13-111

OCD Artesia

Form 3160-3
(August 2007)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NMNM-44594; NM 92767 TES 5/1/2013
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. Aquila 22 Fed Com 4H <39414>

2. Name of Operator Devon Energy Production, Company L. P. <6137>
9. API Well No. 30-015-41159

3a. Address 333 W. Sheridan, Oklahoma City, OK 73102
3b. Phone No. (include area code) 405-235-3611
10. Field and Pool, or Exploratory Lusk; Bone Spring W. <41480>

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface I 2030 FSL & 225 FEL
At proposed prod. zone M 660 FSL & 340 FWL
11. Sec., T. R. M. or Blk. and Survey or Area SEC 22 T19S R31E

14. Distance in miles and direction from nearest town or post office* Approximately 14 miles soustheast of Loco Hills, 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) ~~50'~~ 225'
16. No. of acres in lease 520 Ac
17. Spacing Unit dedicated to this well 160

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. See attached map 50'
19. Proposed Depth 9080' TVD 13,820' MD
20. BLM/BIA Bond No. on file CO-1104;NMB 000801

21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3542' GL
22. Approximate date work will start*
23. Estimated duration 45 days

24. Attachments — To be pad drilled with the Agasti 27 Federal 3H

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 Judy A. Barnett — Name (Printed/Typed) Judy A. Barnett — Date 10/23/2012

Title Regulatory Specialist

Approved by (Signature) /s/ Don Peterson — Name (Printed/Typed) — Date FEB 26 2013

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)

Rule 5.9 (30-015-26210) TES

Capitan Controlled Water Basin

(Instructions on page 2)

RECEIVED
FEB 28 2013
NMOCD ARTESIA

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

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

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

Form C-102
Revised October 15,2009
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-015-41159	41480	LUSK: BONE SPRING W.
4 Property Code	**5 Property Name**	**6 Well Number**
39414	AQUILA 22 FED COM	4H
7 OGRID No.	**8 Operator Name**	**9 Elevation**
6137	DEVON ENERGY PRODUCTION COMPANY, L.P.	3542.3

10 Surface Location

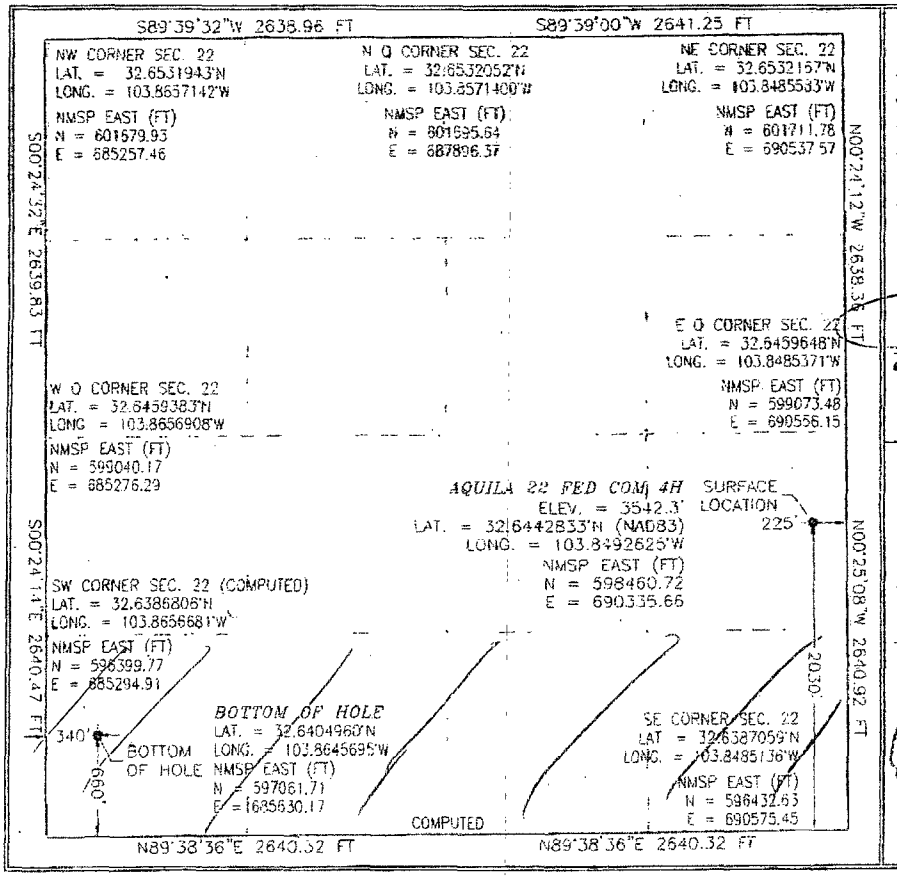
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	22	19 S	31 E		2030	SOUTH	225	EAST	EDDY

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
M	22	19 S	31 E		660	SOUTH	340	WEST	EDDY

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

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



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: 10/5/12

Printed Name
Judy A. Barnett Regulatory Specialist

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.

MAY 24, 2012
Date of Survey

Signature and Seal of Professional Surveyor

FILIMON F. JARAMILLO — NEW MEXICO — 12797 — REGISTERED LAND SURVEYOR

Certificate Number FILIMON F. JARAMILLO, PLS 12797
GARY L. JONES, NEW MEXICO 7977
BASIN SURVEYS, JOB NO. 1041

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 _23rd__ day of __October, 2012.
Printed Name: Judy A. Barnett
Signed Name:
Position Title: Regulatory Specialist
Address: 333 W. Sheridan, OKC OK 73102
Telephone: (405)-228-8699
Field Representative (if not above signatory):
Address (if different from above):
Telephone (if different from above):

DRILLING PROGRAM
Devon Energy Production Company, LP
Aquila 22 Fed Com 4H

Surface Location: 2030' FSL & 225' FEL, Unit I, Sec 22 T19S R31E, Eddy, NM
Bottom Hole Location: 660' FSL & 340' FWL, Unit M, Sec 22 T19S R31E, Eddy, NM

1. **Geologic Name of Surface Formation**

   a. Quaternary Alluvium

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

a.	Fresh Water	170'	
b.	Rustler	585'	Barren
c.	Salado	835'	Barren
d.	Tansil Dolomite	2240'	Barren
e.	Yates	2340'	Barren
f.	Seven Rivers	2560'	Barren
g.	Capitan	2675'	Barren
h.	B/Capitan	4100'	Barren
i.	Delaware	4540'	Oil
j.	Bone Spring	6955'	Oil
k.	1st Bone Spring Ss	8265'	Oil
l.	2nd Bone Spring Lime	8520'	Oil
m.	2nd Bone Spring Ss	8995'	Oil
n.	2nd Bone Spring Upr Ss	9035'	Oil
o.	2nd Bone Sring Upr Ss Base	9115'	Oil
p.	2nd Bone Spring Middle Ss	9130'	Oil
q.	2nd Bone Spring Middle Ss Base	9205'	Oil
r.	3rd Bone Spring Lm	9385'	Oil
Total Depth		13,820'	

Casing Program: All casing is new and API approved

Hole Size	Hole Interval	OD Csg	Casing Interval	Weight	Collar	Grade
26"	0 – 650'	20"	0'-650'	94#	BT&C	J/K-55
17 ½"	650- 2575'	13 3/8"	0'-2575'	68#	BT&C	J/K-55
12 ¼"	2575-4300'	9 5/8"	0'-4300'	40#	LT&C	J-55
8 ¾"	4300'-8500'	5 ½"	0'-8500'	17#	LT&C	HCP110
8 ¾"	8500-13820	5 ½"	8500-13820'	17#	BT&C	HCP110

Design Parameter Factors:

Casing Size	Collapse Design Factor	Burst Design Factor	Tension Design Factor
20"	1.71	6.94	22.95
13 3/8"	1.62	2.86	6.51
9 5/8"	1.15	1.77	3.02
5 ½"	4.07	6.05	1.92
5 ½"	2.01	2.49	3.67

3. Cement Program: (volumes based on at least 25% excess)

String	Slurry	Amount and Type of Cement
Surface	**Lead**	800 sacks Class C Cement + 1% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 4% bwoc Bentonite + 81.1% Fresh Water, 13.5 ppg, 1.73 cf/sk
	Tail	300 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 56.3% Fresh Water, 14.8 ppg, 1.35 cf/sk **(TOC: Surface)**
13-3/8" Intermediate	**Lead**	1340 sacks (60:40) Poz (Fly Ash):Class C Cement +5% bwow Sodium Chloride + 0.4% bwoc R-3 +0.125 lbs/sack Cello Flake + 3 lbs/sack LCM-1 + 0.25% bwoc FL-52 + 1% bwoc Sodium Metasilicate+ 89.5% Fresh Water, 12.6 ppg, 1.74 cf/sk **(TOC: Surface)**
	Tail	450 sacks (60:40) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.5% bwoc Sodium Metasilicate + 0.5% bwoc BA-10A + 4% bwoc MPA-5 + 65.3% Fresh Water, 13.8 ppg, 1.38 cf/sk
9-5/8" Intermediate		**1st STAGE**
	Lead	490 sacks (60:40) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.3% bwoc R-3 + 0.125 lbs/sack Cello Flake + 3 lbs/sack LCM-1 + 0.25% bwoc FL-52 + 1% bwoc Sodium Metasilicate + 89.6% Fresh Water, 12.6 ppg, 1.73 cf/sk
	Tail	300 sacks (60:40)Poz Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.1% bwoc Sodium Metasilicate + 4% bwoc MPA-5 + 65.2% Fresh Water, 13.8 ppg, 1.38 cf/sk
		2nd STAGE – DV tool and ECP @ 2,625'
See COA	**Lead**	450 sacks (60:40) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.3% bwoc R-3 + 0.125 lbs/sack Cello Flake + 3 lbs/sack LCM-1 + 0.25% bwoc FL-52 + 1% bwoc Sodium Metasilicate + 89.6% Fresh Water, 12.6 ppg, 1.73 cf/sk **(TOC: Surface)**
	Tail	150 sacks (60:40)Poz Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.1% bwoc Sodium Metasilicate + 5% bwoc BA-10A + 4% bwoc MPA-5 + 65.2% Water, 13.8 ppg, 1.38 cf/sk
Production		**1st STAGE**
	Lead	660 sacks (35:65) Poz (Fly Ash):Class H Cement + 3% bwow Sodium Chloride + 0.2% bwoc R-3 + 0.125 lbs/sack Cello Flake + 0.7% bwoc FL-52 + 0.3% bwoc ASA-301 + 6% bwoc Bentonite + 105.5% Fresh Water, 12.5 ppg, 2.01 cf/sk
	Tail	1400 sacks (50:50) Poz (Fly Ash):Class H Cement + 5% bwow Sodium Chloride + 0.3% bwoc CD-32 + 0.5% bwoc FL-25 + 0.5% bwoc FL-52 + 0.25% bwoc Sodium Metasilicate + 57.2% Fresh Water, 14.2 ppg, 1.28 cf/sk
		2nd STAGE – DV tool @ 5,500'
	Lead	400 sacks Class C Cement + 1% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 157.8% Fresh Water, 11.4 ppg, 2.88 cf/sk **TOC: 2400'** (255' above reef top)
	Tail	150 sacks (60:40) Poz (Fly Ash):Class C Cement + 1% bwow Sodium Chloride + 0.2% bwoc R-3 + 0.125 lbs/sack Cello Flake + 0.5% bwoc BA-10A + 4% bwoc MPA-5 + 63.2% Fresh Water, 13.8 ppg, 1.38 cf/sk

1. **Pressure Control Equipment**

BOP DESIGN: The BOP system used to drill the **17-1/2" hole** will consist of a **20" 2M Annular preventer**. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a **2M system** prior to drilling out the surface casing shoe.

The BOP system used to drill the **12-1/4" and 8-3/4" holes** will consist of a **13-5/8" 3M Triple Ram and Annular preventer**. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a **3M system** prior to drilling out each of the previous casing shoes. All tests will be in accordance with BLM Onshore Oil and Gas Order No. 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 3,000 psi WP.

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.

