.06	22.082	
10,725.00	10,638.08	10,605.18	10,604.95	29.29	23.68	-80.69	-50.28	-4.72	1,061.12	1,013.00	48.12	22.052	
10,750.00	10,662.30	10,625.00	10,624.50	29.32	23.72	-80.80	-50.46	-7.96	1,060.99	1,012.81	48.18	22.019	
10,775.00	10,686.15	10,638.81	10,638.03	29.35	23.75	-80.90	-50.62	-10.70	1,060.84	1,012.60	48.24	21.992	
10,800.00	10,709.58	10,655.67	10,654.43	29.37	23.78	-81.03	-50.85	-14.56	1,060.68	1,012.38	48.30	21.962	
10,825.00	10,732.52	10,675.00	10,673.07	29.40	23.82	-81.20	-51.15	-19.70	1,060.52	1,012.15	48.36	21.929	
10,850.00	10,754.91	10,689.51	10,686.91	29.42	23.85	-81.35	-51.40	-24.06	1,060.34	1,011.92	48.42	21.899	
10,875.00	10,776.69	10,706.51	10,702.95	29.44	23.89	-81.53	-51.73	-29.68	1,060.16	1,011.68	48.48	21.867	
10,900.00	10,797.80	10,725.00	10,720.15	29.45	23.93	-81.75	-52.12	-36.45	1,059.99	1,011.43	48.55	21.831	
10,925.00	10,818.18	10,740.69	10,734.53	29.47	23.96	-81.94	-52.49	-42.71	1,059.82	1,011.20	48.62	21.796	
10,950.00	10,837.77	10,757.88	10,750.04	29.49	24.00	-82.17	-52.92	-50.10	1,059.66	1,010.96	48.70	21.757	
10,975.00	10,856.53	10,775.00	10,765.21	29.50	24.04	-82.41	-53.38	-58.02	1,059.52	1,010.73	48.79	21.716	
11,000.00	10,874.39	10,792.52	10,780.43	29.52	24.08	-82.67	-53.88	-66.67	1,059.40	1,010.52	48.89	21.670	
11,025.00	10,891.31	10,809.97	10,795.27	29.54	24.13	-82.93	-54.41	-75.84	1,059.31	1,010.32	48.99	21.621	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	**Local Co-ordinate Reference:**	Well 13H
Project:	Eddy County, NM (NAD-83)	**TVD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Reference Site:	Apache 24 Fed	**MD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	**Offset TVD Reference:**	Reference Datum

Offset Design Apache 24 Fed - 12H - OH - Plan #1 Draft 1 — Offset Site Error: 0.00 usft

Survey Program: 0-LEAM MWD-ADJ — Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,050.00	10,907.25	10,825.00	10,807.78	29.55	24.17	-83.17	-54.90	-84.17	1,059.26	1,010.15	49.10	21.572	
11,053.42	10,909.35	10,829.94	10,811.83	29.56	24.18	-83.25	-55.06	-86.99	1,059.25	1,010.11	49.13	21.559	
11,075.00	10,922.15	10,845.20	10,824.16	29.57	24.22	-83.50	-55.58	-95.97	1,059.23	1,009.98	49.25	21.509	
11,075.58	10,922.49	10,845.62	10,824.48	29.57	24.23	-83.51	-55.60	-96.22	1,059.23	1,009.98	49.25	21.508	
11,100.00	10,935.99	10,863.00	10,838.16	29.59	24.28	-83.81	-56.22	-106.94	1,059.25	1,009.86	49.39	21.445	
11,125.00	10,948.72	10,880.93	10,851.84	29.62	24.33	-84.12	-56.89	-118.50	1,059.32	1,009.77	49.56	21.375	
11,150.00	10,960.30	10,900.00	10,865.91	29.64	24.40	-84.46	-57.64	-131.35	1,059.45	1,009.71	49.74	21.298	
11,175.00	10,970.71	10,917.24	10,878.17	29.68	24.46	-84.77	-58.34	-143.45	1,059.64	1,009.70	49.94	21.217	
11,200.00	10,979.92	10,935.64	10,890.77	29.71	24.53	-85.11	-59.12	-156.83	1,059.90	1,009.73	50.17	21.128	
11,225.00	10,987.89	10,954.23	10,902.97	29.76	24.60	-85.45	-59.94	-170.84	1,060.23	1,009.82	50.41	21.033	
11,250.00	10,994.62	10,975.00	10,915.93	29.81	24.69	-85.85	-60.88	-187.03	1,060.65	1,009.96	50.69	20.926	
11,275.00	11,000.08	10,992.04	10,926.04	29.87	24.77	-86.17	-61.68	-200.73	1,061.14	1,010.18	50.96	20.821	
11,300.00	11,004.25	11,011.29	10,936.85	29.94	24.87	-86.53	-62.60	-216.62	1,061.73	1,010.45	51.28	20.706	
11,325.00	11,007.13	11,030.79	10,947.15	30.03	24.98	-86.90	-63.56	-233.16	1,062.41	1,010.80	51.61	20.584	
11,350.00	11,008.70	11,050.00	10,956.62	30.13	25.09	-87.26	-64.53	-249.84	1,063.20	1,011.23	51.97	20.459	
11,371.92	11,009.00	11,068.18	10,964.95	30.23	25.21	-87.61	-65.47	-265.97	1,063.97	1,011.66	52.31	20.340	
11,400.00	11,008.75	11,091.42	10,974.71	30.38	25.36	-88.14	-66.70	-287.03	1,065.11	1,012.33	52.78	20.179	
11,500.00	11,007.84	11,182.21	11,002.68	31.11	26.11	-89.69	-71.70	-373.11	1,070.28	1,015.52	54.77	19.543	
11,600.00	11,006.93	11,281.65	11,014.01	32.14	27.14	-90.35	-77.43	-471.56	1,076.09	1,018.90	57.20	18.814	
11,700.00	11,006.01	11,381.64	11,012.94	33.45	28.39	-90.34	-83.23	-571.37	1,081.89	1,021.88	60.01	18.029	
11,800.00	11,005.10	11,481.47	11,011.76	34.97	29.83	-90.32	-89.03	-671.03	1,087.69	1,024.53	63.16	17.222	
11,900.00	11,004.19	11,581.30	11,010.58	36.68	31.45	-90.30	-94.83	-770.68	1,093.49	1,026.88	66.61	16.417	
12,000.00	11,003.28	11,681.13	11,009.40	38.52	33.21	-90.29	-100.62	-870.34	1,099.29	1,028.97	70.32	15.632	
12,100.00	11,002.37	11,780.96	11,008.22	40.48	35.09	-90.27	-106.42	-969.99	1,105.09	1,030.83	74.26	14.882	
12,200.00	11,001.46	11,880.79	11,007.04	42.54	37.09	-90.26	-112.22	-1,069.65	1,110.88	1,032.51	78.38	14.173	
12,300.00	11,000.55	11,980.63	11,005.86	44.67	39.17	-90.24	-118.01	-1,169.31	1,116.68	1,034.02	82.66	13.509	
12,400.00	10,999.64	12,080.46	11,004.68	46.88	41.33	-90.23	-123.81	-1,268.96	1,122.48	1,035.40	87.08	12.890	
12,500.00	10,998.73	12,180.29	11,003.50	49.14	43.55	-90.21	-129.60	-1,368.62	1,128.28	1,036.67	91.61	12.316	
12,600.00	10,997.82	12,280.12	11,002.31	51.44	45.83	-90.20	-135.40	-1,468.27	1,134.08	1,037.83	96.25	11.783	
12,700.00	10,996.91	12,379.95	11,001.13	53.80	48.16	-90.18	-141.20	-1,567.93	1,139.88	1,038.91	100.97	11.290	
12,800.00	10,996.00	12,479.78	10,999.95	56.19	50.53	-90.17	-146.99	-1,667.58	1,145.68	1,039.92	105.76	10.833	
12,900.00	10,995.09	12,579.61	10,998.77	58.61	52.93	-90.15	-152.79	-1,767.24	1,151.48	1,040.86	110.62	10.409	
13,000.00	10,994.18	12,679.44	10,997.59	61.06	55.36	-90.14	-158.59	-1,866.90	1,157.28	1,041.74	115.54	10.017	
13,100.00	10,993.27	12,779.28	10,996.41	63.54	57.83	-90.12	-164.38	-1,966.55	1,163.08	1,042.58	120.50	9.652	
13,200.00	10,992.36	12,879.11	10,995.23	66.03	60.31	-90.11	-170.18	-2,066.21	1,168.88	1,043.37	125.51	9.313	
13,300.00	10,991.45	12,978.94	10,994.05	68.55	62.82	-90.10	-175.97	-2,165.86	1,174.67	1,044.12	130.56	8.997	
13,400.00	10,990.54	13,078.77	10,992.87	71.09	65.34	-90.08	-181.77	-2,265.52	1,180.47	1,044.84	135.64	8.703	
13,500.00	10,989.63	13,178.60	10,991.69	73.64	67.89	-90.07	-187.57	-2,365.18	1,186.27	1,045.52	140.75	8.428	
13,600.00	10,988.72	13,278.43	10,990.50	76.20	70.44	-90.06	-193.36	-2,464.83	1,192.07	1,046.19	145.89	8.171	
13,700.00	10,987.81	13,378.26	10,989.32	78.78	73.01	-90.04	-199.16	-2,564.49	1,197.87	1,046.82	151.05	7.930	
13,800.00	10,986.90	13,478.09	10,988.14	81.37	75.59	-90.03	-204.96	-2,664.14	1,203.67	1,047.44	156.24	7.704	
13,900.00	10,985.99	13,577.93	10,986.96	83.97	78.18	-90.02	-210.75	-2,763.80	1,209.47	1,048.03	161.44	7.492	
14,000.00	10,985.08	13,677.76	10,985.78	86.58	80.78	-90.00	-216.55	-2,863.46	1,215.27	1,048.61	166.67	7.292	
14,100.00	10,984.17	13,777.59	10,984.60	89.20	83.39	-89.99	-222.35	-2,963.11	1,221.07	1,049.17	171.91	7.103	
14,200.00	10,983.26	13,877.42	10,983.42	91.83	86.01	-89.98	-228.14	-3,062.77	1,226.87	1,049.71	177.16	6.925	
14,300.00	10,982.34	13,977.25	10,982.24	94.46	88.64	-89.96	-233.94	-3,162.42	1,232.67	1,050.24	182.43	6.757	
14,400.00	10,981.43	14,077.08	10,981.06	97.10	91.27	-89.95	-239.73	-3,262.08	1,238.47	1,050.76	187.71	6.598	
14,500.00	10,980.52	14,176.91	10,979.88	99.75	93.91	-89.94	-245.53	-3,361.73	1,244.27	1,051.27	193.01	6.447	
14,600.00	10,979.61	14,276.74	10,978.69	102.40	96.55	-89.93	-251.33	-3,461.39	1,250.07	1,051.77	198.31	6.304	
14,700.00	10,978.70	14,376.58	10,977.51	105.06	99.20	-89.92	-257.12	-3,561.05	1,255.87	1,052.25	203.62	6.168	
14,800.00	10,977.79	14,476.41	10,976.33	107.72	101.85	-89.90	-262.92	-3,660.70	1,261.67	1,052.73	208.94	6.038	
14,900.00	10,976.88	14,576.24	10,975.15	110.39	104.51	-89.89	-268.72	-3,760.36	1,267.48	1,053.20	214.27	5.915	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	**Local Co-ordinate Reference:**	Well 13H
Project:	Eddy County, NM (NAD-83)	**TVD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Reference Site:	Apache 24 Fed	**MD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	**Offset TVD Reference:**	Reference Datum

