

R-111-POTASH

Form 3160-3
(April 2004)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 20075. Lease Serial No.
NMNM45235 SH; NMNM77046 B*✓

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No.
North Pure Gold 8 Federal 15H

9. API Well No.

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

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

Unit A SEC 17 T23S R31E

12. County or Parish
Eddy County13. State
NM1a. Type of work: ☒ DRILL ☐ REENTER1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone2. Name of Operator
Devon Energy Production Company, LP3a. Address 20 North Broadway
Oklahoma City, Oklahoma City 73102-82603b. Phone No. (include area code)
405-228-8699

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

At surface 440' FNL & 330' FEL

At proposed prod. zone 330' FNL & 330' FEL Unit A Sec 8 T23S R31E/PP: 440 FNL & 330 FEL

14. Distance in miles and direction from nearest town or post office*
Approximately 17 miles east of Loving, NM.15. Distance from proposed* location to nearest property or lease line, ft.
(Also to nearest drig. unit line, if any)
330'16. No. of acres in lease
480 Acres17. Spacing Unit dedicated to this well
200 Acres18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
See attached map.19. Proposed Depth
13,720' MD 8635' TVD20. BLM/BIA Bond No. on file
CO-110421. Elevations (Show whether DF, KDB, RT, GL, etc.)
3340' GL

22. Approximate date work will start*

23. Estimated duration
45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

- | | |
|---|--|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature

Title

Regulatory Analyst

Name (Printed Typed)

Judy A. Barnett

Date

08/31/2010

Approved by (Signature)

/s/ Linda S. C. Rundell

Name (Printed Typed)

/s/ Linda S. C. Rundell

Date

OCT 27 2010

Title

STATE DIRECTOR

Office

NM STATE 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.

*(Instructions on page 2)

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

CARLSBAD CONTROLLED WATER BASIN

RECEIVED

NOV 05 2010

NMOCD ARTESIA

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND 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 and Natural Resources Department

Form C-102

Revised July 16, 2010

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015-38282	Pool Code 40295	Pool Name LOS MEDANOS; BONE SPRING
Property Code 30623	Property Name NORTH PURE GOLD "8" FEDERAL	Well Number 15H
OGRID No. 6137	Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	Elevation 3340'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	17	23 S	31 E		440	NORTH	330	EAST	EDDY