Proposed Mud Circulation System

Depth	Mud Wt.	Visc	Fluid Loss	Type System
0 - 650'	8.4-9.0	28-34	NC	FW
650- 2575'	9.8-10	28-32	NC	Brine
2575-4300'	8.4-9.0	28-32	NC	FW
4300-13,820'	8.6-9.0	28-32	NC-12	FW

The necessary mud products for weight addition and fluid loss control will be on location at all times.

2. **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.
   c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 20" casing shoe until the 5 1/2" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

3. **Logging, Coring, and Testing Program:** See COA

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. The open hole electrical logging program will be:
    i. Total Depth to Intermediate Casing — Dual Laterolog-Micro Laterolog with SP and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
    ii. Total Depth to Surface — Compensated Neutron with Gamma Ray
    iii. No coring program is planned
    iv. Additional testing will be initiated subsequent to setting the 5 ½" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

4. **Potential Hazards:**

a. No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area. 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 of equipment being used to drill this well. Estimated BHP 3800 psi and Estimated BHT 140°. No H2S is anticipated to be encountered.

5. **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.

PATHFINDER®

A Schlumberger Company

Devon Energy, Inc.

Eddy County (NAD83)
Aquila 22 Fed Com
#4H
OH

Plan: Plan #2

Pathfinder X&Y Report

05 October, 2012

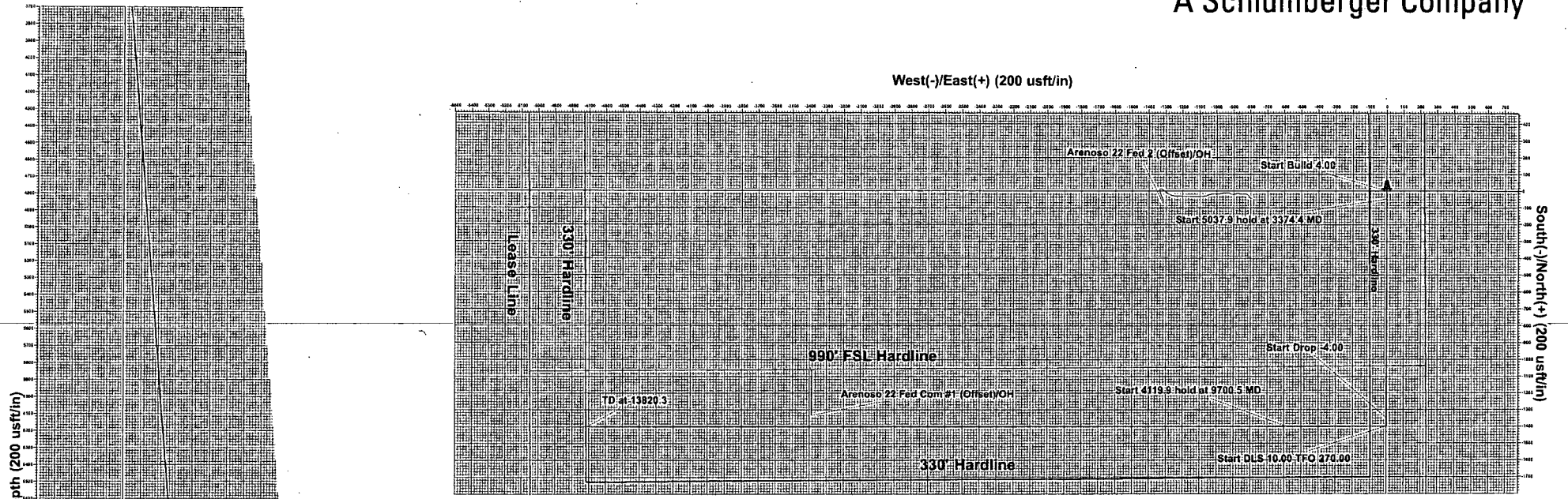
devon

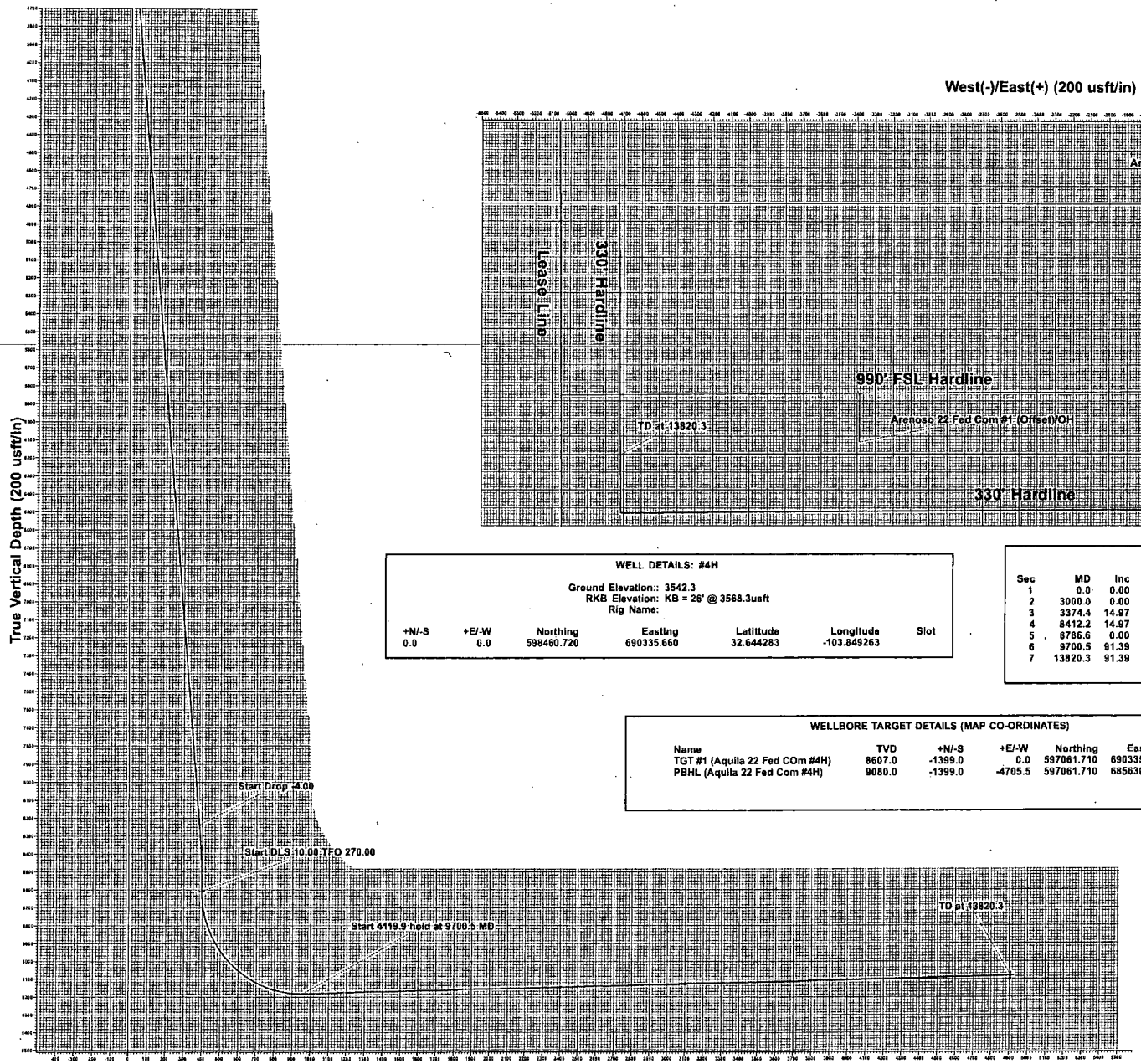
devon

PROJECT DETAILS: Eddy County (NAD83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid

Project: Eddy County (NAD83)
Site: Aquila 22 Fed Com
Well: #4H
Wellbore: OH
Plan: Plan #2 (#4H/OH)

PATHFINDER®
A Schlumberger Company





WELL DETAILS: #4H

Ground Elevation:: 3542.3
RKB Elevation: KB = 26' @ 3568.3usft
Rig Name:

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	598460.720	690335.660	32.644283	-103.849263	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	3000.0	0.00	0.00	3000.0	0.0	0.0	0.00	0.00	0.0	
3	3374.4	14.97	180.00	3370.1	-48.6	0.0	4.00	180.00	13.9	
4	8412.2	14.97	180.00	8236.9	-1350.4	0.0	0.00	0.00	384.8	
5	8786.6	0.00	0.00	8607.0	-1399.0	0.0	4.00	180.00	398.7	TGT #1 (Aquila 22 Fed COm #4H)
6	9700.5	91.39	270.00	9179.8	-1399.0	-586.8	10.00	270.00	961.2	
7	13820.3	91.39	270.00	9080.0	-1399.0	-4705.5	0.00	0.00	4909.1	PBHL (Aquila 22 Fed Com #4H)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
TGT #1 (Aquila 22 Fed COm #4H)	8607.0	-1399.0	0.0	597061.710	690335.660	Point
PBHL (Aquila 22 Fed Com #4H)	9080.0	-1399.0	-4705.5	597061.710	685630.170	Point

Azimuths to Grid North
True North: -0.26°
Magnetic North: 7.32°

Magnetic Field
Strength: 48748.7snT
Dip Angle: 60.52°
Date: 10/3/2012
Model: IGRF200510

Plan: Plan #2 (#4H/OH)

Created By: Michael Trout Date: 16:10, October 05 2012

Checked: _____ Date: _____

Company:	Devon Energy, Inc	**Local Co-ordinate Reference:**	Well #4H
Project:	Eddy County (NAD83)	**TVD Reference:**	KB = 26' @ 3568.3usft
Site:	Aquila 22 Fed Com	**MD Reference:**	KB = 26' @ 3568.3usft
Well:	#4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 5000.1 Single User Db

Project Eddy County (NAD83)

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

Site Aquila 22 Fed Com

Site Position:		**Northing:**	600,721.700 usft	**Latitude:**	32.650496
From:	Map	**Easting:**	690,494.540 usft	**Longitude:**	-103.848713
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.26 °

Well #4H

Well Position	**+N/-S**	0.0 usft	**Northing:**	598,460.720 usft	**Latitude:**	32.644283
	+E/-W	0.0 usft	**Easting:**	690,335.660 usft	**Longitude:**	-103.849263
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,542.3 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/3/2012	7.58	60.52	48,749

Design Plan #2

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	253.44

Survey Tool Program **Date** 10/3/2012

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	13,820.3	Plan #2 (OH)	Pathfinder	Pathfinder MWD

Company:	Devon Energy, Inc.	**Local Co-ordinate Reference:**	Well #4H
Project:	Eddy County (NAD83)	**TVD Reference:**	KB = 26' @ 3568.3usft
Site:	Aquila 22 Fed Com	**MD Reference:**	KB = 26' @ 3568.3usft
Well:	#4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Latitude (°)	Longitude (°)
0.0	0.00	0.00	0.0	-3,568.3	0.0	0.0	0.0	0.00	32.64	-103.85
100.0	0.00	0.00	100.0	-3,468.3	0.0	0.0	0.0	0.00	32.64	-103.85
200.0	0.00	0.00	200.0	-3,368.3	0.0	0.0	0.0	0.00	32.64	-103.85
300.0	0.00	0.00	300.0	-3,268.3	0.0	0.0	0.0	0.00	32.64	-103.85
400.0	0.00	0.00	400.0	-3,168.3	0.0	0.0	0.0	0.00	32.64	-103.85
500.0	0.00	0.00	500.0	-3,068.3	0.0	0.0	0.0	0.00	32.64	-103.85
600.0	0.00	0.00	600.0	-2,968.3	0.0	0.0	0.0	0.00	32.64	-103.85
700.0	0.00	0.00	700.0	-2,868.3	0.0	0.0	0.0	0.00	32.64	-103.85
800.0	0.00	0.00	800.0	-2,768.3	0.0	0.0	0.0	0.00	32.64	-103.85
900.0	0.00	0.00	900.0	-2,668.3	0.0	0.0	0.0	0.00	32.64	-103.85
1,000.0	0.00	0.00	1,000.0	-2,568.3	0.0	0.0	0.0	0.00	32.64	-103.85
1,100.0	0.00	0.00	1,100.0	-2,468.3	0.0	0.0	0.0	0.00	32.64	-103.85
1,200.0	0.00	0.00	1,200.0	-2,368.3	0.0	0.0	0.0	0.00	32.64	-103.85
1,300.0	0.00	0.00	1,300.0	-2,268.3	0.0	0.0	0.0	0.00	32.64	-103.85
1,400.0	0.00	0.00	1,400.0	-2,168.3	0.0	0.0	0.0	0.00	32.64	-103.85
1,500.0	0.00	0.00	1,500.0	-2,068.3	0.0	0.0	0.0	0.00	32.64	-103.85
1,600.0	0.00	0.00	1,600.0	-1,968.3	0.0	0.0	0.0	0.00	32.64	-103.85
1,700.0	0.00	0.00	1,700.0	-1,868.3	0.0	0.0	0.0	0.00	32.64	-103.85
1,800.0	0.00	0.00	1,800.0	-1,768.3	0.0	0.0	0.0	0.00	32.64	-103.85
1,900.0	0.00	0.00	1,900.0	-1,668.3	0.0	0.0	0.0	0.00	32.64	-103.85
2,000.0	0.00	0.00	2,000.0	-1,568.3	0.0	0.0	0.0	0.00	32.64	-103.85
2,100.0	0.00	0.00	2,100.0	-1,468.3	0.0	0.0	0.0	0.00	32.64	-103.85
2,200.0	0.00	0.00	2,200.0	-1,368.3	0.0	0.0	0.0	0.00	32.64	-103.85
2,300.0	0.00	0.00	2,300.0	-1,268.3	0.0	0.0	0.0	0.00	32.64	-103.85
2,400.0	0.00	0.00	2,400.0	-1,168.3	0.0	0.0	0.0	0.00	32.64	-103.85
2,500.0	0.00	0.00	2,500.0	-1,068.3	0.0	0.0	0.0	0.00	32.64	-103.85
2,600.0	0.00	0.00	2,600.0	-968.3	0.0	0.0	0.0	0.00	32.64	-103.85