Offset Design Apache 24 Fed - 12H - OH - Plan #1 Draft 1 — **Offset Site Error:** 0.00 usft

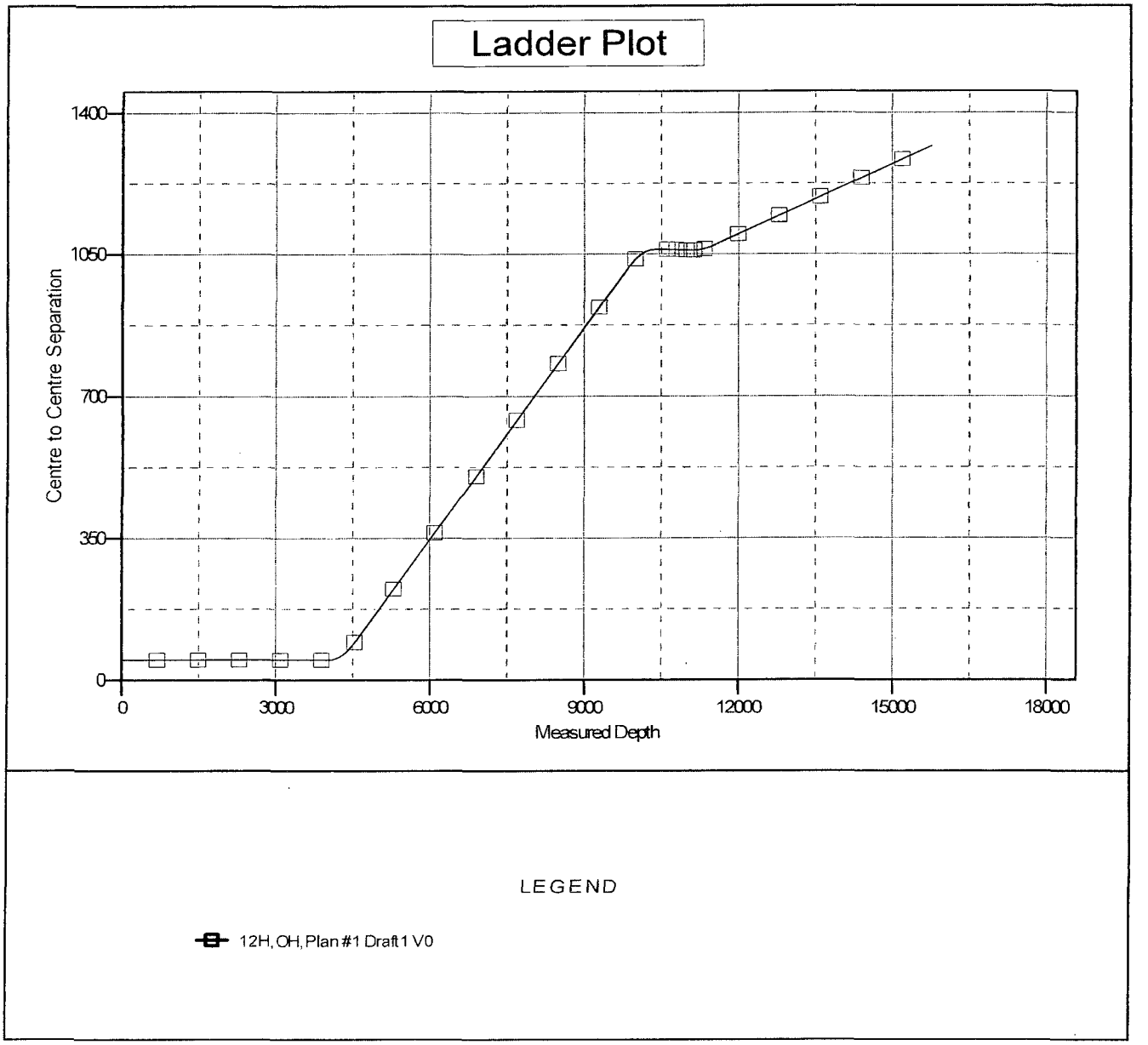
Survey Program: 0-LEAM MWD-ADJ — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,000.00	10,975.97	14,676.07	10,973.97	113.06	107.17	-89.88	-274.51	-3,860.01	1,273.28	1,053.66	219.61	5.798	
15,100.00	10,975.06	14,775.90	10,972.79	115.74	109.83	-89.87	-280.31	-3,959.67	1,279.08	1,054.12	224.96	5.686	
15,200.00	10,974.15	14,875.73	10,971.61	118.42	112.50	-89.86	-286.10	-4,059.33	1,284.88	1,054.57	230.31	5.579	
15,300.00	10,973.24	14,975.56	10,970.43	121.10	115.17	-89.84	-291.90	-4,158.98	1,290.68	1,055.01	235.67	5.477	
15,400.00	10,972.33	15,075.40	10,969.25	123.79	117.85	-89.83	-297.70	-4,258.64	1,296.48	1,055.45	241.03	5.379	
15,500.00	10,971.42	15,175.23	10,968.07	126.47	120.52	-89.82	-303.49	-4,358.29	1,302.28	1,055.88	246.40	5.285	
15,600.00	10,970.51	15,275.06	10,966.88	129.17	123.20	-89.81	-309.29	-4,457.95	1,308.08	1,056.31	251.77	5.195	
15,700.00	10,969.60	15,374.89	10,965.70	131.86	125.89	-89.80	-315.09	-4,557.60	1,313.88	1,056.73	257.15	5.109	
15,765.79	10,969.00	15,440.56	10,964.93	133.63	127.65	-89.79	-318.90	-4,623.16	1,317.70	1,057.00	260.69	5.055	
15,766.22	10,969.00	15,441.00	10,964.92	133.66	127.66	-89.79	-318.92	-4,623.60	1,317.72	1,057.01	260.71	5.054	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	DEVON ENERGY	**Local Co-ordinate Reference:**	Well 13H
Project:	Eddy County, NM (NAD-83)	**TVD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Reference Site:	Apache 24 Fed	**MD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	**Offset TVD Reference:**	Reference Datum

Reference Depths are relative to GE 3407' + KB 25" @ 3432.00usft — *Coordinates are relative to: 13H*
Offset Depths are relative to Offset Datum — Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is 104° 20' 0.000 W — Grid Convergence at Surface is: 0.27°



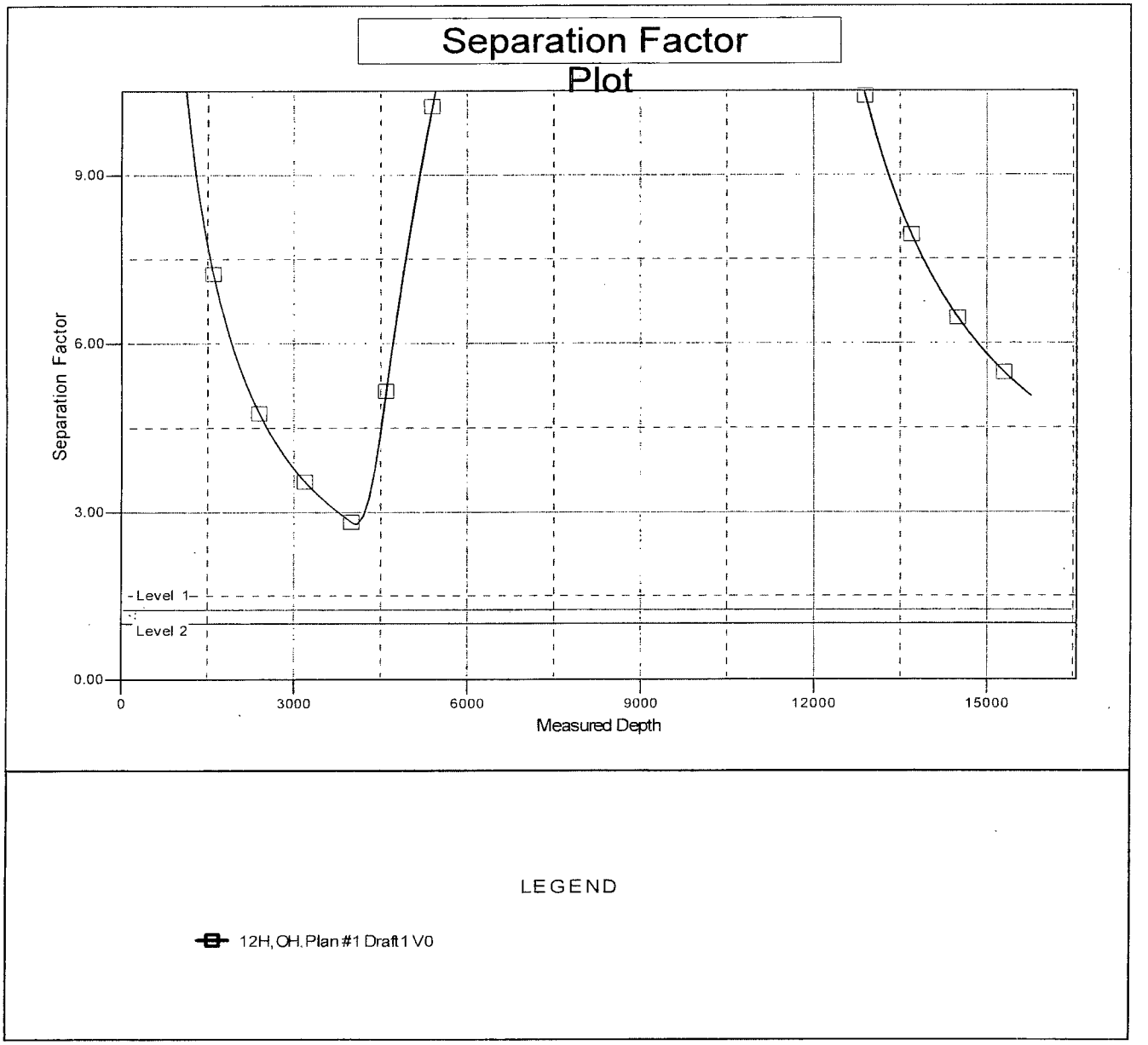
Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	**Local Co-ordinate Reference:**	Well 13H
Project:	Eddy County, NM (NAD-83)	**TVD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Reference Site:	Apache 24 Fed	**MD Reference:**	GE 3407' + KB 25" @ 3432.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	13H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #1 Draft 1	**Offset TVD Reference:**	Reference Datum

Reference Depths are relative to GE 3407' + KB 25" @ 3432.00usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: 13H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.27°



CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

MD	INC	AZI	TVD	NS	EW	DLS	BUILD	TURN	VSECT
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	0.00
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00	0.00
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	0.00
1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00
1400.00	0.00	0.00	1400.00	0.00	0.00	0.00	0.00	0.00	0.00
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00	0.00
1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	0.00	0.00	0.00
1700.00	0.00	0.00	1700.00	0.00	0.00	0.00	0.00	0.00	0.00
1800.00	0.00	0.00	1800.00	0.00	0.00	0.00	0.00	0.00	0.00
1900.00	0.00	0.00	1900.00	0.00	0.00	0.00	0.00	0.00	0.00
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00
2100.00	0.00	0.00	2100.00	0.00	0.00	0.00	0.00	0.00	0.00
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	0.00
2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	0.00	0.00	0.00
2400.00	0.00	0.00	2400.00	0.00	0.00	0.00	0.00	0.00	0.00
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	0.00
2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.00	0.00	0.00
2700.00	0.00	0.00	2700.00	0.00	0.00	0.00	0.00	0.00	0.00
2800.00	0.00	0.00	2800.00	0.00	0.00	0.00	0.00	0.00	0.00
2900.00	0.00	0.00	2900.00	0.00	0.00	0.00	0.00	0.00	0.00
3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	0.00	0.00	0.00
3100.00	0.00	0.00	3100.00	0.00	0.00	0.00	0.00	0.00	0.00
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	0.00	0.00	0.00
3300.00	0.00	0.00	3300.00	0.00	0.00	0.00	0.00	0.00	0.00
3400.00	0.00	0.00	3400.00	0.00	0.00	0.00	0.00	0.00	0.00
3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	0.00	0.00	0.00
3600.00	0.00	0.00	3600.00	0.00	0.00	0.00	0.00	0.00	0.00
3700.00	0.00	0.00	3700.00	0.00	0.00	0.00	0.00	0.00	0.00
3800.00	0.00	0.00	3800.00	0.00	0.00	0.00	0.00	0.00	0.00
3900.00	0.00	0.00	3900.00	0.00	0.00	0.00	0.00	0.00	0.00
4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	0.00	0.00	0.00
4039.57	0.00	0.00	4039.57	0.00	0.00	0.00	0.00	0.00	0.00
4100.00	1.21	10.00	4100.00	0.63	0.11	2.00	2.00	0.00	0.02
4200.00	3.21	10.00	4199.92	4.42	0.78	2.00	2.00	0.00	0.15
4300.00	5.21	10.00	4299.64	11.65	2.05	2.00	2.00	0.00	0.41
4400.00	7.21	10.00	4399.05	22.30	3.93	2.00	2.00	0.00	0.78

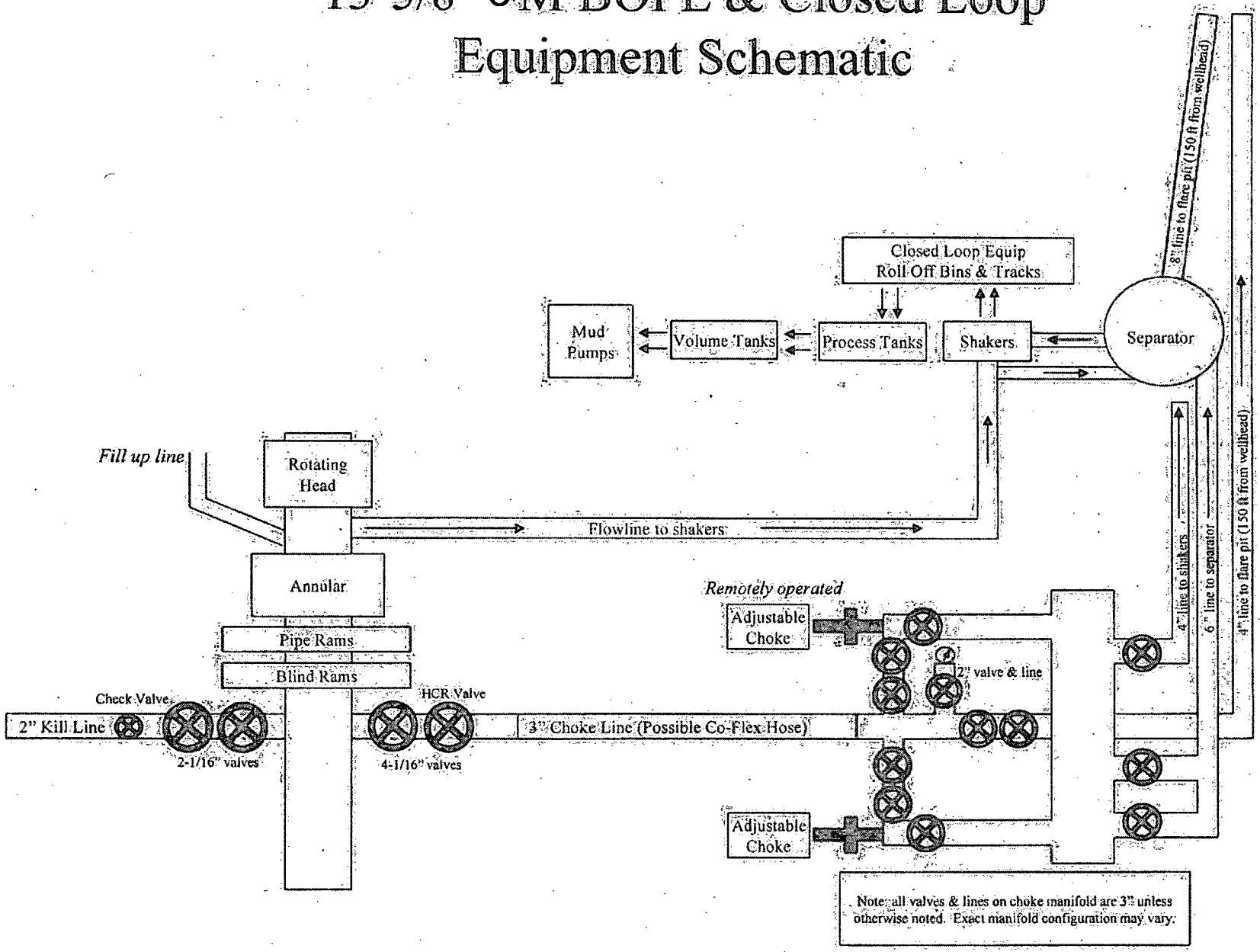
4500.00	9.21	10.00	4498.02	36.36	6.41	2.00	2.00	0.00	1.27
4539.57	10.00	10.00	4537.04	42.86	7.56	2.00	2.00	0.00	1.50
4600.00	10.00	10.00	4596.55	53.20	9.38	0.00	0.00	0.00	1.86
4700.00	10.00	10.00	4695.03	70.30	12.40	0.00	0.00	0.00	2.46
4800.00	10.00	10.00	4793.51	87.40	15.41	0.00	0.00	0.00	3.05
4900.00	10.00	10.00	4891.99	104.50	18.43	0.00	0.00	0.00	3.65
5000.00	10.00	10.00	4990.47	121.60	21.44	0.00	0.00	0.00	4.25
5100.00	10.00	10.00	5088.95	138.70	24.46	0.00	0.00	0.00	4.84
5200.00	10.00	10.00	5187.43	155.80	27.47	0.00	0.00	0.00	5.44
5300.00	10.00	10.00	5285.91	172.90	30.49	0.00	0.00	0.00	6.04
5400.00	10.00	10.00	5384.39	190.00	33.50	0.00	0.00	0.00	6.64
5500.00	10.00	10.00	5482.87	207.10	36.52	0.00	0.00	0.00	7.23
5600.00	10.00	10.00	5581.36	224.21	39.53	0.00	0.00	0.00	7.83
5700.00	10.00	10.00	5679.84	241.31	42.55	0.00	0.00	0.00	8.43
5800.00	10.00	10.00	5778.32	258.41	45.56	0.00	0.00	0.00	9.02
5900.00	10.00	10.00	5876.80	275.51	48.58	0.00	0.00	0.00	9.62
6000.00	10.00	10.00	5975.28	292.61	51.59	0.00	0.00	0.00	10.22
6100.00	10.00	10.00	6073.76	309.71	54.61	0.00	0.00	0.00	10.82
6200.00	10.00	10.00	6172.24	326.81	57.63	0.00	0.00	0.00	11.41
6300.00	10.00	10.00	6270.72	343.91	60.64	0.00	0.00	0.00	12.01
6400.00	10.00	10.00	6369.20	361.01	63.66	0.00	0.00	0.00	12.61
6500.00	10.00	10.00	6467.68	378.11	66.67	0.00	0.00	0.00	13.21
6600.00	10.00	10.00	6566.16	395.22	69.69	0.00	0.00	0.00	13.80
6700.00	10.00	10.00	6664.64	412.32	72.70	0.00	0.00	0.00	14.40
6800.00	10.00	10.00	6763.12	429.42	75.72	0.00	0.00	0.00	15.00
6900.00	10.00	10.00	6861.61	446.52	78.73	0.00	0.00	0.00	15.59
7000.00	10.00	10.00	6960.09	463.62	81.75	0.00	0.00	0.00	16.19
7100.00	10.00	10.00	7058.57	480.72	84.76	0.00	0.00	0.00	16.79
7200.00	10.00	10.00	7157.05	497.82	87.78	0.00	0.00	0.00	17.39
7300.00	10.00	10.00	7255.53	514.92	90.79	0.00	0.00	0.00	17.98
7400.00	10.00	10.00	7354.01	532.02	93.81	0.00	0.00	0.00	18.58
7500.00	10.00	10.00	7452.49	549.12	96.83	0.00	0.00	0.00	19.18
7600.00	10.00	10.00	7550.97	566.23	99.84	0.00	0.00	0.00	19.78
7700.00	10.00	10.00	7649.45	583.33	102.86	0.00	0.00	0.00	20.37
7800.00	10.00	10.00	7747.93	600.43	105.87	0.00	0.00	0.00	20.97
7900.00	10.00	10.00	7846.41	617.53	108.89	0.00	0.00	0.00	21.57
8000.00	10.00	10.00	7944.89	634.63	111.90	0.00	0.00	0.00	22.16
8100.00	10.00	10.00	8043.37	651.73	114.92	0.00	0.00	0.00	22.76
8200.00	10.00	10.00	8141.86	668.83	117.93	0.00	0.00	0.00	23.36
8300.00	10.00	10.00	8240.34	685.93	120.95	0.00	0.00	0.00	23.96
8400.00	10.00	10.00	8338.82	703.03	123.96	0.00	0.00	0.00	24.55
8500.00	10.00	10.00	8437.30	720.13	126.98	0.00	0.00	0.00	25.15
8600.00	10.00	10.00	8535.78	737.24	129.99	0.00	0.00	0.00	25.75
8700.00	10.00	10.00	8634.26	754.34	133.01	0.00	0.00	0.00	26.35
8800.00	10.00	10.00	8732.74	771.44	136.03	0.00	0.00	0.00	26.94
8900.00	10.00	10.00	8831.22	788.54	139.04	0.00	0.00	0.00	27.54
9000.00	10.00	10.00	8929.70	805.64	142.06	0.00	0.00	0.00	28.14