Bottom Hole Location If Different From Surface

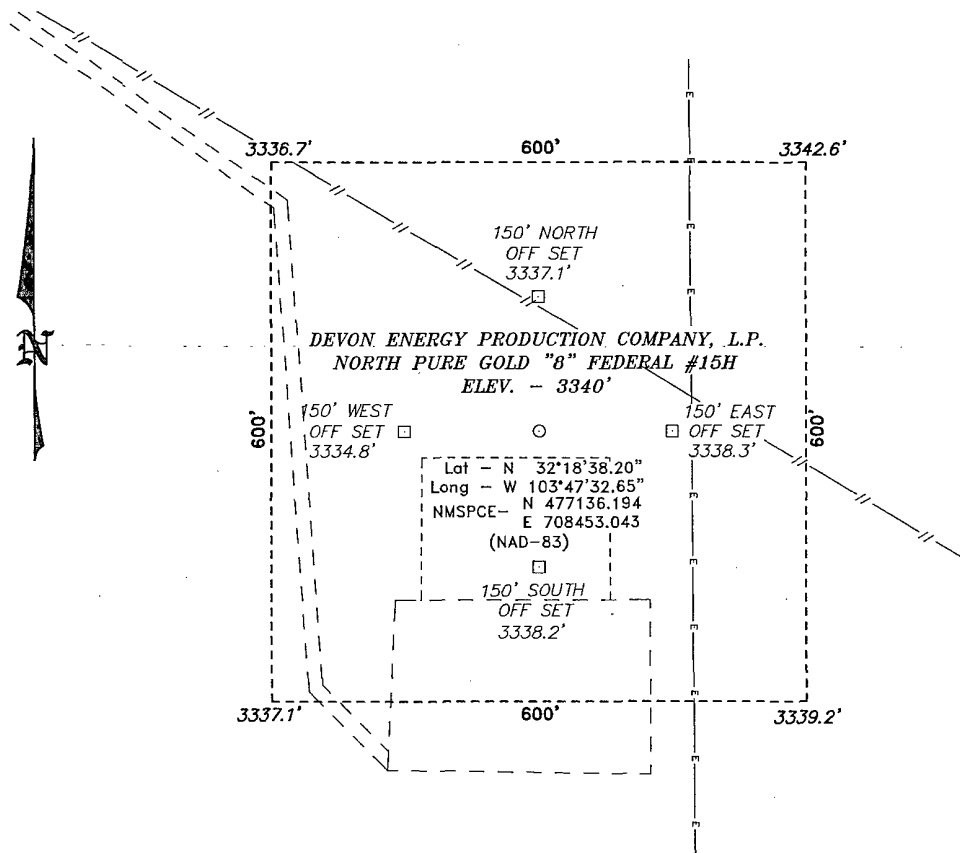
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	8	23 S	31 E		330	NORTH	330	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
200			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p>PROPOSED BOTTOM HOLE LOCATION Lat - N 32°19'31.36" Long - W 103°47'32.71" NMSPC - N 482525.959 E 708420.618 (NAD-83)</p> <p>SURFACE LOCATION Lat - N 32°18'38.02" Long - W 103°47'32.65" NMSPC - N 477136.194 E 708453.043 (NAD-83)</p>		<p>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 unless 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.</p> <p><i>Judy A. Barnett</i> 9/2/10 Signature Date Judy A. Barnett Regulatory Analyst Printed Name Email Address</p> <p>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.</p> <p><i>GARY L. JONES</i> Date Surveyed Signature & Seal of Professional Surveyor W.O. Jones</p> <p>Certificate No. Gary L. Jones 7977 BASIN SURVEYS</p>
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SECTION 17, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM MILE MARKER 18 OF HWY 128, GO NORTH 0.2 MILES TO LEASE ROAD, ON LEASE ROAD GO NORTHERLY 1.2 MILES THENCE EAST 0.3 MILES TO NPG #5 WELL PAD AND PROPOSED LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.

REF: NORTH PURE GOLD "8" FEDERAL #15H / WELL PAD TOPO

THE NORTH PURE GOLD "8" FEDERAL #15H LOCATED 440'