Company:	Devon Energy Inc.	**Local Co-ordinate Reference:**	Well #4H
Project:	Eddy County (NAD83)	**TVD Reference:**	KB = 26 @ 3568.3usft
Site:	Aquila 22 Fed Com	**MD Reference:**	KB = 26 @ 3568.3usft
Well:	#4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Latitude (°)	Longitude (°)
2,700.0	0.00	0.00	2,700.0	-868.3	0.0	0.0	0.0	0.00	32.64	-103.85
2,800.0	0.00	0.00	2,800.0	-768.3	0.0	0.0	0.0	0.00	32.64	-103.85
2,900.0	0.00	0.00	2,900.0	-668.3	0.0	0.0	0.0	0.00	32.64	-103.85
3,000.0	0.00	0.00	3,000.0	-568.3	0.0	0.0	0.0	0.00	32.64	-103.85
3,100.0	4.00	180.00	3,099.9	-468.4	-3.5	0.0	1.0	4.00	32.64	-103.85
3,200.0	8.00	180.00	3,199.4	-368.9	-13.9	0.0	4.0	4.00	32.64	-103.85
3,300.0	12.00	180.00	3,297.8	-270.5	-31.3	0.0	8.9	4.00	32.64	-103.85
3,374.4	14.97	180.00	3,370.1	-198.2	-48.6	0.0	13.9	4.00	32.64	-103.85
3,400.0	14.97	180.00	3,394.9	-173.4	-55.3	0.0	15.8	0.00	32.64	-103.85
3,500.0	14.97	180.00	3,491.5	-76.8	-81.1	0.0	23.1	0.00	32.64	-103.85
3,600.0	14.97	180.00	3,588.1	19.8	-106.9	0.0	30.5	0.00	32.64	-103.85
3,700.0	14.97	180.00	3,684.7	116.4	-132.8	0.0	37.8	0.00	32.64	-103.85
3,800.0	14.97	180.00	3,781.3	213.0	-158.6	0.0	45.2	0.00	32.64	-103.85
3,900.0	14.97	180.00	3,877.9	309.6	-184.5	0.0	52.6	0.00	32.64	-103.85
4,000.0	14.97	180.00	3,974.5	406.2	-210.3	0.0	59.9	0.00	32.64	-103.85
4,100.0	14.97	180.00	4,071.1	502.8	-236.1	0.0	67.3	0.00	32.64	-103.85
4,200.0	14.97	180.00	4,167.7	599.4	-262.0	0.0	74.7	0.00	32.64	-103.85
4,300.0	14.97	180.00	4,264.3	696.0	-287.8	0.0	82.0	0.00	32.64	-103.85
4,400.0	14.97	180.00	4,360.9	792.6	-313.7	0.0	89.4	0.00	32.64	-103.85
4,500.0	14.97	180.00	4,457.5	889.2	-339.5	0.0	96.8	0.00	32.64	-103.85
4,600.0	14.97	180.00	4,554.1	985.8	-365.3	0.0	104.1	0.00	32.64	-103.85
4,700.0	14.97	180.00	4,650.7	1,082.4	-391.2	0.0	111.5	0.00	32.64	-103.85
4,800.0	14.97	180.00	4,747.3	1,179.0	-417.0	0.0	118.8	0.00	32.64	-103.85
4,900.0	14.97	180.00	4,843.9	1,275.6	-442.9	0.0	126.2	0.00	32.64	-103.85
5,000.0	14.97	180.00	4,940.5	1,372.2	-468.7	0.0	133.6	0.00	32.64	-103.85
5,100.0	14.97	180.00	5,037.2	1,468.9	-494.5	0.0	140.9	0.00	32.64	-103.85
5,200.0	14.97	180.00	5,133.8	1,565.5	-520.4	0.0	148.3	0.00	32.64	-103.85

Company:	Devon Energy, Inc.	**Local Co-ordinate Reference:**	Well #4H
Project:	Eddy County (NAD83)	**TVD Reference:**	KB = 26 @ 3568.3usft
Site:	Aquila 22 Fed Com	**MD Reference:**	KB = 26 @ 3568.3usft
Well:	#4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Latitude (°)	Longitude (°)
5,300.0	14.97	180.00	5,230.4	1,662.1	-546.2	0.0	155.7	0.00	32.64	-103.85
5,400.0	14.97	180.00	5,327.0	1,758.7	-572.0	0.0	163.0	0.00	32.64	-103.85
5,500.0	14.97	180.00	5,423.6	1,855.3	-597.9	0.0	170.4	0.00	32.64	-103.85
5,600.0	14.97	180.00	5,520.2	1,951.9	-623.7	0.0	177.8	0.00	32.64	-103.85
5,700.0	14.97	180.00	5,616.8	2,048.5	-649.6	0.0	185.1	0.00	32.64	-103.85
5,800.0	14.97	180.00	5,713.4	2,145.1	-675.4	0.0	192.5	0.00	32.64	-103.85
5,900.0	14.97	180.00	5,810.0	2,241.7	-701.2	0.0	199.8	0.00	32.64	-103.85
6,000.0	14.97	180.00	5,906.6	2,338.3	-727.1	0.0	207.2	0.00	32.64	-103.85
6,100.0	14.97	180.00	6,003.2	2,434.9	-752.9	0.0	214.6	0.00	32.64	-103.85
6,200.0	14.97	180.00	6,099.8	2,531.5	-778.8	0.0	221.9	0.00	32.64	-103.85
6,300.0	14.97	180.00	6,196.4	2,628.1	-804.6	0.0	229.3	0.00	32.64	-103.85
6,400.0	14.97	180.00	6,293.0	2,724.7	-830.4	0.0	236.7	0.00	32.64	-103.85
6,500.0	14.97	180.00	6,389.6	2,821.3	-856.3	0.0	244.0	0.00	32.64	-103.85
6,600.0	14.97	180.00	6,486.2	2,917.9	-882.1	0.0	251.4	0.00	32.64	-103.85
6,700.0	14.97	180.00	6,582.8	3,014.5	-908.0	0.0	258.8	0.00	32.64	-103.85
6,800.0	14.97	180.00	6,679.4	3,111.1	-933.8	0.0	266.1	0.00	32.64	-103.85
6,900.0	14.97	180.00	6,776.0	3,207.7	-959.6	0.0	273.5	0.00	32.64	-103.85
7,000.0	14.97	180.00	6,872.6	3,304.3	-985.5	0.0	280.8	0.00	32.64	-103.85
7,100.0	14.97	180.00	6,969.2	3,400.9	-1,011.3	0.0	288.2	0.00	32.64	-103.85
7,200.0	14.97	180.00	7,065.8	3,497.5	-1,037.1	0.0	295.6	0.00	32.64	-103.85
7,300.0	14.97	180.00	7,162.4	3,594.1	-1,063.0	0.0	302.9	0.00	32.64	-103.85
7,400.0	14.97	180.00	7,259.0	3,690.7	-1,088.8	0.0	310.3	0.00	32.64	-103.85
7,500.0	14.97	180.00	7,355.7	3,787.4	-1,114.7	0.0	317.7	0.00	32.64	-103.85
7,600.0	14.97	180.00	7,452.3	3,884.0	-1,140.5	0.0	325.0	0.00	32.64	-103.85
7,700.0	14.97	180.00	7,548.9	3,980.6	-1,166.3	0.0	332.4	0.00	32.64	-103.85
7,800.0	14.97	180.00	7,645.5	4,077.2	-1,192.2	0.0	339.8	0.00	32.64	-103.85
7,900.0	14.97	180.00	7,742.1	4,173.8	-1,218.0	0.0	347.1	0.00	32.64	-103.85

Company:	Devon Energy Inc	**Local Co-ordinate Reference:**	Well #4H
Project:	Eddy County (NAD83)	**TVD Reference:**	KB = 26 @ 3568.3usft
Site:	Aquila 22 Fed Com	**MD Reference:**	KB = 26 @ 3568.3usft
Well:	#4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Latitude (°)	Longitude (°)
8,000.0	14.97	180.00	7,838.7	4,270.4	-1,243.9	0.0	354.5	0.00	32.64	-103.85
8,100.0	14.97	180.00	7,935.3	4,367.0	-1,269.7	0.0	361.8	0.00	32.64	-103.85
8,200.0	14.97	180.00	8,031.9	4,463.6	-1,295.5	0.0	369.2	0.00	32.64	-103.85
8,300.0	14.97	180.00	8,128.5	4,560.2	-1,321.4	0.0	376.6	0.00	32.64	-103.85
8,400.0	14.97	180.00	8,225.1	4,656.8	-1,347.2	0.0	383.9	0.00	32.64	-103.85
8,412.2	14.97	180.00	8,236.9	4,668.6	-1,350.4	0.0	384.8	0.00	32.64	-103.85
8,500.0	11.46	180.00	8,322.3	4,754.0	-1,370.4	0.0	390.6	4.00	32.64	-103.85
8,600.0	7.46	180.00	8,421.0	4,852.7	-1,386.9	0.0	395.2	4.00	32.64	-103.85
8,700.0	3.46	180.00	8,520.5	4,952.2	-1,396.4	0.0	398.0	4.00	32.64	-103.85
8,786.6	0.00	0.00	8,607.0	5,038.7	-1,399.0	0.0	398.7	4.00	32.64	-103.85
TGT #1 (Aquila 22 Fed COm #4H)										
8,800.0	1.34	270.00	8,620.4	5,052.1	-1,399.0	-0.2	398.8	10.00	32.64	-103.85
8,850.0	6.34	270.00	8,670.3	5,102.0	-1,399.0	-3.5	402.1	10.00	32.64	-103.85
8,900.0	11.34	270.00	8,719.7	5,151.4	-1,399.0	-11.2	409.4	10.00	32.64	-103.85
8,950.0	16.34	270.00	8,768.2	5,199.9	-1,399.0	-23.1	420.9	10.00	32.64	-103.85
9,000.0	21.34	270.00	8,815.5	5,247.2	-1,399.0	-39.3	436.4	10.00	32.64	-103.85
9,050.0	26.34	270.00	8,861.2	5,292.9	-1,399.0	-59.5	455.7	10.00	32.64	-103.85
9,100.0	31.34	270.00	8,905.0	5,336.7	-1,399.0	-83.6	478.8	10.00	32.64	-103.85
9,150.0	36.34	270.00	8,946.5	5,378.2	-1,399.0	-111.4	505.5	10.00	32.64	-103.85
9,200.0	41.34	270.00	8,985.5	5,417.2	-1,399.0	-142.8	535.6	10.00	32.64	-103.85
9,250.0	46.34	270.00	9,021.5	5,453.2	-1,399.0	-177.4	568.8	10.00	32.64	-103.85
9,300.0	51.34	270.00	9,054.4	5,486.1	-1,399.0	-215.1	604.8	10.00	32.64	-103.85
9,350.0	56.34	270.00	9,083.9	5,515.6	-1,399.0	-255.4	643.5	10.00	32.64	-103.85
9,400.0	61.34	270.00	9,109.8	5,541.5	-1,399.0	-298.2	684.5	10.00	32.64	-103.85
9,450.0	66.34	270.00	9,131.8	5,563.5	-1,399.0	-343.0	727.5	10.00	32.64	-103.85
9,500.0	71.34	270.00	9,149.8	5,581.5	-1,399.0	-389.7	772.2	10.00	32.64	-103.85
9,550.0	76.34	270.00	9,163.8	5,595.5	-1,399.0	-437.7	818.2	10.00	32.64	-103.85