9100.00	10.00	10.00	9028.18	822.74	145.07	0.00	0.00	0.00	28.73
9200.00	10.00	10.00	9126.66	839.84	148.09	0.00	0.00	0.00	29.33
9300.00	10.00	10.00	9225.14	856.94	151.10	0.00	0.00	0.00	29.93
9400.00	10.00	10.00	9323.62	874.04	154.12	0.00	0.00	0.00	30.53
9500.00	10.00	10.00	9422.11	891.14	157.13	0.00	0.00	0.00	31.12
9600.00	10.00	10.00	9520.59	908.25	160.15	0.00	0.00	0.00	31.72
9700.00	10.00	10.00	9619.07	925.35	163.16	0.00	0.00	0.00	32.32
9800.00	10.00	10.00	9717.55	942.45	166.18	0.00	0.00	0.00	32.91
9867.57	10.00	10.00	9784.09	954.00	168.22	0.00	0.00	0.00	33.32
9900.00	9.35	10.00	9816.06	959.37	169.16	2.00	-2.00	0.00	33.51
10000.00	7.35	10.00	9914.99	973.67	171.68	2.00	-2.00	0.00	34.01
10100.00	5.35	10.00	10014.38	984.57	173.61	2.00	-2.00	0.00	34.39
10200.00	3.35	10.00	10114.08	992.04	174.92	2.00	-2.00	0.00	34.65
10300.00	1.35	10.00	10213.99	996.08	175.64	2.00	-2.00	0.00	34.79
10367.57	0.00	0.00	10281.56	996.86	175.77	2.00	-2.00	0.00	34.82
10400.00	0.00	0.00	10313.99	996.86	175.77	0.00	0.00	0.00	34.82
10500.00	0.00	0.00	10413.99	996.86	175.77	0.00	0.00	0.00	34.82
10600.00	0.00	0.00	10513.99	996.86	175.77	0.00	0.00	0.00	34.82
10617.57	0.00	0.00	10531.56	996.86	175.77	0.00	0.00	0.00	34.82
10625.00	0.89	270.00	10538.99	996.86	175.72	12.00	12.00	0.00	34.87
10650.00	3.89	270.00	10563.96	996.86	174.67	12.00	12.00	0.00	35.89
10675.00	6.89	270.00	10588.85	996.86	172.32	12.00	12.00	0.00	38.19
10700.00	9.89	270.00	10613.58	996.86	168.68	12.00	12.00	0.00	41.76
10725.00	12.89	270.00	10638.08	996.86	163.74	12.00	12.00	0.00	46.59
10750.00	15.89	270.00	10662.30	996.86	157.53	12.00	12.00	0.00	52.67
10775.00	18.89	270.00	10686.15	996.86	150.05	12.00	12.00	0.00	59.98
10800.00	21.89	270.00	10709.58	996.86	141.34	12.00	12.00	0.00	68.50
10825.00	24.89	270.00	10732.52	996.86	131.42	12.00	12.00	0.00	78.20
10850.00	27.89	270.00	10754.91	996.86	120.31	12.00	12.00	0.00	89.07
10875.00	30.89	270.00	10776.69	996.86	108.04	12.00	12.00	0.00	101.07
10900.00	33.89	270.00	10797.80	996.86	94.65	12.00	12.00	0.00	114.17
10925.00	36.89	270.00	10818.18	996.86	80.17	12.00	12.00	0.00	128.34
10950.00	39.89	270.00	10837.77	996.86	64.65	12.00	12.00	0.00	143.52
10975.00	42.89	270.00	10856.53	996.86	48.12	12.00	12.00	0.00	159.69
11000.00	45.89	270.00	10874.39	996.86	30.63	12.00	12.00	0.00	176.80
11025.00	48.89	270.00	10891.31	996.85	12.24	12.00	12.00	0.00	194.80
11050.00	51.89	270.00	10907.25	996.85	-7.02	12.00	12.00	0.00	213.63
11075.00	54.89	270.00	10922.15	996.85	-27.09	12.00	12.00	0.00	233.26
11100.00	57.89	270.00	10935.99	996.85	-47.91	12.00	12.00	0.00	253.63
11125.00	60.89	270.00	10948.72	996.85	-69.42	12.00	12.00	0.00	274.68
11150.00	63.89	270.00	10960.30	996.85	-91.57	12.00	12.00	0.00	296.34
11175.00	66.89	270.00	10970.71	996.85	-114.30	12.00	12.00	0.00	318.58
11200.00	69.89	270.00	10979.92	996.85	-137.54	12.00	12.00	0.00	341.31
11225.00	72.89	270.00	10987.89	996.84	-161.23	12.00	12.00	0.00	364.49
11250.00	75.89	270.00	10994.62	996.84	-185.31	12.00	12.00	0.00	388.04
11275.00	78.89	270.00	11000.08	996.84	-209.70	12.00	12.00	0.00	411.90
11300.00	81.89	270.00	11004.25	996.84	-234.35	12.00	12.00	0.00	436.01

11325.00	84.89	270.00	11007.12	996.84	-259.18	12.00	12.00	0.00	460.30
11350.00	87.89	270.00	11008.70	996.84	-284.12	12.00	12.00	0.00	484.71
11371.92	90.52	270.00	11009.00	996.83	-306.04	12.00	12.00	0.00	506.14
11400.00	90.52	270.00	11008.75	996.83	-334.12	0.00	0.00	0.00	533.61
11500.00	90.52	270.00	11007.84	996.83	-434.12	0.00	0.00	0.00	631.43
11600.00	90.52	270.00	11006.93	996.82	-534.11	0.00	0.00	0.00	729.25
11700.00	90.52	270.00	11006.01	996.81	-634.11	0.00	0.00	0.00	827.07
11800.00	90.52	270.00	11005.10	996.81	-734.10	0.00	0.00	0.00	924.89
11900.00	90.52	270.00	11004.19	996.80	-834.10	0.00	0.00	0.00	1022.71
12000.00	90.52	270.00	11003.28	996.80	-934.09	0.00	0.00	0.00	1120.53
12100.00	90.52	270.00	11002.37	996.79	-1034.09	0.00	0.00	0.00	1218.35
12200.00	90.52	270.00	11001.46	996.78	-1134.09	0.00	0.00	0.00	1316.17
12300.00	90.52	270.00	11000.55	996.78	-1234.08	0.00	0.00	0.00	1413.99
12400.00	90.52	270.00	10999.64	996.77	-1334.08	0.00	0.00	0.00	1511.81
12500.00	90.52	270.00	10998.73	996.77	-1434.07	0.00	0.00	0.00	1609.63
12600.00	90.52	270.00	10997.82	996.76	-1534.07	0.00	0.00	0.00	1707.45
12700.00	90.52	270.00	10996.91	996.75	-1634.07	0.00	0.00	0.00	1805.27
12800.00	90.52	270.00	10996.00	996.75	-1734.06	0.00	0.00	0.00	1903.09
12900.00	90.52	270.00	10995.09	996.74	-1834.06	0.00	0.00	0.00	2000.91
13000.00	90.52	270.00	10994.18	996.74	-1934.05	0.00	0.00	0.00	2098.73
13100.00	90.52	270.00	10993.27	996.73	-2034.05	0.00	0.00	0.00	2196.55
13200.00	90.52	270.00	10992.36	996.72	-2134.04	0.00	0.00	0.00	2294.37
13300.00	90.52	270.00	10991.45	996.72	-2234.04	0.00	0.00	0.00	2392.19
13400.00	90.52	270.00	10990.54	996.71	-2334.04	0.00	0.00	0.00	2490.01
13500.00	90.52	270.00	10989.63	996.70	-2434.03	0.00	0.00	0.00	2587.83
13600.00	90.52	270.00	10988.72	996.70	-2534.03	0.00	0.00	0.00	2685.65
13700.00	90.52	270.00	10987.81	996.69	-2634.02	0.00	0.00	0.00	2783.47
13800.00	90.52	270.00	10986.90	996.69	-2734.02	0.00	0.00	0.00	2881.29
13900.00	90.52	270.00	10985.99	996.68	-2834.02	0.00	0.00	0.00	2979.11
14000.00	90.52	270.00	10985.08	996.67	-2934.01	0.00	0.00	0.00	3076.93
14100.00	90.52	270.00	10984.17	996.67	-3034.01	0.00	0.00	0.00	3174.75
14200.00	90.52	270.00	10983.25	996.66	-3134.00	0.00	0.00	0.00	3272.57
14300.00	90.52	270.00	10982.34	996.66	-3234.00	0.00	0.00	0.00	3370.39
14400.00	90.52	270.00	10981.43	996.65	-3334.00	0.00	0.00	0.00	3468.21
14500.00	90.52	270.00	10980.52	996.64	-3433.99	0.00	0.00	0.00	3566.03
14600.00	90.52	270.00	10979.61	996.64	-3533.99	0.00	0.00	0.00	3663.85
14700.00	90.52	270.00	10978.70	996.63	-3633.98	0.00	0.00	0.00	3761.67
14800.00	90.52	270.00	10977.79	996.62	-3733.98	0.00	0.00	0.00	3859.49
14900.00	90.52	270.00	10976.88	996.62	-3833.97	0.00	0.00	0.00	3957.31
15000.00	90.52	270.00	10975.97	996.61	-3933.97	0.00	0.00	0.00	4055.13
15100.00	90.52	270.00	10975.06	996.61	-4033.97	0.00	0.00	0.00	4152.95
15200.00	90.52	270.00	10974.15	996.60	-4133.96	0.00	0.00	0.00	4250.77
15300.00	90.52	270.00	10973.24	996.59	-4233.96	0.00	0.00	0.00	4348.59
15400.00	90.52	270.00	10972.33	996.59	-4333.95	0.00	0.00	0.00	4446.41
15500.00	90.52	270.00	10971.42	996.58	-4433.95	0.00	0.00	0.00	4544.23
15600.00	90.52	270.00	10970.51	996.58	-4533.95	0.00	0.00	0.00	4642.05
15700.00	90.52	270.00	10969.60	996.57	-4633.94	0.00	0.00	0.00	4739.87

15765.78	90.52	270.00	10969.00	996.57	-4699.72	0.00	0.00	0.00	4804.22

13-5/8" 5M BOPE & Closed Loop Equipment Schematic



NOTES REGARDING BLOWOUT PREVENTERS

Devon Energy Production Company, L.P.
Apache 24 Fed 12H

1. Drilling Nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.

2. Wear ring will be properly installed in head.

3. Blowout preventer and all associated filings will be in operable condition to withstand a minimum of 5000 psi working pressure.

4. All fittings will be flanged.

5. A fill bore safety valve tested to a minimum of 5000 psi WP with proper thread connections will be available on the rotary rig floor at all times.

6. All choke lines will be anchored to prevent movement.

7. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.

8. Will maintain a kelly cock attached to the kelly.

9. Hand wheels and wrenches will be properly installed and tested for safe operation.

10. Hydraulic floor control for blowout preventer will be located as near in proximity to driller's controls as possible.

11. All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.

Midwest Hose
& Specialty, Inc.

INTERNAL HYDROSTATIC TEST CERTIFICATE

Customer:	Customer P.O. Number:
ODESSA	195335

HOSE SPECIFICATIONS

Type: CHOKE HOSE MUD / API 7K		Hose Length: 35 FT	
I.D. 3	INCHES	O.D. 4.70	INCHES

WORKING PRESSURE		TEST PRESSURE		BURST PRESSURE	
10,000	PSI	15,000	PSI	N/A	PSI

COUPLINGS

Part Number	Stem Lot Number	Ferrule Lot Number
E3.0X64WB	1Q11LOT1	120277
E3.0X64WB	1Q11LOT1	120277

Type of Coupling:	Die Size:
SWAGE-IT	5.25

PROCEDURE

Hose assembly pressure tested with water at ambient temperature.