FROM THE NORTH LINE AND 330' FROM THE EAST LINE OF

SECTION 17, TOWNSHIP 23 SOUTH, RANGE 31 EAST,

N.M.P.M., EDDY COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 23067

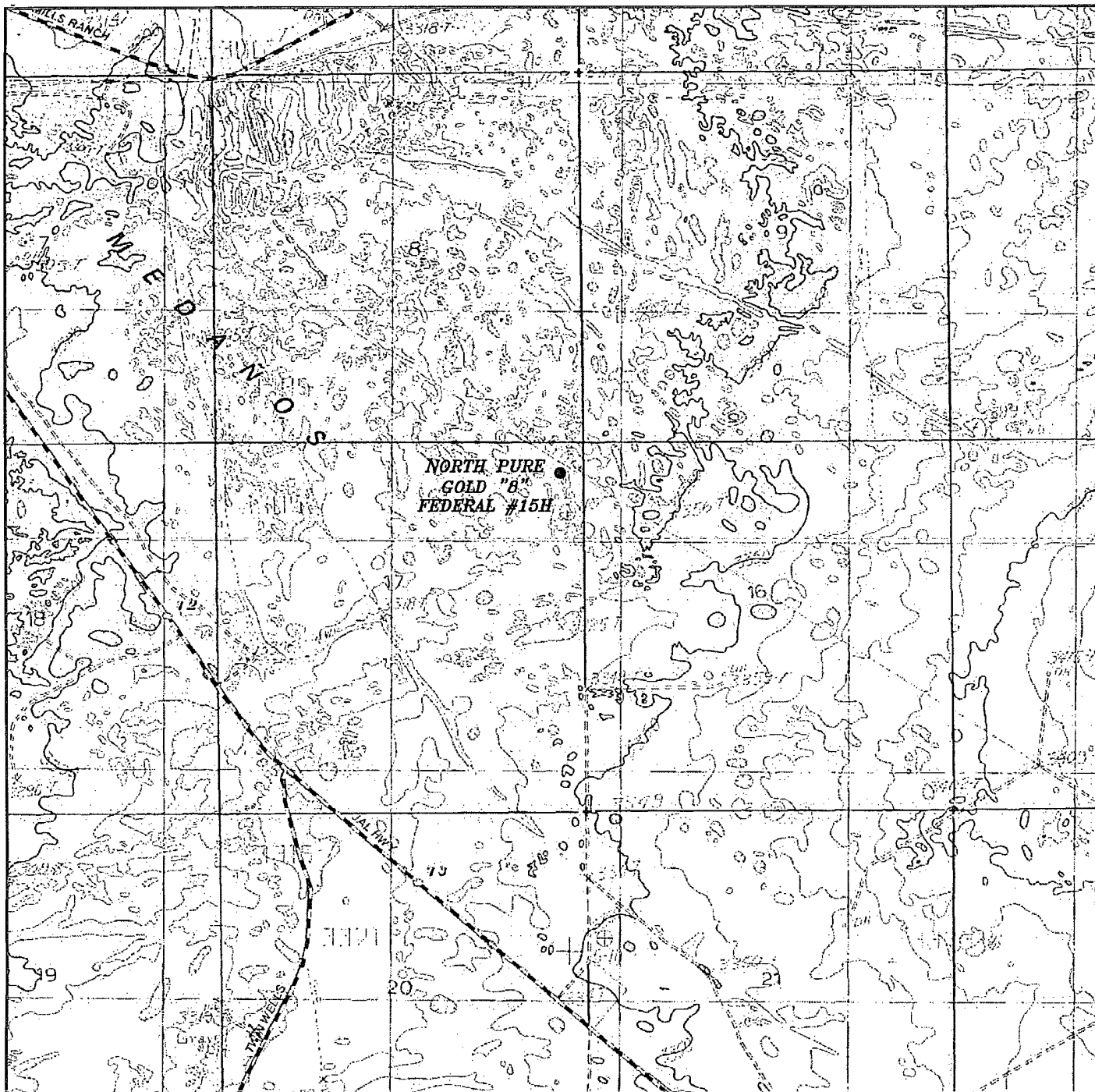
Drawn By: J. SMALL

Date: 07-30-2010

Disk: JMS 23067

Survey Date: 07-08-2010

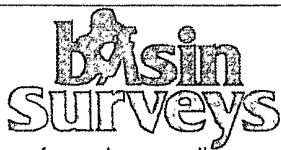
Sheet 1 of 1 Sheets



NORTH PURE GOLD "8" FEDERAL #15H

Located 440' FNL and 330' FEL

Section 17, Township 23 South, Range 31 East,
N.M.P.M., Eddy County, New Mexico.