Company:	Devon Energy, Inc.	**Local Co-ordinate Reference:**	Well #4H
Project:	Eddy County (NAD83)	**TVD Reference:**	KB = 26' @ 3568.3usft
Site:	Aquila 22 Fed Com	**MD Reference:**	KB = 26' @ 3568.3usft
Well:	#4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Latitude (°)	Longitude (°)
9,600.0	81.34	270.00	9,173.4	5,605.1	-1,399.0	-486.7	865.2	10.00	32.64	-103.85
9,650.0	86.34	270.00	9,178.8	5,610.5	-1,399.0	-536.4	912.9	10.00	32.64	-103.85
9,700.5	91.39	270.00	9,179.8	5,611.5	-1,399.0	-586.8	961.2	10.00	32.64	-103.85
9,800.0	91.39	270.00	9,177.4	5,609.1	-1,399.0	-686.4	1,056.6	0.00	32.64	-103.85
9,900.0	91.39	270.00	9,175.0	5,606.7	-1,399.0	-786.3	1,152.4	0.00	32.64	-103.85
10,000.0	91.39	270.00	9,172.5	5,604.2	-1,399.0	-886.3	1,248.2	0.00	32.64	-103.85
10,100.0	91.39	270.00	9,170.1	5,601.8	-1,399.0	-986.3	1,344.1	0.00	32.64	-103.85
10,200.0	91.39	270.00	9,167.7	5,599.4	-1,399.0	-1,086.2	1,439.9	0.00	32.64	-103.85
10,300.0	91.39	270.00	9,165.3	5,597.0	-1,399.0	-1,186.2	1,535.7	0.00	32.64	-103.85
10,400.0	91.39	270.00	9,162.8	5,594.5	-1,399.0	-1,286.2	1,631.5	0.00	32.64	-103.85
10,500.0	91.39	270.00	9,160.4	5,592.1	-1,399.0	-1,386.1	1,727.4	0.00	32.64	-103.85
10,600.0	91.39	270.00	9,158.0	5,589.7	-1,399.0	-1,486.1	1,823.2	0.00	32.64	-103.85
10,700.0	91.39	270.00	9,155.6	5,587.3	-1,399.0	-1,586.1	1,919.0	0.00	32.64	-103.85
10,800.0	91.39	270.00	9,153.2	5,584.9	-1,399.0	-1,686.1	2,014.8	0.00	32.64	-103.85
10,900.0	91.39	270.00	9,150.7	5,582.4	-1,399.0	-1,786.0	2,110.7	0.00	32.64	-103.86
11,000.0	91.39	270.00	9,148.3	5,580.0	-1,399.0	-1,886.0	2,206.5	0.00	32.64	-103.86
11,100.0	91.39	270.00	9,145.9	5,577.6	-1,399.0	-1,986.0	2,302.3	0.00	32.64	-103.86
11,200.0	91.39	270.00	9,143.5	5,575.2	-1,399.0	-2,085.9	2,398.1	0.00	32.64	-103.86
11,300.0	91.39	270.00	9,141.0	5,572.7	-1,399.0	-2,185.9	2,494.0	0.00	32.64	-103.86
11,400.0	91.39	270.00	9,138.6	5,570.3	-1,399.0	-2,285.9	2,589.8	0.00	32.64	-103.86
11,500.0	91.39	270.00	9,136.2	5,567.9	-1,399.0	-2,385.9	2,685.6	0.00	32.64	-103.86
11,600.0	91.39	270.00	9,133.8	5,565.5	-1,399.0	-2,485.8	2,781.4	0.00	32.64	-103.86
11,700.0	91.39	270.00	9,131.4	5,563.1	-1,399.0	-2,585.8	2,877.3	0.00	32.64	-103.86
11,800.0	91.39	270.00	9,128.9	5,560.6	-1,399.0	-2,685.8	2,973.1	0.00	32.64	-103.86
11,900.0	91.39	270.00	9,126.5	5,558.2	-1,399.0	-2,785.7	3,068.9	0.00	32.64	-103.86
12,000.0	91.39	270.00	9,124.1	5,555.8	-1,399.0	-2,885.7	3,164.7	0.00	32.64	-103.86
12,100.0	91.39	270.00	9,121.7	5,553.4	-1,399.0	-2,985.7	3,260.6	0.00	32.64	-103.86

Company:	Devon Energy, Inc.	Local Co-ordinate Reference:	Well #4H
Project:	Eddy County (NAD83)	TVD Reference:	KB = 26' @ 3568.3usft
Site:	Aquila 22 Fed Com	MD Reference:	KB = 26' @ 3568.3usft
Well:	#4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Latitude (°)	Longitude (°)
12,200.0	91.39	270.00	9,119.2	5,550.9	-1,399.0	-3,085.6	3,356.4	0.00	32.64	-103.86
12,300.0	91.39	270.00	9,116.8	5,548.5	-1,399.0	-3,185.6	3,452.2	0.00	32.64	-103.86
12,400.0	91.39	270.00	9,114.4	5,546.1	-1,399.0	-3,285.6	3,548.0	0.00	32.64	-103.86
12,500.0	91.39	270.00	9,112.0	5,543.7	-1,399.0	-3,385.6	3,643.9	0.00	32.64	-103.86
12,600.0	91.39	270.00	9,109.6	5,541.3	-1,399.0	-3,485.5	3,739.7	0.00	32.64	-103.86
12,700.0	91.39	270.00	9,107.1	5,538.8	-1,399.0	-3,585.5	3,835.5	0.00	32.64	-103.86
12,800.0	91.39	270.00	9,104.7	5,536.4	-1,399.0	-3,685.5	3,931.3	0.00	32.64	-103.86
12,900.0	91.39	270.00	9,102.3	5,534.0	-1,399.0	-3,785.4	4,027.2	0.00	32.64	-103.86
13,000.0	91.39	270.00	9,099.9	5,531.6	-1,399.0	-3,885.4	4,123.0	0.00	32.64	-103.86
13,100.0	91.39	270.00	9,097.4	5,529.1	-1,399.0	-3,985.4	4,218.8	0.00	32.64	-103.86
13,200.0	91.39	270.00	9,095.0	5,526.7	-1,399.0	-4,085.4	4,314.6	0.00	32.64	-103.86
13,300.0	91.39	270.00	9,092.6	5,524.3	-1,399.0	-4,185.3	4,410.5	0.00	32.64	-103.86
13,400.0	91.39	270.00	9,090.2	5,521.9	-1,399.0	-4,285.3	4,506.3	0.00	32.64	-103.86
13,500.0	91.39	270.00	9,087.8	5,519.5	-1,399.0	-4,385.3	4,602.1	0.00	32.64	-103.86
13,600.0	91.39	270.00	9,085.3	5,517.0	-1,399.0	-4,485.2	4,697.9	0.00	32.64	-103.86
13,700.0	91.39	270.00	9,082.9	5,514.6	-1,399.0	-4,585.2	4,793.8	0.00	32.64	-103.86
13,800.0	91.39	270.00	9,080.5	5,512.2	-1,399.0	-4,685.2	4,889.6	0.00	32.64	-103.86
13,820.3	91.39	270.00	9,080.0	5,511.7	-1,399.0	-4,705.5	4,909.1	0.00	32.64	-103.86
PBHL (Aquila 22 Fed Com #4H)										

Checked By: _____ Approved By: _____ Date: _____

devon

Devon Energy, Inc.

Eddy County (NAD83)
Aquila 22 Fed Com
#4H

OH
Plan #2

Anticollision Report

23 October, 2012

PATHFINDER®
A Schlumberger Company

devon

Pathfinder
Anticollision Report

PATHFINDER
A Schlumberger Company

Company:	Devon Energy, Inc.	**Local Co-ordinate Reference:**	Well #4H
Project:	Eddy County (NAD83)	**TVD Reference:**	KB = 26' @ 3568.3usft
Reference Site:	Aquila 22 Fed Com	**MD Reference:**	KB = 26' @ 3568.3usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	#4H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Reference Plan #2

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	Systematic Ellipse
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum separation factor of 5.00	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 10/3/2012

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	13,820.3	Plan #2 (OH)	Pathfinder	Pathfinder MWD

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
Aquila 22 Fed Com						
#1H - OH - Plan #4						Out of range
#2H - OH - Plan #3						Out of range
#3H - OH - Plan #1	3,000.0	2,999.7	50.0	37.0	3.851	CC, ES, SF
Arenoso 22 Fed 2 (Offset) - OH - OH						Out of range
Arenoso 22 Fed 2 (Offset) - OH - OH						Out of range
Arenoso 22 Fed Com #1 (Offset) - OH - OH	12,507.2	9,083.7	349.0	140.8	1.676	Level 3, CC, ES, SF

Offset Design Aquila 22 Fed Com - #3H - OH - Plan #1 — Offset Site Error: 0.0 usft

Survey Program: 0-NS-GYRO-MS, 8567-MWD — Offset Well Error: 0.0 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
2,400.0	2,400.0	2,399.7	2,399.7	4.1	6.2	-0.42	50.0	-0.4	50.0	39.7	10.35	4.834	
2,500.0	2,500.0	2,499.7	2,499.7	4.3	6.5	-0.42	50.0	-0.4	50.0	39.2	10.79	4.637	
2,600.0	2,600.0	2,599.7	2,599.7	4.5	6.7	-0.42	50.0	-0.4	50.0	38.8	11.23	4.455	
2,700.0	2,700.0	2,699.7	2,699.7	4.7	7.0	-0.42	50.0	-0.4	50.0	38.3	11.67	4.287	
2,800.0	2,800.0	2,799.7	2,799.7	4.8	7.3	-0.42	50.0	-0.4	50.0	37.9	12.11	4.131	
2,900.0	2,900.0	2,899.7	2,899.7	5.0	7.5	-0.42	50.0	-0.4	50.0	37.5	12.55	3.986	
3,000.0	3,000.0	2,999.7	2,999.7	5.2	7.8	-0.42	50.0	-0.4	50.0	37.0	12.99	3.851	CC, ES, SF
3,100.0	3,099.9	3,099.6	3,099.6	5.4	8.1	179.60	50.0	-0.4	53.5	40.1	13.40	3.993	
3,200.0	3,199.4	3,199.1	3,199.1	5.5	8.3	179.67	50.0	-0.4	64.0	50.2	13.75	4.650	

Company:	Devon Energy, Inc.	**Local Co-ordinate Reference:**	Well #4H
Project:	Eddy County (NAD83)	**TVD Reference:**	KB = 26' @ 3568.3usft
Reference Site:	Aquila 22 Fed Com	**MD Reference:**	KB = 26' @ 3568.3usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	#4H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Offset Design Aquila 22 Fed Com - Arenoso 22 Fed Com #1 (Offset) - OH - OH — Offset Site Error: 0.0 usft