TIME HELD AT TEST PRESSURE		ACTUAL BURST PRESSURE:	
4	MIN.	N/A	PSI

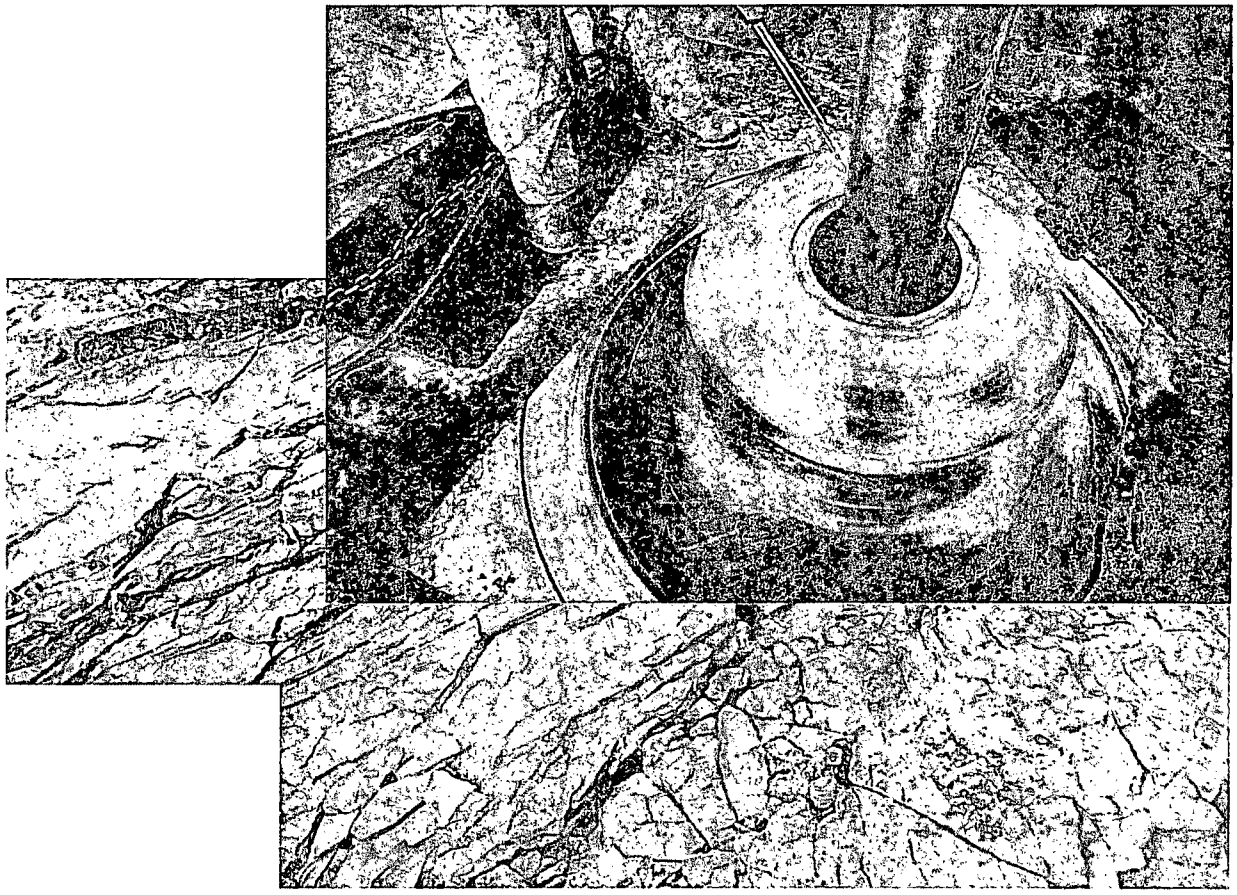
Hose Assembly Serial Number:	Hose Serial Number:
214810	7930

Comments:

Date:	Tested:	Approved:
8/26/2013		

devon

Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
June 2010

I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

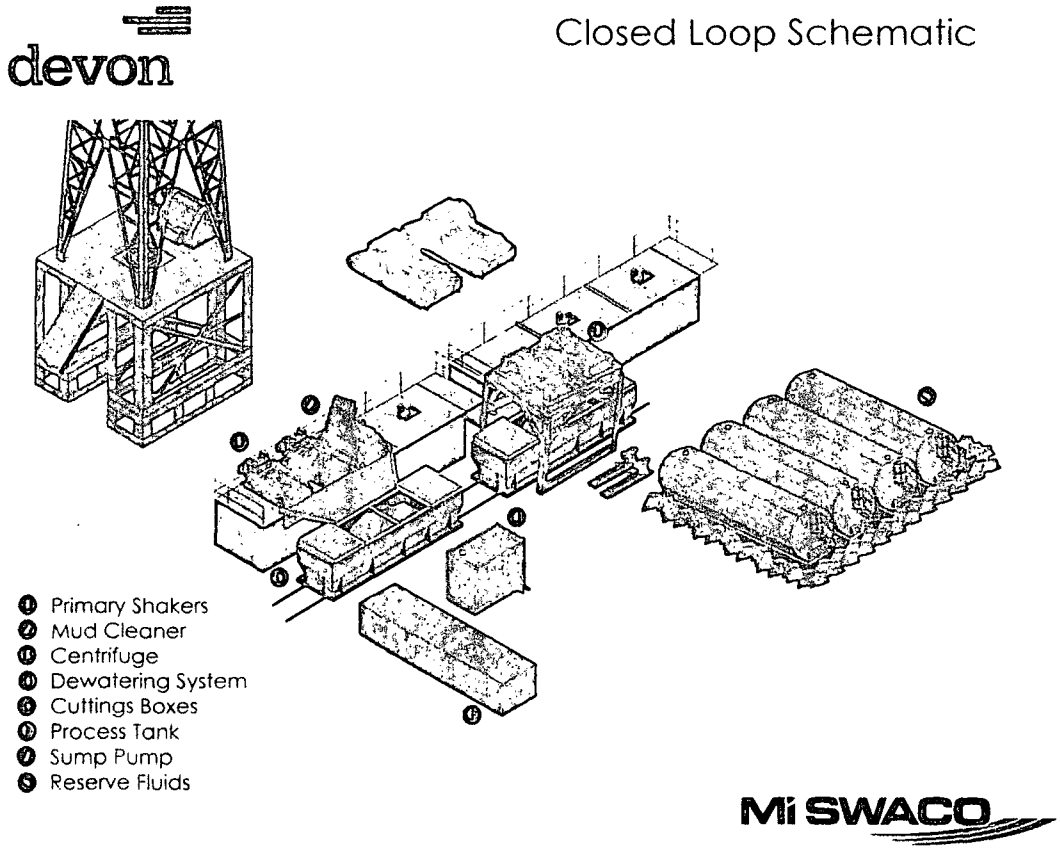
Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

II. Operations and Maintenance Plan

Primary Shakers: The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

Mud Cleaner: The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.



Centrifuges: The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

Dewatering System: The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

Cuttings Boxes: Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

Process Tank: (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

Sump and Sump Pump: The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

Reserve Fluids (Tank Farm): A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

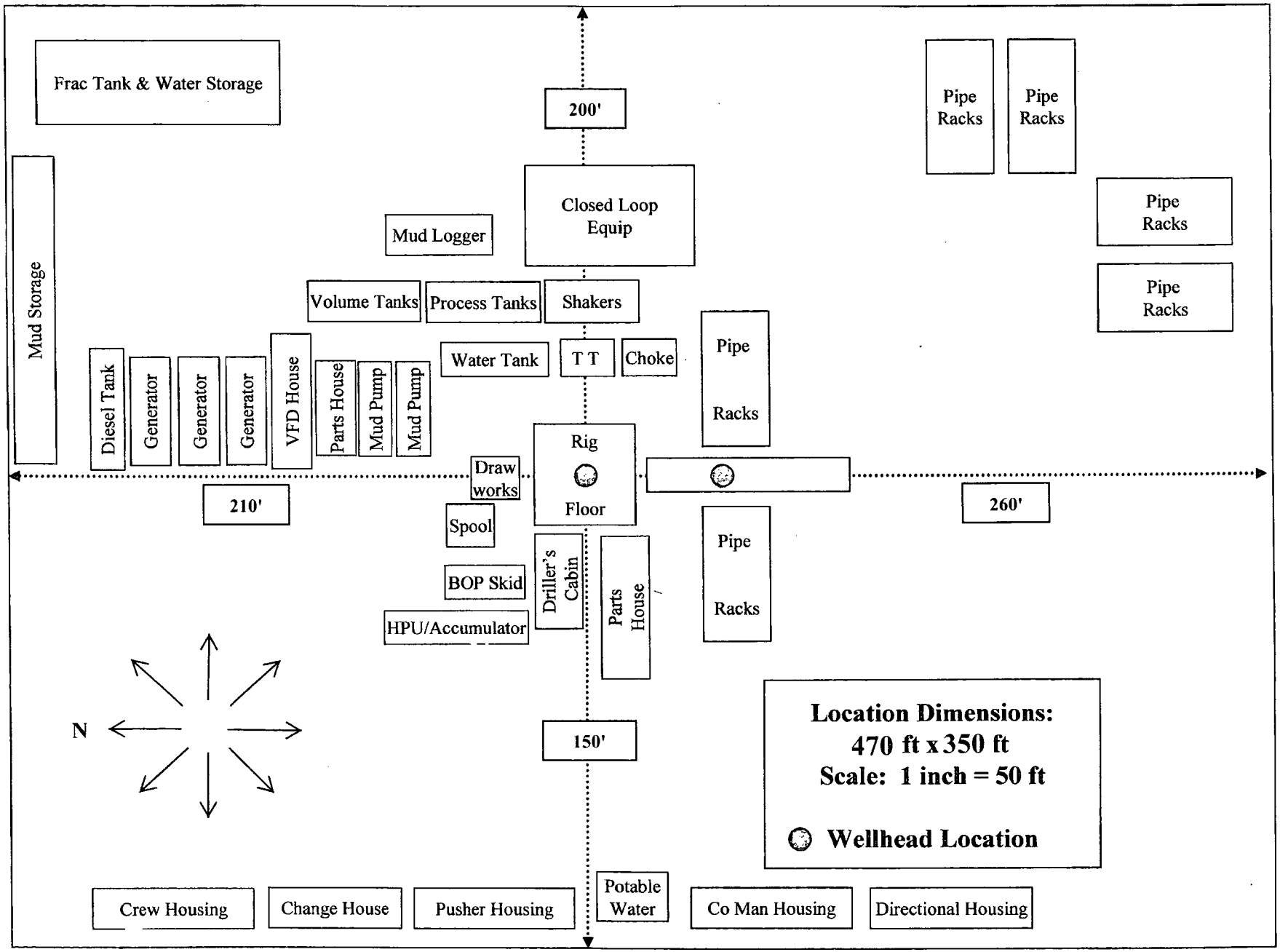
These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

III. Closure Plan

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.