focused on excellence
in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

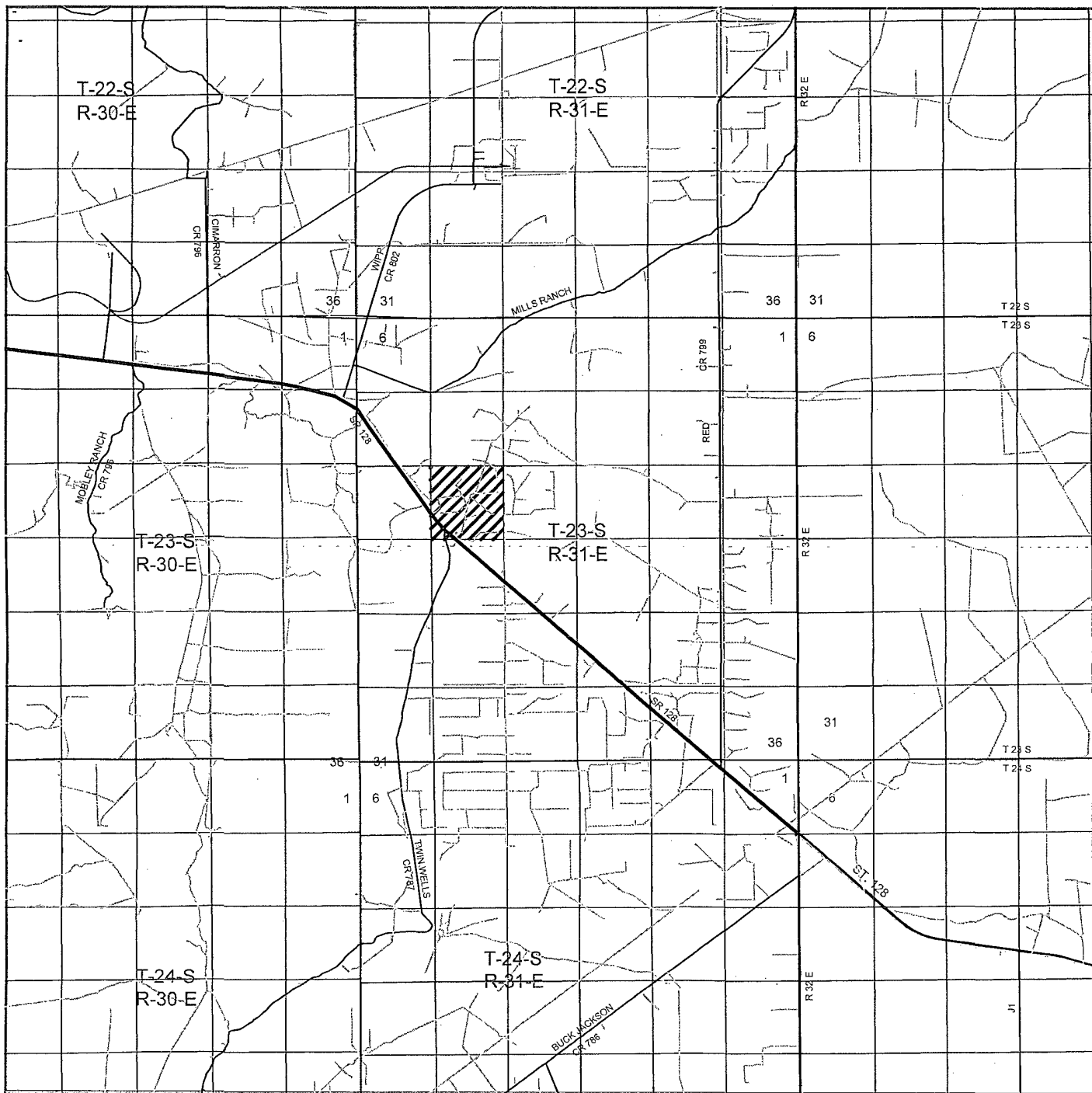
W.O. Number: JMS 23067

Survey Date: 07-08-2010

Scale: 1" = 2000'