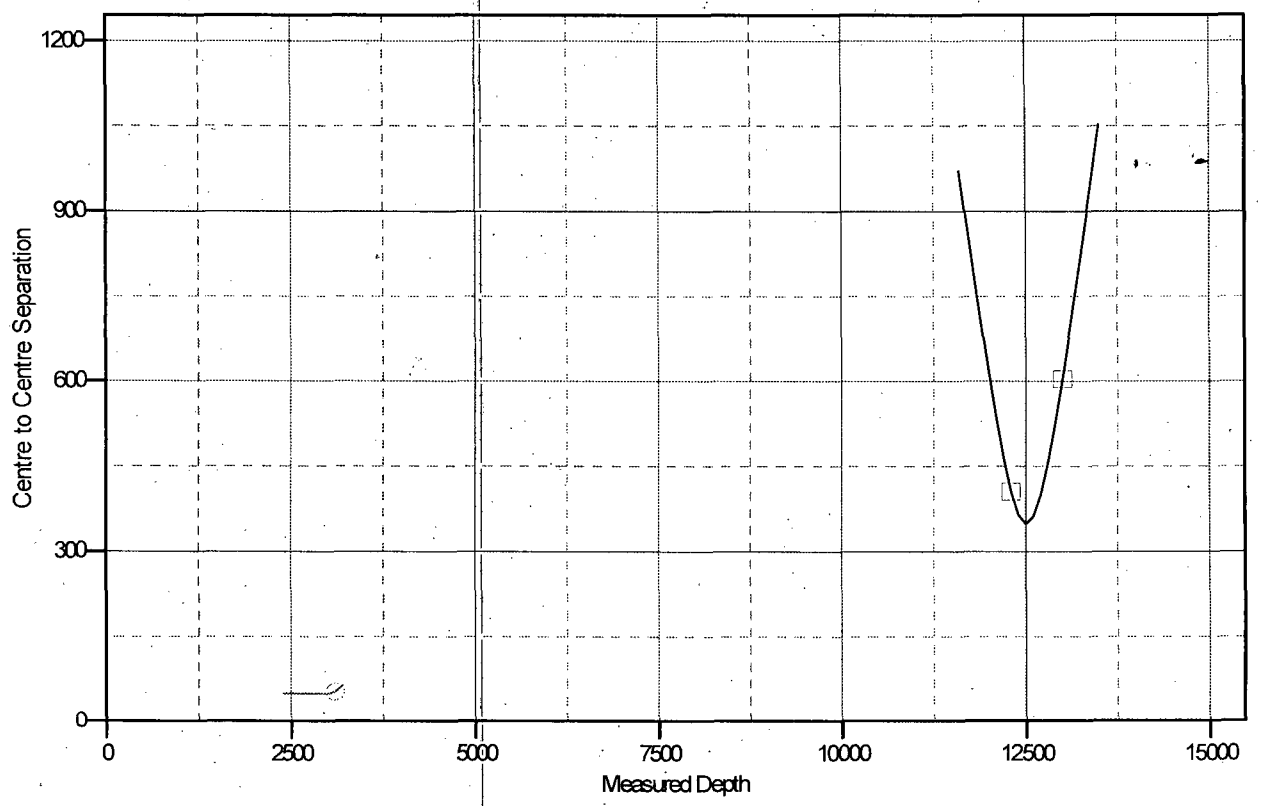
Survey Program: 308-INC+TREND — Offset Well Error: 0.0 usft

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
11,600.0	9,133.8	9,105.4	9,103.5	27.1	217.5	93.60	-1,050.0	-3,392.8	971.8	768.6	203.22	4.782	
11,700.0	9,131.4	9,103.0	9,101.1	27.6	217.4	93.21	-1,050.0	-3,392.8	879.2	675.4	203.78	4.315	
11,800.0	9,128.9	9,100.6	9,098.7	28.2	217.3	92.82	-1,050.0	-3,392.8	788.5	584.1	204.34	3.859	
11,900.0	9,126.5	9,098.2	9,096.3	28.8	217.3	92.43	-1,050.0	-3,392.8	700.2	495.3	204.90	3.417	
12,000.0	9,124.1	9,095.9	9,093.9	29.3	217.2	92.03	-1,050.0	-3,392.8	615.6	410.1	205.45	2.996	
12,100.0	9,121.7	9,093.5	9,091.5	29.9	217.1	91.64	-1,050.0	-3,392.8	536.2	330.2	206.00	2.603	
12,200.0	9,119.2	9,091.1	9,089.1	30.5	217.0	91.25	-1,050.0	-3,392.8	464.9	258.4	206.55	2.251	
12,300.0	9,116.8	9,088.7	9,086.7	31.1	216.9	90.86	-1,050.0	-3,392.8	405.9	198.8	207.09	1.960	Level 3
12,400.0	9,114.4	9,086.3	9,084.3	31.7	216.9	90.46	-1,050.0	-3,392.8	365.1	157.5	207.63	1.758	Level 3
12,500.0	9,112.0	9,083.9	9,081.9	32.3	216.8	90.07	-1,050.0	-3,392.8	349.1	140.9	208.16	1.677	Level 3
12,507.2	9,111.8	9,083.7	9,081.8	32.3	216.8	90.04	-1,050.0	-3,392.8	349.0	140.8	208.20	1.676	Level 3, CC, ES, SF
12,600.0	9,109.6	9,081.5	9,079.5	32.9	216.7	89.68	-1,050.0	-3,392.8	361.1	152.4	208.69	1.730	Level 3
12,700.0	9,107.1	9,079.1	9,077.1	33.5	216.6	89.28	-1,050.0	-3,392.8	398.7	189.5	209.21	1.906	Level 3
12,800.0	9,104.7	9,076.7	9,074.8	34.1	216.5	88.89	-1,050.0	-3,392.8	455.5	245.8	209.72	2.172	
12,900.0	9,102.3	9,074.3	9,072.4	34.7	216.4	88.50	-1,050.0	-3,392.8	525.3	315.1	210.23	2.499	
13,000.0	9,099.9	9,071.9	9,070.0	35.3	216.4	88.11	-1,050.0	-3,392.8	603.7	393.0	210.74	2.865	
13,100.0	9,097.4	9,069.5	9,067.6	36.0	216.3	87.71	-1,050.0	-3,392.8	687.7	476.5	211.23	3.256	
13,200.0	9,095.0	9,067.1	9,065.2	36.6	216.2	87.32	-1,050.0	-3,392.8	775.5	563.8	211.72	3.663	
13,300.0	9,092.6	9,064.7	9,062.8	37.2	216.1	86.93	-1,050.0	-3,392.8	866.0	653.8	212.21	4.081	
13,400.0	9,090.2	9,062.3	9,060.4	37.8	216.0	86.54	-1,050.0	-3,392.8	958.3	745.6	212.68	4.506	
13,500.0	9,087.8	9,059.9	9,058.0	38.5	215.9	86.15	-1,050.0	-3,392.8	1,052.1	838.9	213.15	4.936	

Company:	Devon Energy, Inc.	**Local Co-ordinate Reference:**	Well #4H
Project:	Eddy County (NAD83)	**TVD Reference:**	KB = 26' @ 3568.3usft
Reference Site:	Aquila 22 Fed Com	**MD Reference:**	KB = 26' @ 3568.3usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	#4H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB = 26' @ 3568.3usft	Coordinates are relative to: #4H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is -104.333334	Grid Convergence at Surface is: 0.26°

Ladder Plot



LEGEND

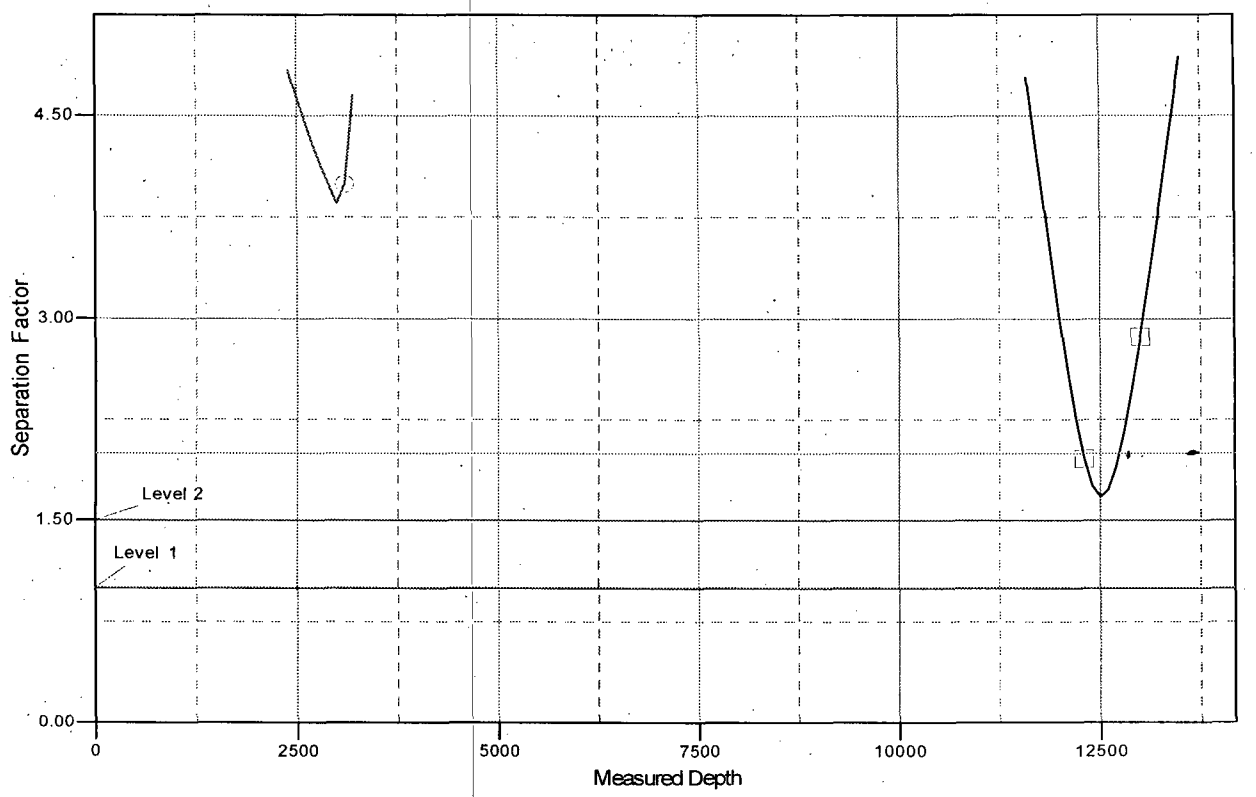
Arenoso 22 Fed Com #1 (Offset), OH, OH V0 — #3H, OH, Plan #1 V0

Company:	Devon Energy, Inc.	**Local Co-ordinate Reference:**	Well #4H
Project:	Eddy County (NAD83)	**TVD Reference:**	KB = 26' @ 3568.3usft
Reference Site:	Aquila 22 Fed Com	**MD Reference:**	KB = 26' @ 3568.3usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	#4H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Plan #2	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB = 26' @ 3568.3usft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: #4H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.26°