H&P Flex Rig Location Layout
2 Well Pad



Devon Energy Center
333 West Sheridan Avenue
Oklahoma City, Oklahoma 73102-5015

Hydrogen Sulfide (H_2S) Contingency Plan

For

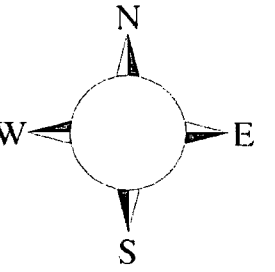
Apache 24 Fed 13H

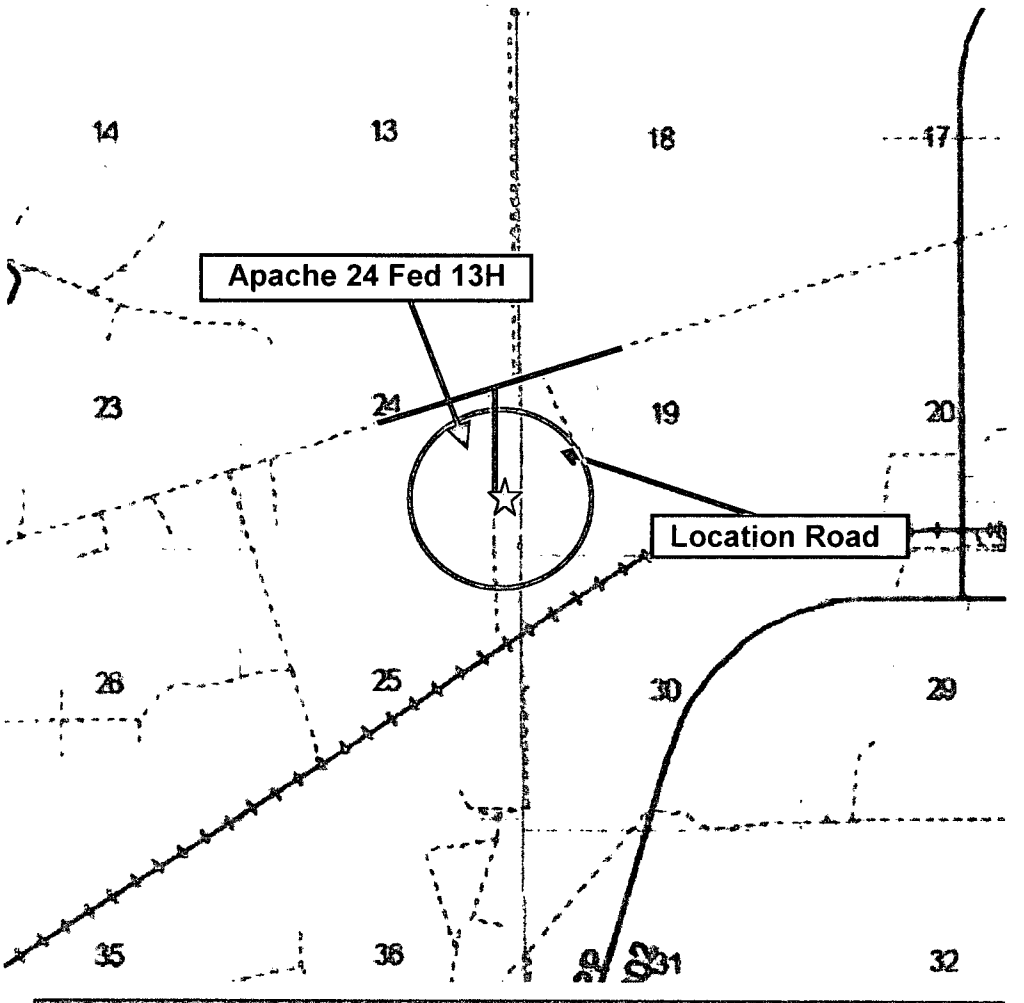
Sec-24, T-22S R-30E
970' FSL & 330 FEL
LAT. = 32.3729987'N (NAD83)
LONG = 103.8266624'W

Eddy County NM

Apache 24 Fed 13H

This is an open drilling site. H_2S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H_2S, including warning signs, wind indicators and H_2S monitor.





Assumed 100 ppm 3000' ( )
100 ppm H2S concentration shall trigger activation of this plan.

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road, West then Northwest on lease road. Crews should then block entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'
100 ppm H_2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must

- **Isolate the area and prevent entry by other persons into the 100 ppm ROE.**
- **Evacuate any public places encompassed by the 100 ppm ROE.**
- **Be equipped with H_2S monitors and air packs in order to control the release.**
- **Use the "buddy system" to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
  - **Detection of H_2S, and**
  - **Measures for protection against the gas,**
  - **Equipment used for protection and emergency 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 (SO_2). 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 SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Devon Energy Corp. 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. Devon Energy Corp. Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H_2S) 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 metal components. If high tensile tubular 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 Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H_2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H_2S.

1. **Well Control Equipment**

   A. Flare line

   B. Choke manifold – (with remotely operated choke)

   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit

   D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

   E. Mud/Gas Separator

2. **Protective equipment for essential personnel:**

   A. 30-minute SCBA units located in the doghouse and at briefing areas, as indicated on well site diagram. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. **H_2S detection and monitoring equipment:**

   A. Portable H_2S monitors positioned on location for best coverage and response. These unites have warning lights and audible sirens when H_2S levels of 20 PPM are reached. These units are usually capable of detecting SO_2, which is a byproduct of burning H_2S.

4. **Visual warning systems:**

A. Wind direction indicators as shown on well site diagram

B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

5. Mud program:

A. The mud program has been designed to minimize the volume of H_2S circulated to surface. Proper mud weight, safe drilling practices and the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.

6. Metallurgy:

A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H_2S trim.

B. All elastomers used for packing and seals shall be H_2S trim.

7. Communication:

A. Radio communications in company vehicles including cellular telephones and 2-way radio

B. Land line (telephone) communications at Office

8. Well testing:

A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H_2S environment will use the closed chamber method of testing.

B. There will be no drill stem testing.

Devon Energy Corp. Company Call List

Artesia (575)	Cellular	Office	Home
Foreman – Robert Bell	748-7448	748-0178	746-2991
Asst. Foreman –Tommy Polly	748-5290	748-0165	748-2846
Don Mayberry	748-5235	748-0164	746-4945
Montral Walker	390-5182	748-0193	(936) 414-6246
Engineer – Marcos Ortiz	(405) 317-0666	(405) 552-8152	(405) 381-4350

Agency Call List

Lea County (575)

Hobbs

Lea County Communication Authority	393-3981
State Police	392-5588
City Police	397-9265
Sheriff's Office	393-2515
Ambulance	911
Fire Department	397-9308
LEPC (Local Emergency Planning Committee)	393-2870
NMOCD	393-6161
US Bureau of Land Management	393-3612

Eddy County (575)

Carlsbad

State Police	885-3137
City Police	885-2111
Sheriff's Office	887-7551
Ambulance	911
Fire Department	885-2111
LEPC (Local Emergency Planning Committee)	887-3798
US Bureau of Land Management	887-6544
NM Emergency Response Commission (Santa Fe)	(505) 476-9600
24 HR	(505) 827-9126
National Emergency Response Center (Washington, DC)	(800) 424-8802

Emergency Services

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

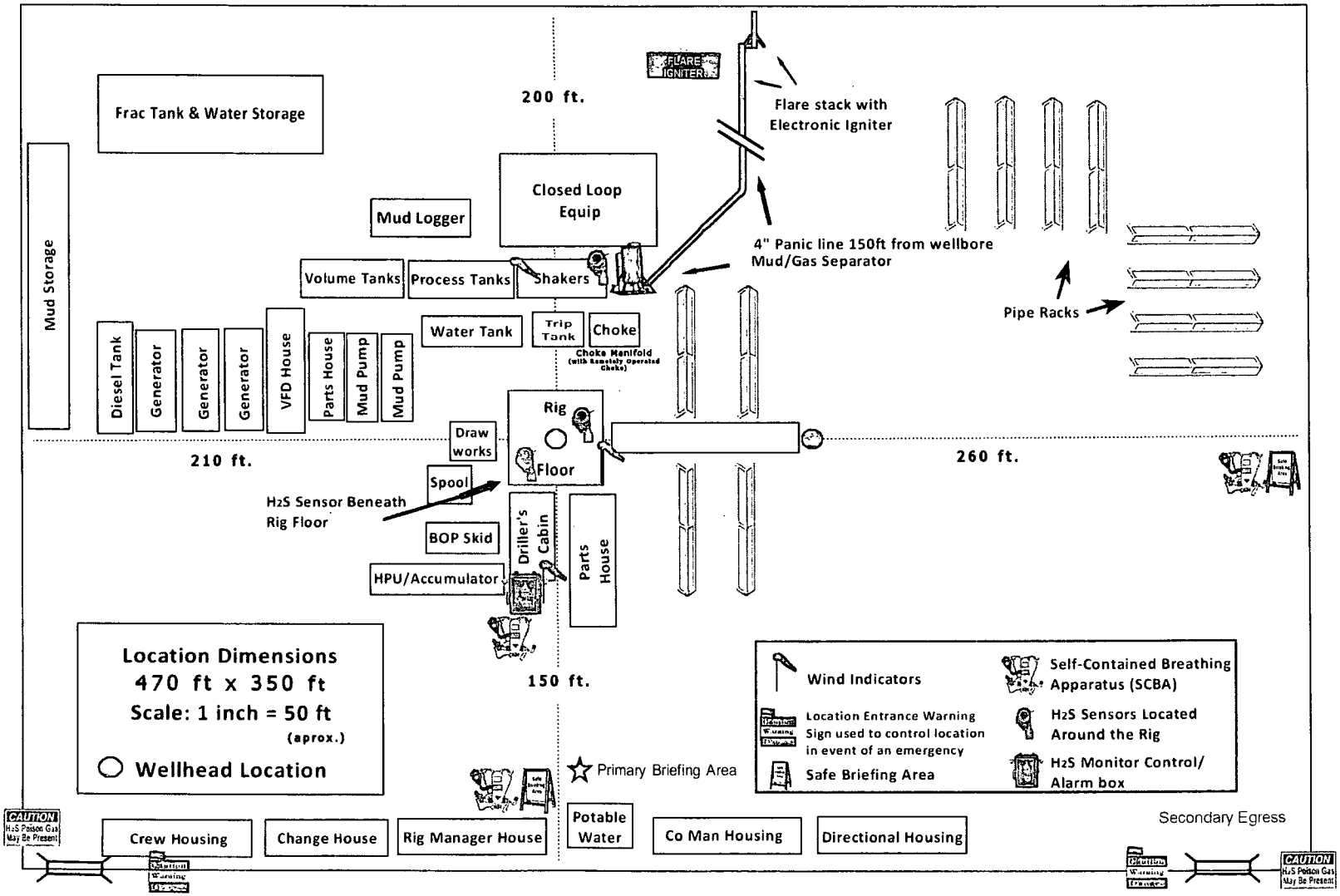
Give GPS position:

Native Air – Emergency Helicopter – Hobbs	(575) 392-6429
Flight For Life - Lubbock, TX	(806) 743-9911
Aerocare - Lubbock, TX	(806) 747-8923
Med Flight Air Amb - Albuquerque, NM	(575) 842-4433
Lifeguard Air Med Svc. Albuquerque, NM	(575) 272-3115