Date: 07-30-2010

**DEVON ENERGY
PRODUCTION
COMPANY, L.P.**



NORTH PURE GOLD "8" FEDERAL #15H
 Located 440' FNL and 330' FEL
 Section 17, Township 23 South, Range 31 East,
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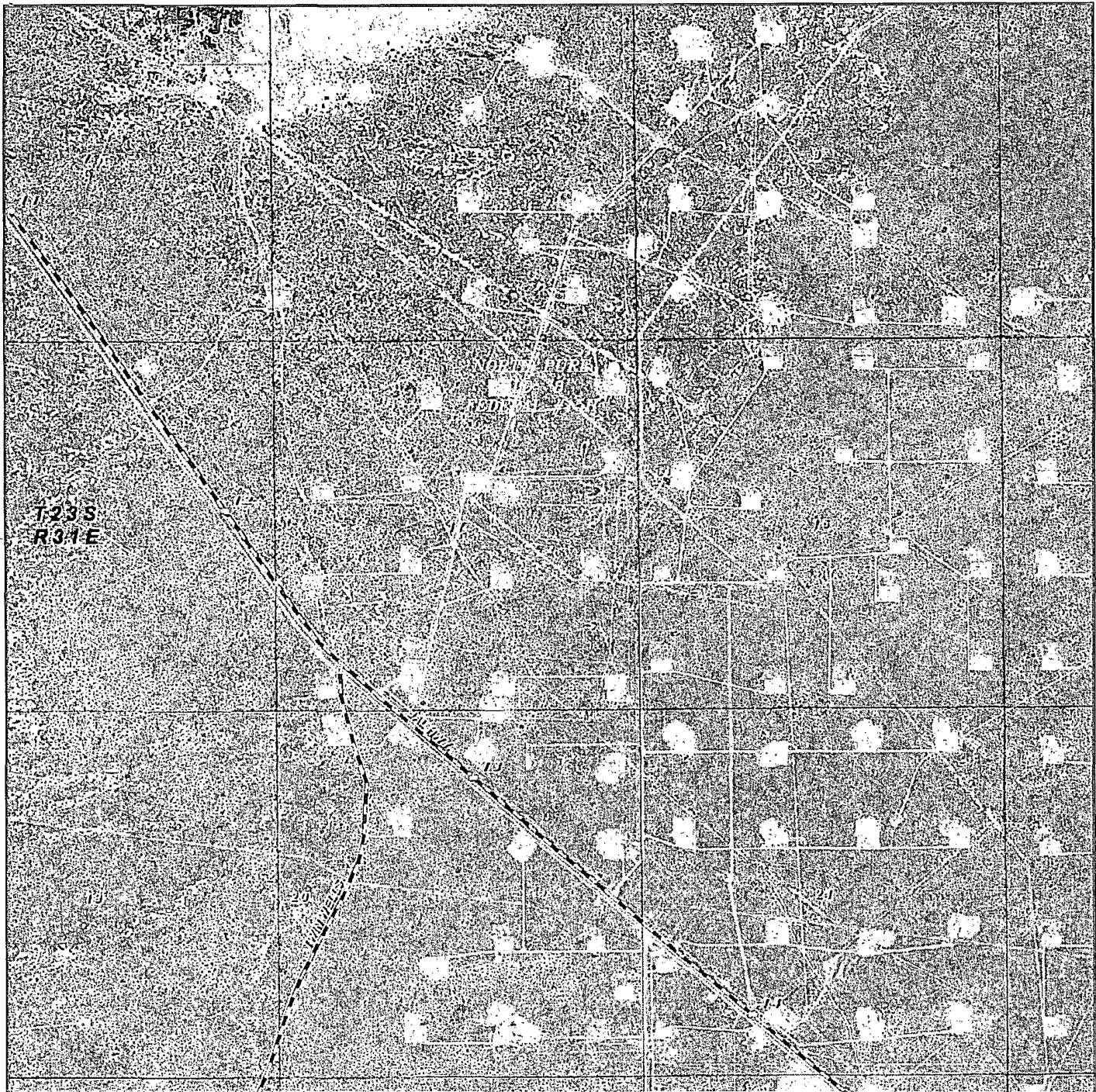
W.O. Number: JMS 23067

Survey Date: 07-08-2010

Scale: 1" = 2 Miles

Date: 07-30-2010

DEVON ENERGY
PRODUCTION
COMPANY, L.P.



NORTH PURE GOLD "8" FEDERAL #15H
Located 440' FNL and 330' FEL
Section 17, Township 23 South, Range 31 East,
N.M.P.M., Eddy County, New Mexico.



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W.O. Number: JMS 23067

Scale: 1" = 2000'

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND



DEVON ENERGY
PRODUCTION
COMPANY, L.P.

DRILLING PROGRAM

Devon Energy Production Company, LP

North Pure Gold 8 Federal 15H

Surface Location: 440 FNL & 330 FEL, Unit A, Sec 17 T23S R31E, Eddy, NM

Bottom hole Location: 330 FNL & 330 FEL, Unit A, Sec 8 T23S R31E, Eddy, NM

1. Geologic Name of Surface Formation

a. Quaternary

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

a. Rustler	431'
b. Salado	763'
c. Base Salt	3895'
d. Delaware	4127'
e. Bell Canyon	4169'
f. Cherry Canyon	5043'
g. Brushy Canyon	6335'
h. Bone Spring	7996'
i. Total Depth	13,720'

*No water listed
No other potential oil & gas marked.
Do they exist?*

Oil & Gas

see COA

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13 3/8" casing at 500' and circulating cement back to surface. The fresh water sands will be protected by setting 9 5/8" casing at 4100' and circulating cement to surface. The Delaware intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement.