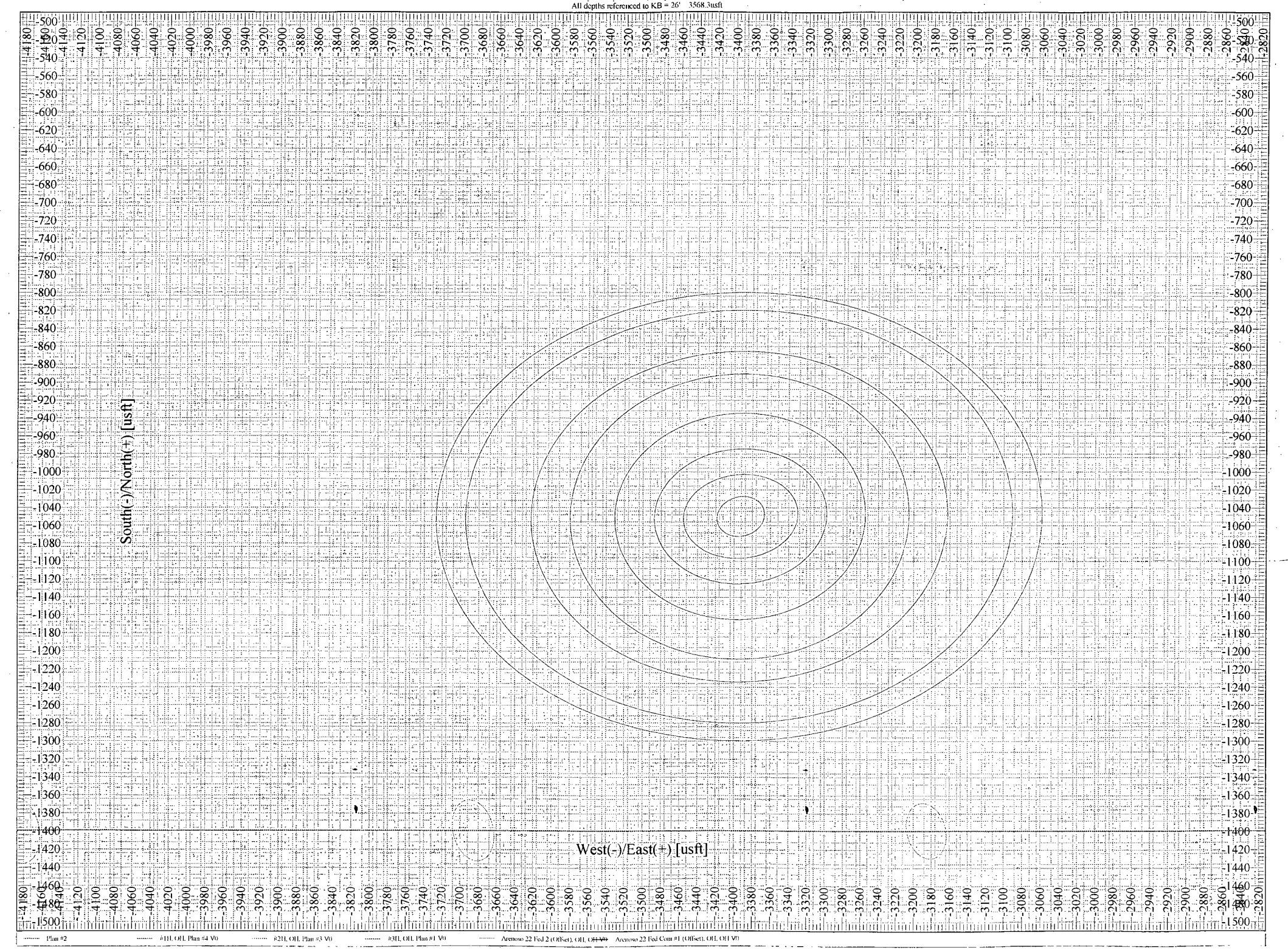
Separation Factor Plot



LEGEND

Arenoso 22 Fed Com #1 (Offset), OH, OH V0
#3H, OH, Plan #1 V0

Eddy County (NAD83) - Aquila 22 Fed Com
All depths referenced to KB = 26' 3568.3usft



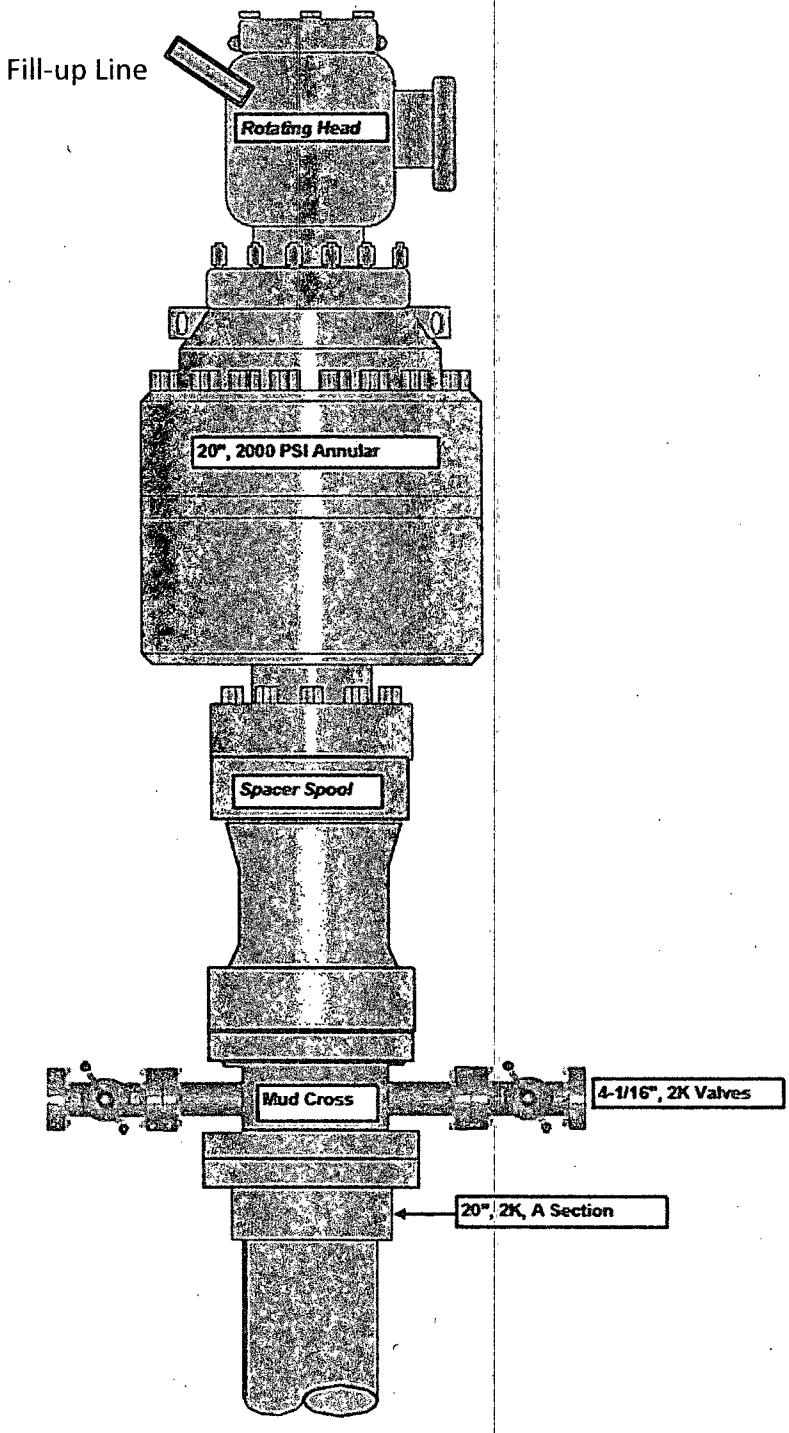
Plan #2 | #1H, OH, Plan #4 V0 | #2H, OH, Plan #3 V0 | #3H, OH, Plan #1 V0 | Arenoso 22 Fed 2 (Offset), OH, OH V0 | Arenoso 22 Fed Com #1 (Offset), OH, OH V0

NOTES REGARDING BLOWOUT PREVENTERS
Devon Energy Production Company, LP
Aquila 22 Fed Com 4H

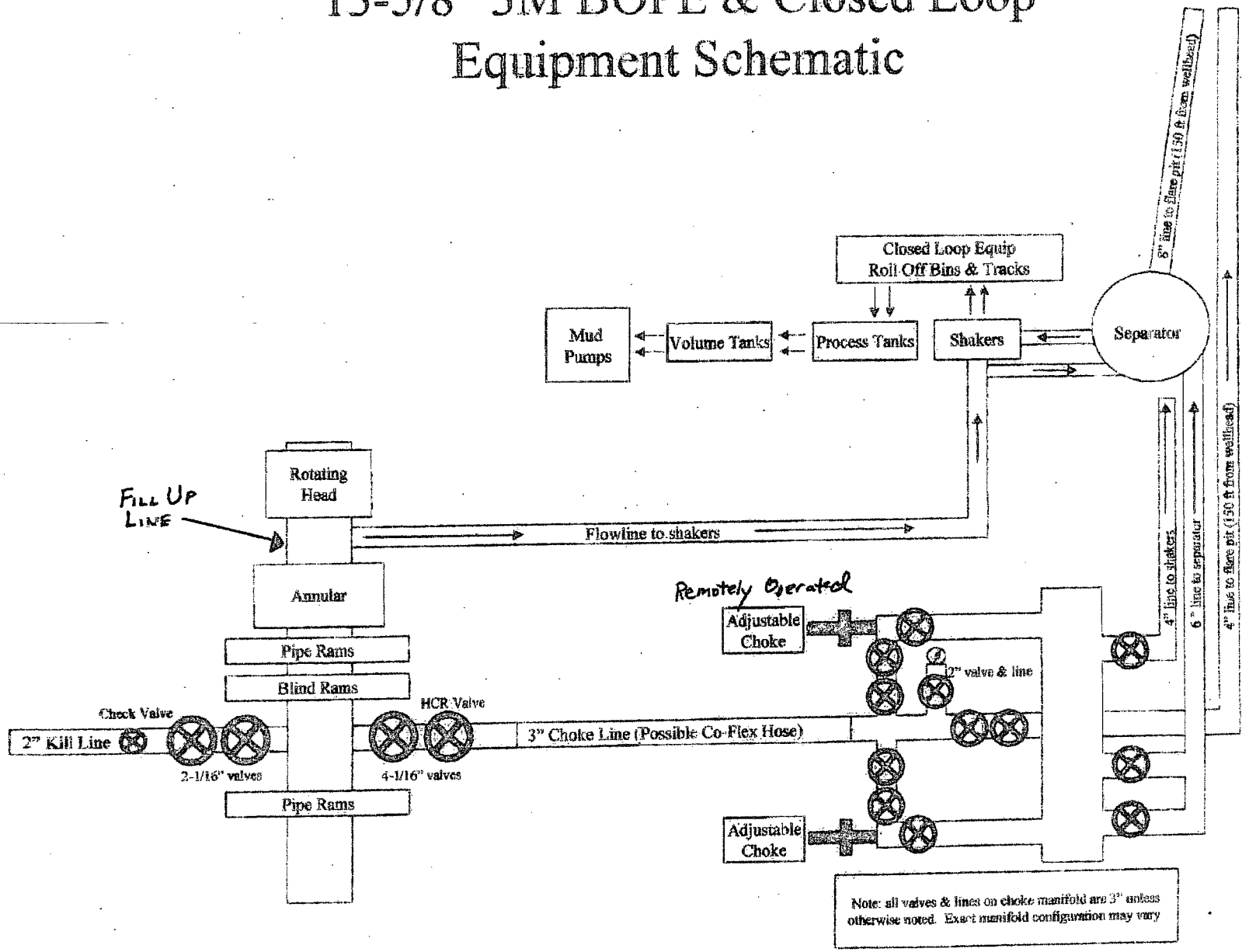
Surface Location: 2030' FSL & 225' FEL, Unit I, Sec 22 T19S R31E, Eddy, NM
Bottom Hole Location: 660' FSL & 340' FWL, Unit M, Sec 22 T19S R31E, Eddy, NM

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 fittings will be in operable condition to withstand a minimum 3000 psi working pressure.
4. All fittings will be flanged.
5. A full bore safety valve tested to a minimum 3000 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.

20" 2K Annular



13-5/8" 3M BOPE & Closed Loop Equipment Schematic



Continental
CONTITECH

Fluid Technology

ContiTech Beattie Corp.
Website: www.contitechbeattie.com

Monday, June 14, 2010

RE: Drilling & Production Hoses
Lifting & Safety Equipment

To Helmerich & Payne,

A Continental ContiTech hose assembly can perform as intended and suitable for the application regardless of whether the hose is secured or unsecured in its configuration. As a manufacturer of High Pressure Hose Assemblies for use in Drilling & Production, we do offer the corresponding lifting and safety equipment, this has the added benefit of easing the lifting and handling of each hose assembly whilst affording hose longevity by ensuring correct handling methods and procedures as well as securing the hose in the unlikely event of a failure; but in no way does the lifting and safety equipment affect the performance of the hoses providing the hoses have been handled and installed correctly It is good practice to use lifting & safety equipment but not mandatory

Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

ContiTech Beattie is part of the Continental AG Corporation and can offer the full support resources associated with a global organization.