Prepared in conjunction with
Dave Small

SHARP COMMUNICATIONS & CONSULTING, LLC

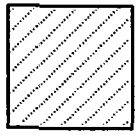
Devon Petroleum - Well Pad
Rig Location Layout
Safety Equipment Location



devon

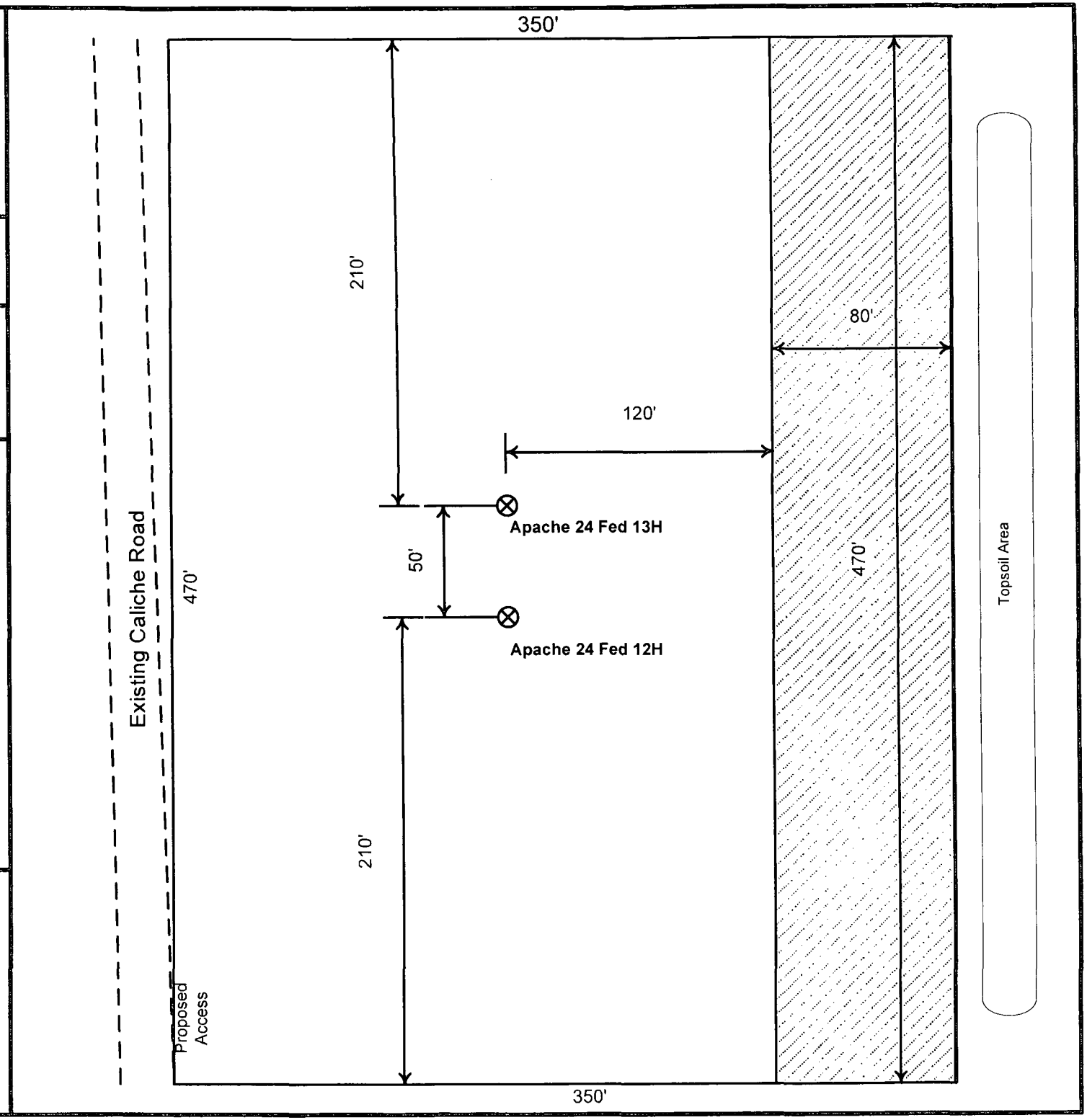
Proposed Interim Site Reclamation

Devon Energy Production Co.
Apache 24 Fed 12H, & 13H
Sec.24-T22S-R30E
Eddy County, NM

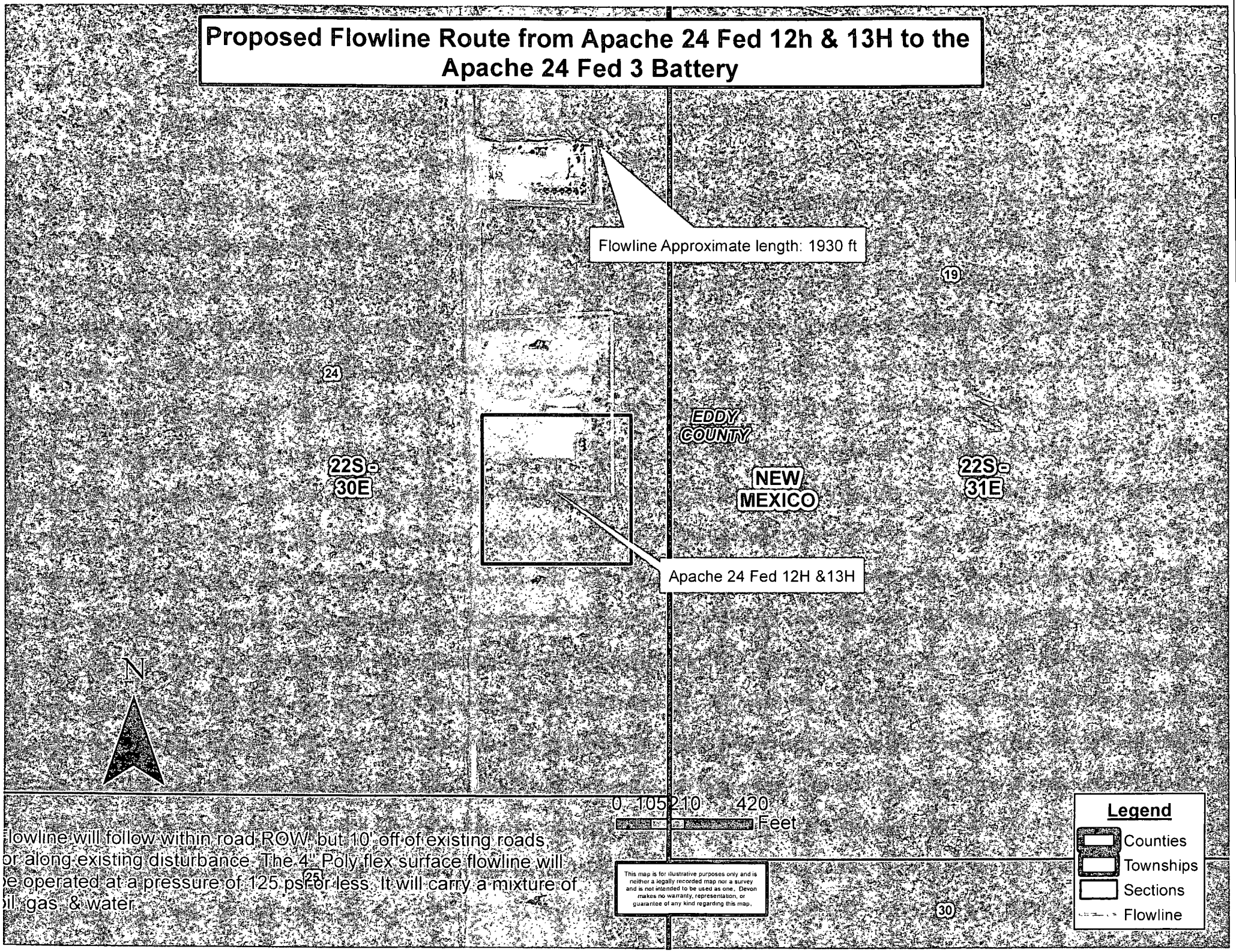


Proposed Reclamation Area

Scale: 1in = 60ft.



Proposed Flowline Route from Apache 24 Fed 12h & 13H to the Apache 24 Fed 3 Battery



lowline will follow within road ROW but 10' off of existing roads or along existing disturbance. The 4" Poly flex surface flowline will e operated at a pressure of 125 psi or less. It will carry a mixture of il, gas, & water.

SURFACE USE PLAN

Devon Energy Production Company, L.P.
Apache 24 Fed 13H

1. **Existing Roads:**
   a. The well site and elevation plat for the proposed well are reflected on the "Site Map". The well was staked by Madron Surveying, Inc.
   b. All roads into the location are depicted on the "Vicinity Map". The operator will repair pot holes, clear ditches, repair the crown, etc. All existing structures on the entire access route such as cattle guards, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.
   c. Directions to Location: See "Site Map".

2. **New or Reconstructed Access Roads:**
   a. No new access road will be constructed.
   b. No cattle guards, grates or fence cuts will be required. No turnouts are planned.

3. **Location of Existing Wells:**
   The attached "One Mile Radius Map" shows all existing and proposed wells within a one-mile radius of the proposed location.

4. **Location of Existing and/or Proposed Production Facilities:**
   a. In the event the well is found productive, the Apache 24 Fed 3 tank battery would be utilized and shared, and the necessary production equipment will be installed at the well site. The facility is located in Sec 24, T22S, R30E. See attached "Proposed Flowline Route" map.
   b. If necessary, the well will be operated by means of an electric prime mover. If electric power poles are needed, a plat and a sundry notice will be filed with your office.
   c. All flow lines will adhere to API standards.
   d. If the well is productive, rehabilitation plans are as follows:
      i. A closed loop system will be utilized.
      ii. The original topsoil from the well site will be returned to the location. The drill site will then be contoured as close as possible to the original state.

5. **Location and Types of Water Supply:**
   This location will be drilled using a combination of water mud systems (outlined in the Drilling Program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck using the existing and proposed roads described and depicted on the "Vicinity Map". On occasion, water will be obtained from a pre-existing water well, running a pump directly to the drill rig. In cases where a poly pipeline is used to transport water for drilling purposes, proper authorizations will be secured. If a poly pipeline is used, the size, distance, and map showing route will be provided to the BLM via sundry notice.

6. **Construction Materials:**

Obtaining caliche: One primary way of obtaining caliche to build locations and roads will be by "turning over" the location. This means caliche will be obtained from the actual well site. Actual amounts will vary for each pad. The procedure below has been approved by BLM personnel:

a. The top 6 inches of topsoil is pushed off and stockpiled along the side of the location.
b. Subsoil is removed and stockpiled within the surveyed well pad.
c. When caliche is found, material will be stock piled on site to build the location and road.
d. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
e. Once well is drilled, the stock piled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced.
f. Neither caliche, nor subsoil will be stock piled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in the Well Site Layout or survey plat.

In the event that no caliche is found onsite, caliche will be hauled in from a BLM approved caliche pit or other established mineral pit. A BLM mineral material permit will be acquired prior to obtaining any mineral material from BLM pits or land.

7. **Methods of Handling Waste Material:**

a. Drill cuttings will be safely contained in a closed loop system and disposed of properly at a NMOCD approved disposal site.
b. All trash, junk and other waste material will be contained in trash cages or trash bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary landfill.
c. The supplier will pick up salts remaining after completion of well, including broken sacks.
d. A Porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
e. Remaining drilling fluids will be sent to a closed loop system. Water produced during completion will be put into a closed loop system. Oil and condensate produced will be put into a storage tank and sold.
f. Disposal of fluids to be transported by the following companies:
    i. American Production Service Inc, Odessa TX
    ii. Gandy Corporation, Lovington NM
    iii. I & W Inc, Loco Hill NM
    iv. Jims Water Service of Co Inc, Denver CO

8. **Ancillary Facilities:** No campsite or other facilities will be constructed as a result of this well.

9. **Well Site Layout**

a. The Rig Location Layout attachment shows the proposed well site layout and pad dimensions.
b. The Rig Location Layout attachment proposes location of sump pits and living facilities.
c. Mud pits in the active circulating system will be steel pits.
d. A closed loop system will be utilized.
e. Devon has provided a copy of the Design Plan to the BLM.

10. **Plans for Surface Reclamation:**
    a. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The original top soil will again be returned to the pad and contoured, as close as possible, to the original topography.
    b. The location and road will be rehabilitated as recommended by the BLM.
    c. If the well is deemed commercially productive, caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography.
    d. All disturbed areas not needed for active support of production operations will undergo interim reclamation. The portions of the cleared well site not needed for operational and safety purposes will be recontoured to a final or intermediate contour that blends with the surrounding topography as much as possible. Topsoil will be respread over areas not needed for all-weather operations.