3. Casing Program:

<u>Hole</u>	<u>Hole</u>	<u>OD Csg</u>	<u>Casing</u>	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
<u>Size</u>	<u>Interval</u>		<u>Interval</u>			
17 1/2"	0'-500'	13 3/8"	0'-500'	48#	STC	H-40
12 1/4"	500'-4100'	9 5/8"	0-4100'	36#	LTC	J-55
8 3/4"	4100'-7800'	5 1/2"	0'-7800'	40#	LTC	HCP-110
8 3/4"	7800'-13,720'	5 1/2"	7800'-13,720'	17#	BTC	HCP-110

Design Parameter Factors:

<u>Casing Size</u>	<u>Collapse Design</u>	<u>Burst Design</u>	<u>Tension Design</u>
	<u>Factor</u>	<u>Factor</u>	<u>Factor</u>
13 3/8"	3.29	7.39	13.42
9 5/8" 40#	1.21	1.85	3.17
5 1/2" 17#	1.77	2.18	1.52
5 1/2" 17#	1.56	2.07	4.45

4. Cement Program:

see COH

13 3/8" Surface

Lead: 250sx Cl C + 2% bwoc Calcium Chloride + 0.125#/sx CF + 4% bwoc Bentonite + 81.4% FW, 13.5 ppg, **Yield:** 1.75 cf/sx

TOC @ surface.

Tail: 250sx Cl C + 2% bwoc Calcium Chloride + 0.125#/sx CF + 56.3% FW, 14.8 ppg. **Yield:** 1.35 cf/sx

9 5/8" Intermediate

Lead: 1200sx (35:65) Poz (Fly Ash): Cl C + 5% bwow Sodium Chloride + 0.125#/sx CF + 6% bwoc Bentonite + 107.8% FW, 12.5 ppg **Yield:** 2.04 cf/sx. **TOC @ surface**

Tail: 300sx (60:40) Poz (Fly Ash): Cl C + 5% bwow Sodium Chloride + 0.125#/sx CF + 4% bwoc MPA-5 + 64.7% Water, 13.8 ppg. **Yield:** 1.37 cf/sx.

5 1/2" Production

1st Stage

Lead: 500sx (35:65) Poz (Fly Ash): Cl H + 5% bwow Sodium Chloride + 0.3% bwoc CD-32 + 0.5% bwoc FL-25 + 2% bwoc Bentonite + 0.6% bwoc Sodium Metasilicate + 0.5% bwoc FL-52A + 102.5% FW, 12.5 ppg. **Yield:** 2.01 cf/sx.

Tail: 1,520sx (50:50) Poz (Fly Ash): Cl H Cement + 1% bwow Sodium Chloride + 0.2% bwoc R-3 + 0.125#/sx CF + 0.5% bwoc BA-10A + 4% bwoc MPA-5 + 58.3% FW, 14.2 ppg. **Yield:** 1.31 cf/sx. **DV TOOL @ 6,000'**

2nd Stage

Lead: 400sx Cl C + 1% bwow Sodium Chloride + 0.125 #/sx CF + 157.8% FW, 11.4 ppg. **Yield:** 2.89 cf/sk

Tail: 100sx (60:40) Poz (Fly Ash): Cl C + 5% bwow Sodium Chloride + 0.125#/sx CF + 4% bwoc MPA-5 + 65.4% FW, 13.8 ppg. **Yield:** 1.37 cf/sx. **DV TOOL @ 3,500'**

3rd Stage

Lead: 350sx Cl C + 1% bwow Sodium Chloride + 0.125 #/sx CF + 157.8% FW, 11.4 ppg. **Yield:** 2.91 cf/sx **TOC @ surface. Tail:**

100sx (60:40) Poz (Fly Ash): Cl C + 5% bwow Sodium Chloride + 0.125#/sx CF + 4% bwoc MPA-5 + 65.4% FW, 13.8 ppg **Yield:** 1.37 cf/sk,

see COH

The above cement volumes could be revised pending the caliper measurement from the open hole logs. All casing is new and API approved.

The BOP system used to drill the intermediate hole will consist of a 13-5/8" 5M Double 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 the surface casing shoe.