Best regards,

Robin Hodgson
Sales Manager
ContiTech Beattie Corp

ContiTech Beattie Corp,
11535 Brittmoore Park Drive,
Houston, TX 77041
Phone: +1 (832) 327-0141
Fax: +1 (832) 327-0148
www.contitechbeattie.com

Hydrostatic Test Certificate

Continental CONTITECH

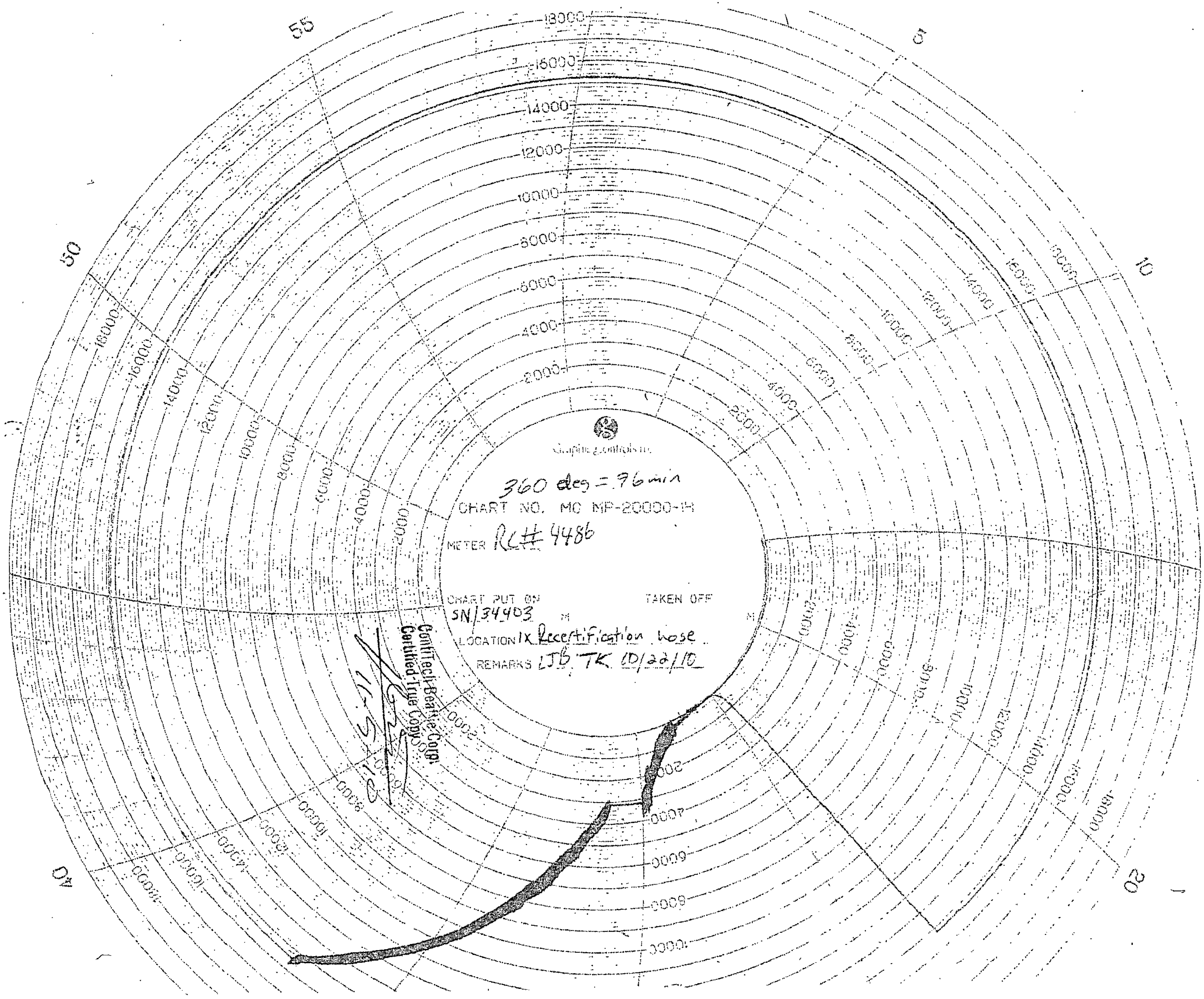
Certificate Number: 4520	PBC No: 10321	Customer Name & Address
		HELMERICH & PAYNE INT'L DRILLING CO
Customer Purchase Order No:	RIG 300	1437 SOUTH BOULDER
		TULSA, OK 74119
Project:		

Test Centre Address	Accepted by ContiTech Beattie Inspection		Accepted by Client Inspection
ContiTech Beattie Corp. 11535 Brittmoore Park Drive Houston, TX 77041 USA	Signed: Date:	Josh Sims 10/27/10	

We certify that the goods detailed hereon have been inspected by our Quality Management System, and to the best of our knowledge are found to conform to relevant industrial standards within the requirements of the purchase order as issued to ContiTech Beattie Corporation.

These goods were made in the United States of America.

Item	Part No	Description	Qnty	Serial Number	As Built Length (m)	Work Press	Test Press	Test Time (minutes)
1		3" ID 10K Choke & Kill Hose x 35ft OAL End A: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange End B: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange Working Pressure: 10,000psi Test Pressure: 15,000psi Serial#: 49106	1	49106		10 kpsi	15 kpsi	60



Graphic Controls Inc.
360 deg = 96 min
CHART NO. MC MP-20000-1H
METER RL# 4486
CHART PUT ON
SN/34403
TAKEN OFF
LOCATION IX Recertification hose
REMARKS LJB TK 10/22/10
ContiTech Beattie Corp.
Certified True Copy
11-5-10

devon

Devon Energy Corporation
20 North Broadway
Oklahoma City, Oklahoma 73102-8260

Hydrogen Sulfide (H_2S) Contingency Plan

For

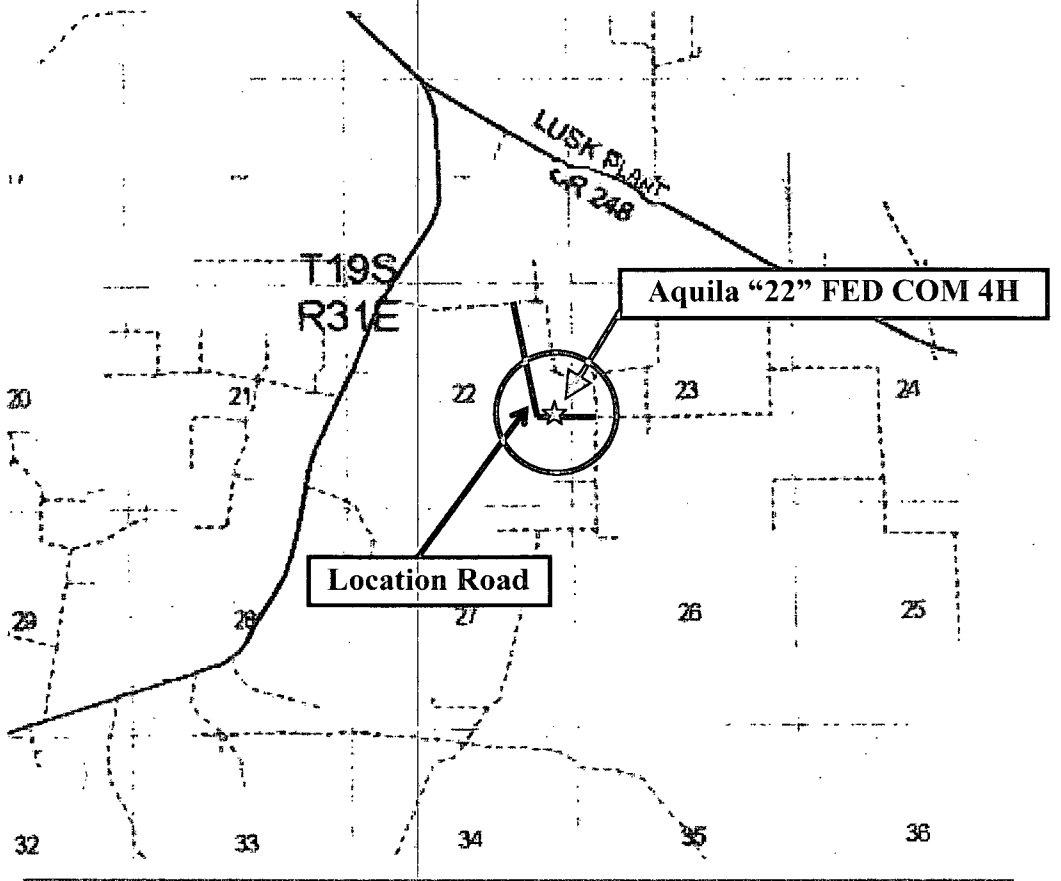
Aquila "22" FED COM 4H

Sec-22, T-19S R-31E
2030' FSL & 225' FEL,
LAT. = 32.6442833'N (NAD83)
LONG = 103.8492625'W

Eddy County NM

Aquila "22" FED COM 4H

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

   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.

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

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
New Mexico 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	1-800-256-9688 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:

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
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Safety Is an Art
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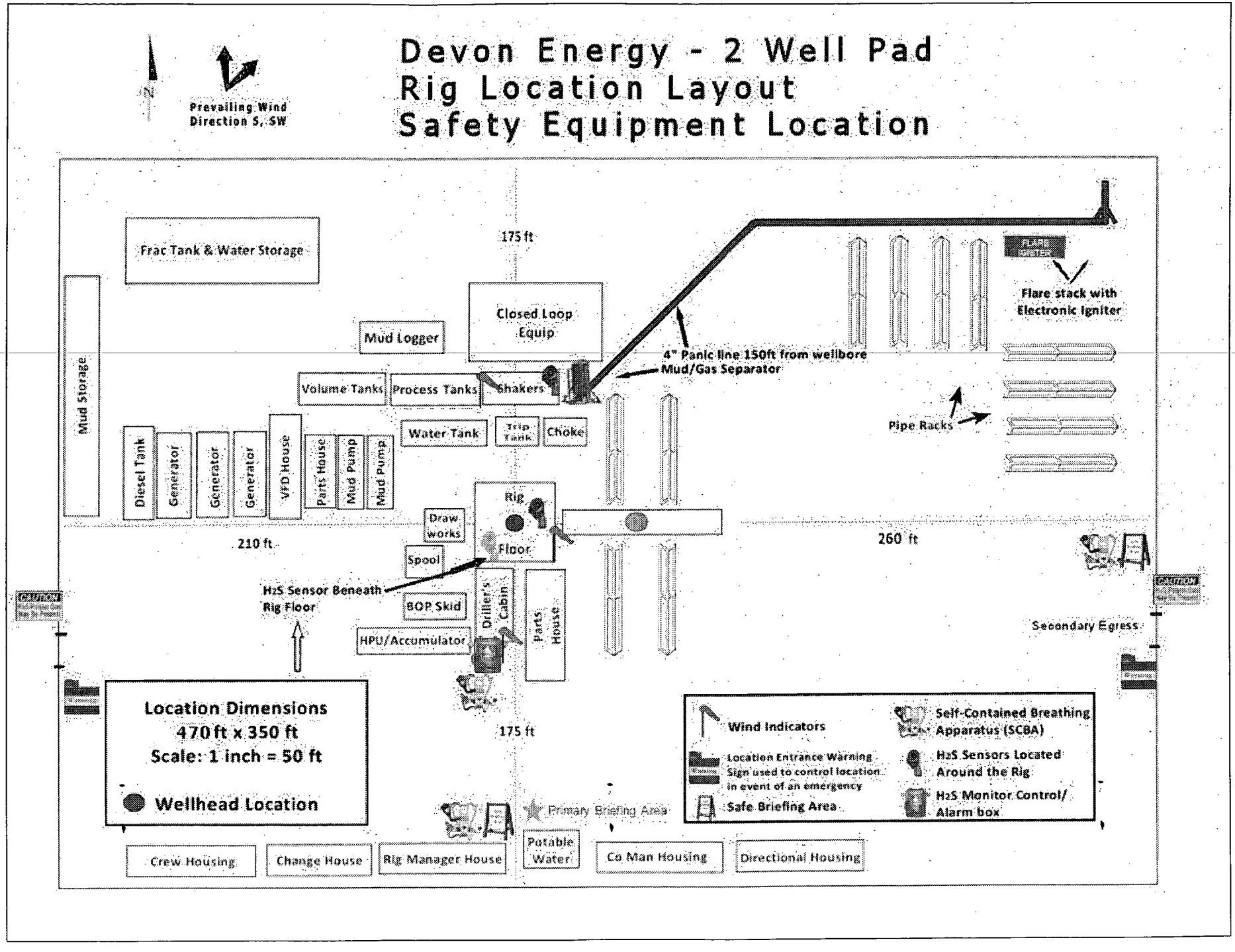
575.631.9661 • Fax 866.352.2183