11. **Surface Ownership**
    a. The surface is owned by the US Government and is administered by the Bureau of Land Management. The surface is multiple use with the primary uses of the region for the grazing of livestock and the production of oil and gas.
    b. The proposed road routes and the surface location will be restored as directed by the BLM.

12. **Other Information:**
    a. The area surrounding the well site is grassland. The topsoil is very sandy in nature. The vegetation is moderately sparse with native prairie grass, sage bush, yucca and miscellaneous weeds. No wildlife was observed but it is likely that deer, rabbits, coyotes, and rodents traverse the area.
    b. There is no permanent or live water in the general proximity of the location.
    c. There are no dwellings within 2 miles of location.
    d. A Cultural Resources Examination will be completed by the Permian Basin Cultural Resource Fund in lieu of being required to conduct a Class III Survey for cultural resources associated with their project within the BLM office in Carlsbad, New Mexico.

13. **Bond Coverage:** CO-1104 & NMB-000801. Bond Coverage is Nationwide.

Operators Representative:

The Devon Energy Production Company, L.P. representatives responsible for ensuring compliance of the surface use plan are listed below.

Kim Henderson - Operations Engineer
Devon Energy Production Company, L.P.
333 W. Sheridan
Oklahoma City, OK 73102-5010
(405) 552-6505 (office)
(405) 479-3869 (Cellular)

Don Mayberry - Superintendent
Devon Energy Production Company, L.P.
Post Office Box 250
Artesia, NM 88211-0250
(575) 748-3371 (office)
(575) 746-4945 (home)

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Devon Energy Production Company, L.P.**
LEASE NO.:	**NMNM-89051**
WELL NAME & NO.:	**Apache 24 Fed 13H**
SURFACE HOLE FOOTAGE:	**0970' FSL & 0330' FEL**
BOTTOM HOLE FOOTAGE	**1980' FSL & 0330' FWL**
LOCATION:	**Section 24, T. 22 S., R 30 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.

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☐ **Permit Expiration**
☐ **Archaeology, Paleontology, and Historical Sites**
☐ **Noxious Weeds**
☒ **Special Requirements**
- Lesser Prairie-Chicken Timing Stipulations
- Ground-level Abandoned Well Marker
- Secretary's Potash

☐ **Construction**
- Notification
- Topsoil
- Closed Loop System
- Federal Mineral Material Pits
- Well Pads
- Roads

☐ **Road Section Diagram**
☒ **Drilling**
- Cement Requirements
- WIPP
- R-111-P-Potash
- H2S Requirements
- Logging Requirements
- Waste Material and Fluids

☐ **Production (Post Drilling)**
- Well Structures & Facilities
- Pipelines

☐ **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)

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.

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) 234-5909 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 strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area 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. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. 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-five (25) 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.

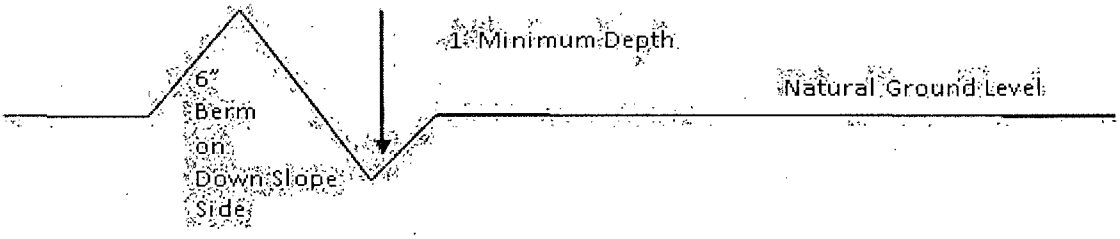
Ditching
Ditching shall be required on both sides of the road.

Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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

Cattleguards
An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route 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 cattleguards that are in place and are utilized during lease operations.

Fence Requirement
Where entry is granted 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 fences.

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

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

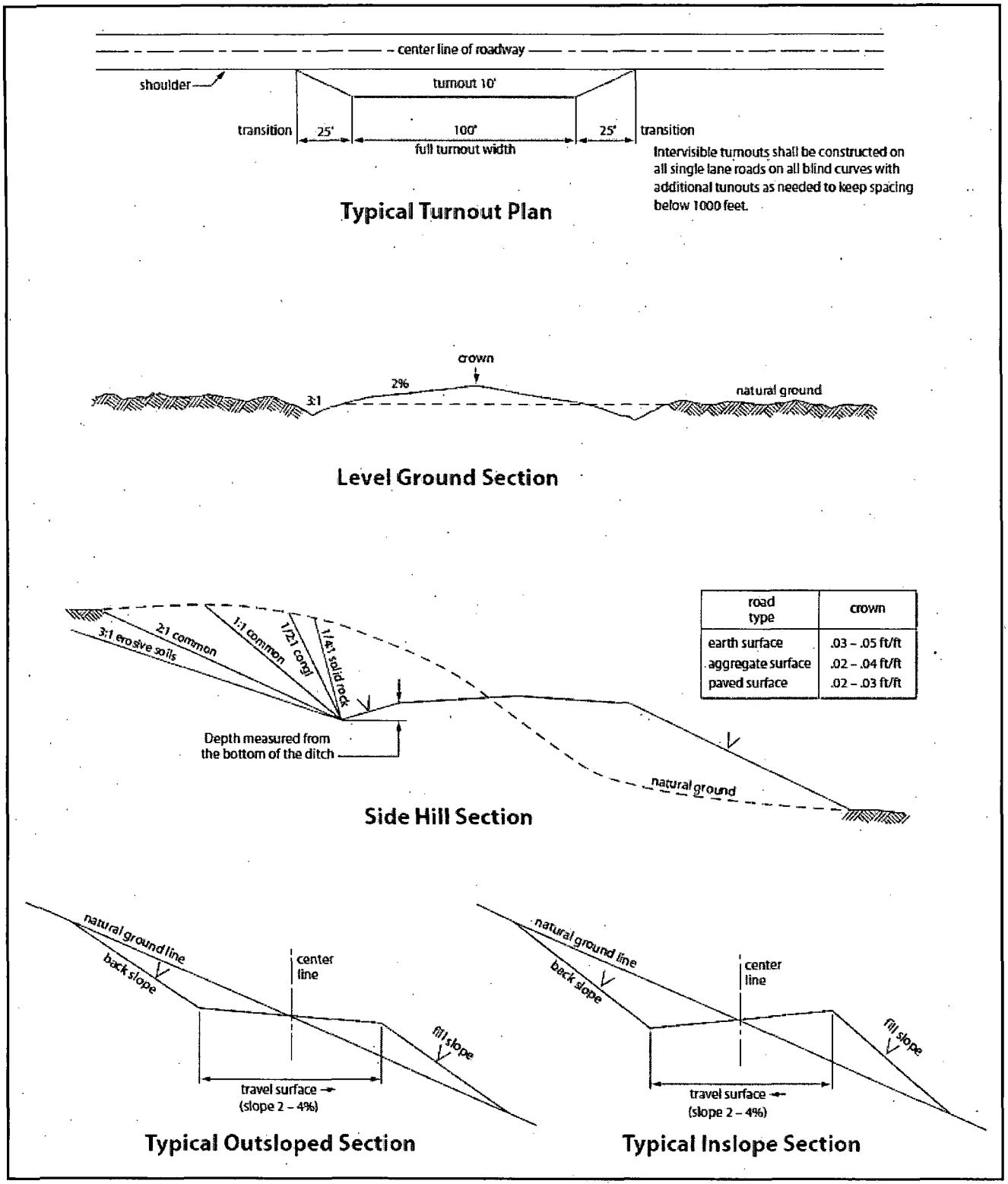


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

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

1. **Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, 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 program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. 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. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. 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.

WIPP
R-111-P Potash
Possibility of water flows in the Salado and Castile.
Possibility of lost circulation in the Rustler, Red Beds, and Delaware.
Abnormal pressures may be encountered when penetrating the 3rd Bone Spring Sand and Wolfcamp.

1. The **13-3/8** inch surface casing shall be set at approximately **580** feet (**in a competent bed <u>below the Magenta Dolomite</u>, which is a <u>Member of the Rustler</u>, and if salt is encountered, set casing at least 25 feet above the salt**) and cemented to the surface. **Fresh water mud to be used to setting depth.**

    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.

Formation below the 13-3/8" 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 and the mud weight for the bottom of the hole. Report results to BLM office.

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

Option #1:

☒ 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 potash.**

Option #2:

Operator has proposed DV tool at depth of 590', but with the change in casing depth this is no longer acceptable. Operator will adjust cement proportionately according to the depth change. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

a. First stage to DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

b. Second stage above DV tool:

☒ 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 potash. Excess calculates to 2% - Additional cement may be required.**

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 through the curve and a minimum of one every other joint.

3. The minimum required fill of cement behind the **7** inch production casing is:

Option #1:

☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

Option #2:

Operator has proposed DV tool at depth of 5450', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.

a. First stage to DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

b. Second stage above DV tool:

☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Excess calculates to 17% - Additional cement may be required. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

Formation below the 7" 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 and the mud weight for the bottom of the hole. Report results to BLM office.

4. The minimum required fill of cement behind the **4-1/2** inch production Liner is:

☒ Cement as proposed by operator. Operator shall provide method of verification.

5. 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.

6. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

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. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. 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.**

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

    a. In potash areas, 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. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

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

e. 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.**

f. 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. This test shall be performed prior to the test at full stack pressure.

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.

F. WIPP Requirements

The proposed well is located within 330' of the WIPP Land Withdrawal Area boundary. As a result, Devon Energy Production Company is required to submit daily drilling reports, logs and deviation survey information to the Bureau of Land Management and the Department of Energy per requirements of the Joint Powers Agreement until a total vertical depth of 7,000 feet is reached. These reports will have at a minimum the rate of penetration and a clearly marked section showing the deviation for each 500 foot interval. Operator may be required to do more frequent deviation surveys based on the daily information submitted and may be required to take other corrective measures. Information from this well will be included in the Quarterly Drilling Report. Information will also be provided to the New Mexico Oil Conservation Division after drilling activities have been completed. Upon completion of the well, the operator shall submit a complete directional survey. Any future entry into the well for purposes of completing additional drilling will require supplemental information.

Devon Energy Production Company can email the required information to Mr. Melvin Balderrama at Melvin.Balderama@wipp.ws or Mr. J. Neatherlin at Jimmy.Neatherlin@wipp.ws fax to his attention at 575-234-6062.

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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.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures
Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the

largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

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** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. PIPELINES

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the application (Grant, Sundry Notice, APD) and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
b. Activities of other parties including, but not limited to:
    (1) Land clearing.
    (2) Earth-disturbing and earth-moving work.
    (3) Blasting.
    (4) Vandalism and sabotage.
c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars ($1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of **20** feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline must be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline must be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline will be "snaked" around hummocks and dunes rather then suspended across these features.

9. The pipeline shall be buried with a minimum of **24** inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder 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 will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation

measures will be made by the authorized officer after consulting with the holder.

16. 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, powerline 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.

17. Surface pipelines must be less than or equal to 4 inches and a working pressure below 125 psi.

18. Special Stipulations:

a. **Lesser Prairie-Chicken:** Oil and gas activities 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 and 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. Normal vehicle use on existing roads will not be restricted.

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).

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.

(Insert Seed Mixture Here)

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:

Species	lb/acre
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