The BOP system used to drill the production hole will consist of a 13-5/8" 5M Double 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 the intermediate casing shoe.

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 to at least 3,000 psi WP.

5. Proposed Mud Circulation System

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc</u>	<u>Fluid Loss</u>	<u>Type System</u>
0' - 500'	8.4-9.0	28-34	NC	FW
500 - 4100'	9.8-10.0	28-32	NC	Brine
4100-13,720'	8.4-9.0	28-32	NC-12	FW

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

6. Auxiliary Well Control and Monitoring Equipment:

- A Kelly cock will be in the drill string at all times.
- A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
- Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 4 1/2" liner is cemented. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

7. Logging, Coring, and Testing Program:

- Drill stem tests will be based on geological sample shows.
- 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.
- The open hole electrical logging program will be:
 - Total Depth to Intermediate Casing Dual Laterolog-Micro Laterolog with SP and Gamma Ray. Compensated Neutron - Z Density log with Gamma Ray and Caliper.
 - Total Depth to Surface Compensated Neutron with Gamma Ray
 - No coring program is planned
 - Additional testing will be initiated subsequent to setting the 5 1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

8. Potential Hazards:

- 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 135°. No H2S is anticipated to be encountered.

9. 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, Inc.
Eddy County
North Pure Gold "8" Federal
#15H
OH

Plan: Plan #1

Pathfinder X & Y Planning Report

31 August, 2010

PATHFINDER®

A Schlumberger Company



Pathfinder

Pathfinder X & Y Planning Report



Company:	Devon Energy, Inc.	Local Co-ordinate Reference:	Well #15H
Project:	Eddy County	TVD Reference:	WELL @ 3365.00ft (25' KB H&P #416)
Site:	North Pure Gold "g" Federal	MD Reference:	WELL @ 3365.00ft (25' KB H&P #416)
Well:	#15H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	Midland Database

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

Site	North Pure Gold "g" Federal	Northing:	477,709.426 ft	Latitude:	32° 18' 43.761 N
Site Position:		Easting:	707,081.451 ft	Longitude:	103° 47' 48.597 W
From:	Map	Slot Radius:		Grid Convergence:	0.29 °
Position Uncertainty:	0.00 ft				

Well	#15H	Northing:	477,136.194 ft	Latitude:	32° 18' 38.020 N
Well Position	+N/-S +E/-W	Easting:	708,453.043 ft	Longitude:	103° 47' 32.649 W
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft	Ground Level:	3,340.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Dip Angle (°)	Field Strength (nT)	
	IGRF200510	10/31/2010	60.27	48,741	

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	359.66	

Survey Tool Program	Date	08/31/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	13,719.71	Plan #1 (OH)	Pathfinder	Pathfinder MWD	



Pathfinder
Pathfinder X & Y Planning Report



Company: Devon Energy, Inc.
Project: Eddy County
Site: North Pure Gold "g" Federal
Well: #15H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #15H
WELL @ 3365.00ft (25' KB H&P #416)
WELL @ 3365.00ft (25' KB H&P #416)
Grid
Minimum Curvature
Midland Database

Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
0.00	0.00	0.00	0.00	-3,365.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
100.00	0.00	0.00	100.00	-3,265.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
200.00	0.00	0.00	200.00	-3,165.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
300.00	0.00	0.00	300.00	-3,065.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
400.00	0.00	0.00	400.00	-2,965.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
500.00	0.00	0.00	500.00	-2,865.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
600.00	0.00	0.00	600.00	-2,765.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
700.00	0.00	0.00	700.00	-2,665.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
800.00	0.00	0.00	800.00	-2,565.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
900.00	0.00	0.00	900.00	-2,465.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
1,000.00	0.00	0.00	1,000.00	-2,365.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
1,100.00	0.00	0.00	1,100.00	-2,265.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
1,200.00	0.00	0.00	1,200.00	-2,165.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
1,300.00	0.00	0.00	1,300.00	-2,065.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
1,400.00	0.00	0.00	1,400.00	-1,965.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
1,500.00	0.00	0.00	1,500.00	-1,865.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
1,600.00	0.00	0.00	1,600.00	-1,765.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
1,700.00	0.00	0.00	1,700.00	-1,665.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
1,800.00	0.00	0.00	1,800.00	-1,565.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
1,900.00	0.00	0.00	1,900.00	-1,465.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
2,000.00	0.00	0.00	2,000.00	-1,365.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
2,100.00	0.00	0.00	2,100.00	-1,265.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
2,200.00	0.00	0.00	2,200.00	-1,165.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
2,300.00	0.00	0.00	2,300.00	-1,065.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
2,400.00	0.00	0.00	2,400.00	-965.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
2,500.00	0.00	0.00	2,500.00	-865.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
2,600.00	0.00	0.00	2,600.00	-765.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04