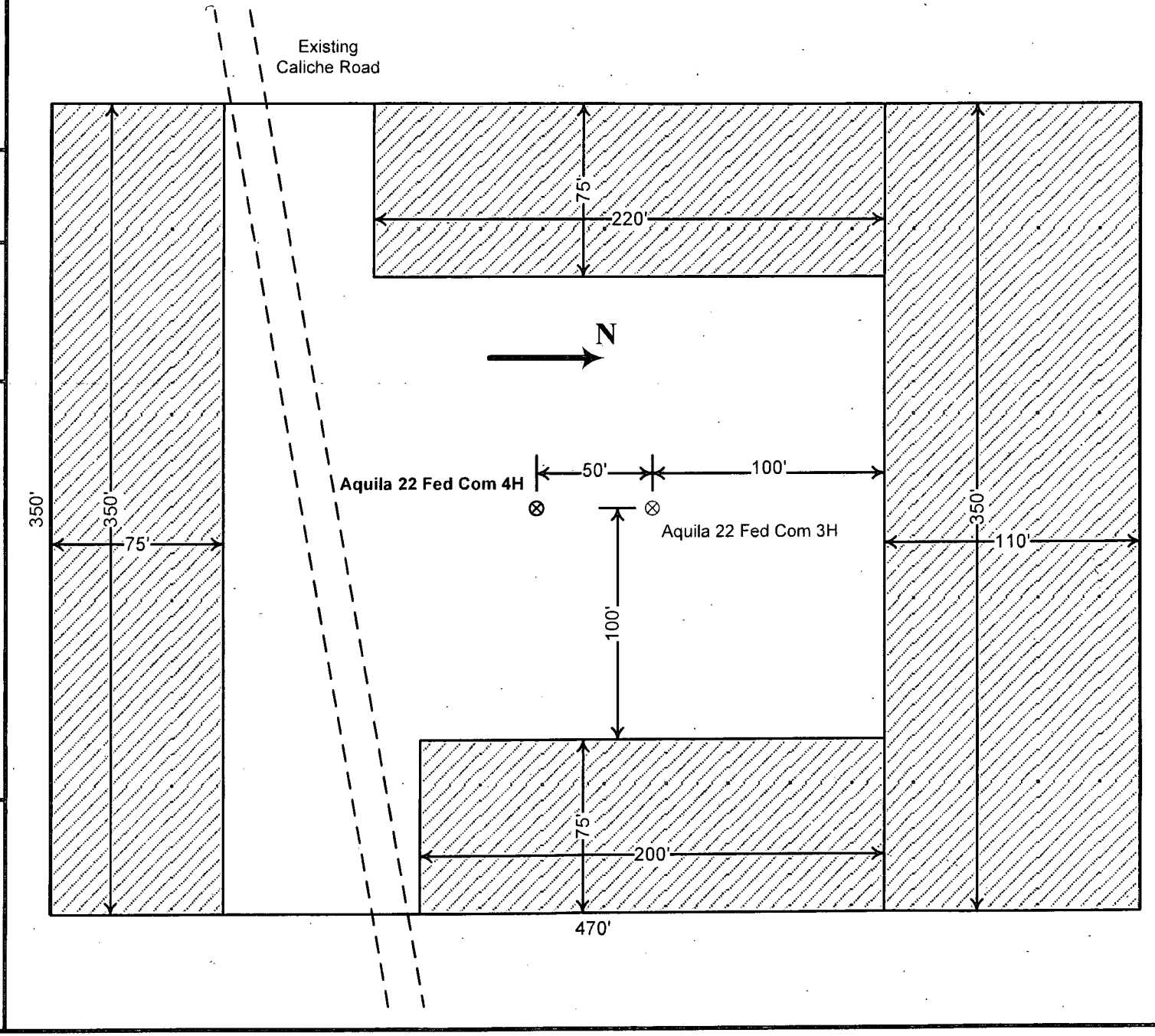
Devon Energy - 2 Well Pad
Rig Location Layout
Safety Equipment Location



devon

Proposed Interim Site Reclamation

Devon Energy Production Co.
Aquila 22 Fed Com 4H
2030' FSL & 225' FEL
Sec. 22-T19S-R31E
Eddy County, NM



Proposed Reclamation Area

Scale: 1in = 60ft.

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY
LEASE NO.:	NM92767
WELL NAME & NO.:	4H-AQUILA 22 FED COM
SURFACE HOLE FOOTAGE:	2030'/S. & 225'/E.
BOTTOM HOLE FOOTAGE	660'/S. 340'/W.
LOCATION:	Section 22, T. 19 S., R. 31 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

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

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Communitization Agreement
  - Lesser Prairie-Chicken Timing Stipulations
  - Ground-level Abandoned Well Marker
- ☐ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
  - H_2S – Onshore Order #6
  - Logging Requirements
  - Waste Material and Fluids
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
  - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

Communitization Agreement
A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales. In addition, the well sign shall include the surface and bottom hole lease numbers. If the Communitization Agreement number is known, it shall also be on the sign. If not, it shall be placed on the sign when the sign is replaced.

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

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

F. ON LEASE ACCESS ROADS

Road Width

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

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

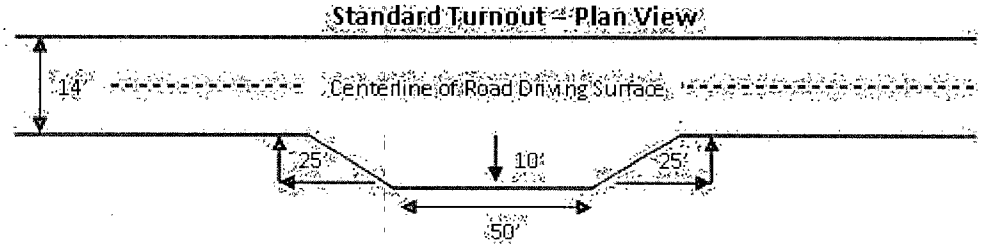
Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

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

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

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

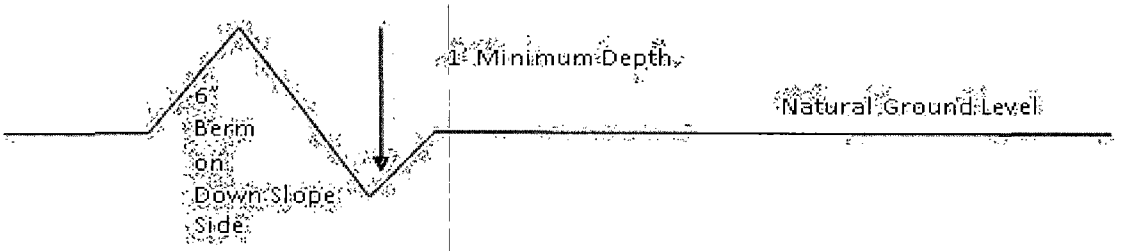
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

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

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

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

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

Fence Requirement

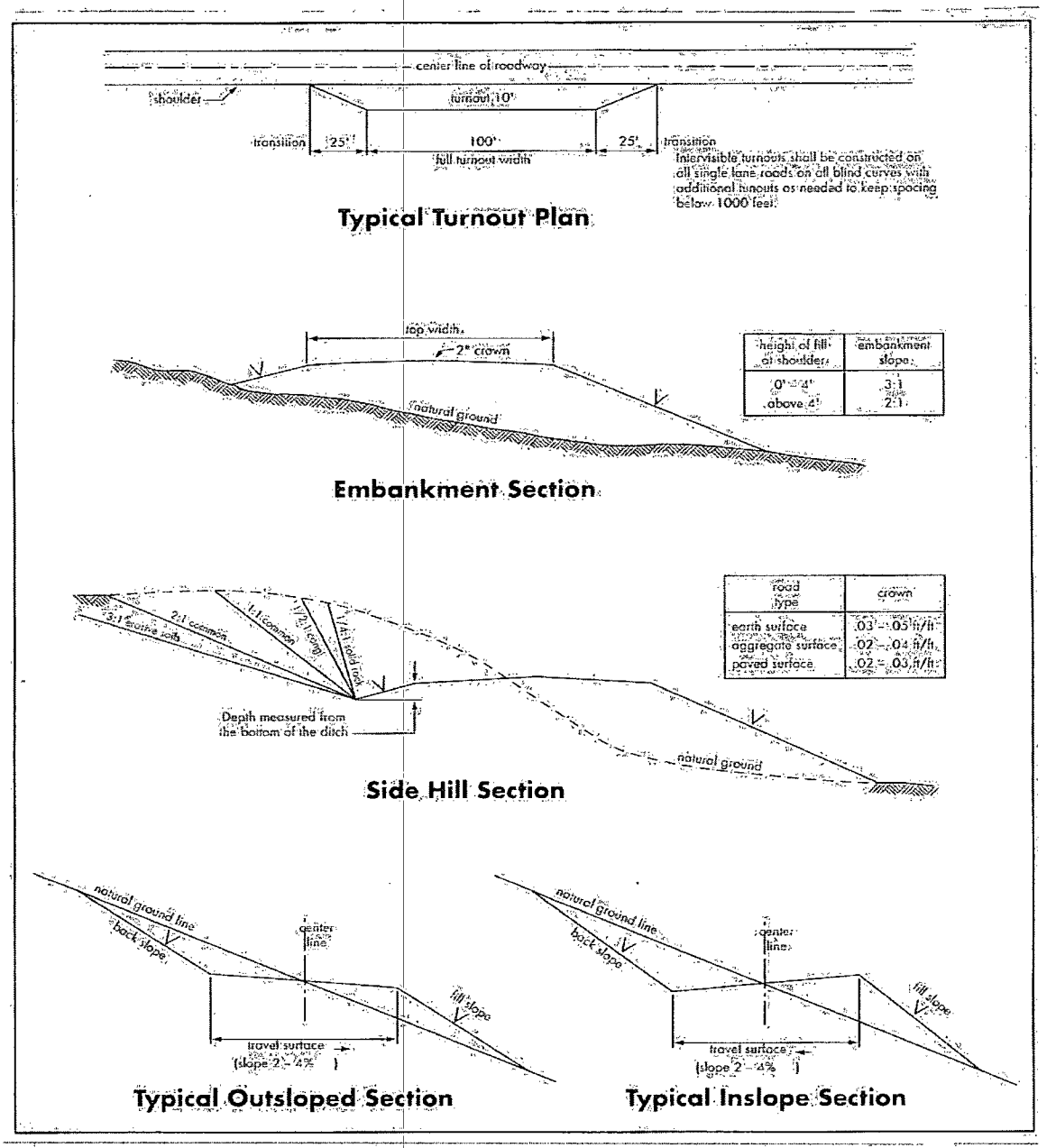
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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

Public Access

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

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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

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

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

1. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 feet prior to drilling into the **Yates** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

2. 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 are located, this does not include the dog house or stairway area.

3. **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. 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

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

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

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

Possible water and brine flows in the Salado and Artesia groups.
Possible lost circulation in the Artesia group and Capitan Reef.

1. The **20** inch surface casing shall be set at **approximately 650 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface.

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

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

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

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

2. The minimum required fill of cement behind the **13-3/8** inch 1st intermediate casing is:

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

3. The minimum required fill of cement behind the **9-5/8** inch 2nd intermediate casing is: **DV tool shall be set a minimum of 50 feet below previous casing shoe.**

   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 Capitan Reef. Additional cement may be required – excess calculates to 12%.**

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

   a. First stage to DV tool, cement shall:

   ☒ 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 shall:

   ☒ Cement as proposed. 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.

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**. 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 **2000 (2M)** psi.

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

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **3000 (3M)** psi.

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

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

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

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

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

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

D. DRILL STEM TEST

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

E. WASTE MATERIAL AND FLUIDS

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

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

CRW 012213

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

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

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

IX. INTERIM RECLAMATION

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

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

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

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

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

X. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

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

Seed Mixture 2, for Sandy Sites

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

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

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

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

*Pounds of pure live seed:

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