Pathfinder
Pathfinder X & Y Planning Report



Company: Devon Energy, Inc.
Project: Eddy County
Site: North Pure Gold "8" Federal
Well: #15H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #15H
TVD Reference: WELL @ 3365.00ft (25' KB H&P #416)
MD Reference: WELL @ 3365.00ft (25' KB H&P #416)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
2,700.00	0.00	0.00	2,700.00	-665.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
2,800.00	0.00	0.00	2,800.00	-565.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
2,900.00	0.00	0.00	2,900.00	-465.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
3,000.00	0.00	0.00	3,000.00	-365.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
3,100.00	0.00	0.00	3,100.00	-265.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
3,200.00	0.00	0.00	3,200.00	-165.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
3,300.00	0.00	0.00	3,300.00	-65.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
3,400.00	0.00	0.00	3,400.00	35.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
3,500.00	0.00	0.00	3,500.00	135.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
3,600.00	0.00	0.00	3,600.00	235.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
3,700.00	0.00	0.00	3,700.00	335.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
3,800.00	0.00	0.00	3,800.00	435.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
3,900.00	0.00	0.00	3,900.00	535.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
4,000.00	0.00	0.00	4,000.00	635.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
4,100.00	0.00	0.00	4,100.00	735.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
4,200.00	0.00	0.00	4,200.00	835.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
4,300.00	0.00	0.00	4,300.00	935.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
4,400.00	0.00	0.00	4,400.00	1,035.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
4,500.00	0.00	0.00	4,500.00	1,135.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
4,600.00	0.00	0.00	4,600.00	1,235.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
4,700.00	0.00	0.00	4,700.00	1,335.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
4,800.00	0.00	0.00	4,800.00	1,435.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
4,900.00	0.00	0.00	4,900.00	1,535.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
5,000.00	0.00	0.00	5,000.00	1,635.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
5,100.00	0.00	0.00	5,100.00	1,735.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
5,200.00	0.00	0.00	5,200.00	1,835.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
5,300.00	0.00	0.00	5,300.00	1,935.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04



Pathfinder
Pathfinder X & Y Planning Report



Company: Devon Energy, Inc.
Project: Eddy County
Site: North Pure Gold "8" Federal
Well: #15H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #15H
WELL @ 3365.00ft (25' KB H&P #416)
WELL @ 3365.00ft (25' KB H&P #416)
Grid
Minimum Curvature
Midland Database

Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	EW (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
5,400.00	0.00	0.00	5,400.00	2,035.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
5,500.00	0.00	0.00	5,500.00	2,135.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
5,600.00	0.00	0.00	5,600.00	2,235.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
5,700.00	0.00	0.00	5,700.00	2,335.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
5,800.00	0.00	0.00	5,800.00	2,435.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
5,900.00	0.00	0.00	5,900.00	2,535.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
6,000.00	0.00	0.00	6,000.00	2,635.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
6,100.00	0.00	0.00	6,100.00	2,735.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
6,200.00	0.00	0.00	6,200.00	2,835.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
6,300.00	0.00	0.00	6,300.00	2,935.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
6,400.00	0.00	0.00	6,400.00	3,035.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
6,500.00	0.00	0.00	6,500.00	3,135.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
6,600.00	0.00	0.00	6,600.00	3,235.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
6,700.00	0.00	0.00	6,700.00	3,335.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
6,800.00	0.00	0.00	6,800.00	3,435.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
6,900.00	0.00	0.00	6,900.00	3,535.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
7,000.00	0.00	0.00	7,000.00	3,635.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
7,100.00	0.00	0.00	7,100.00	3,735.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
7,200.00	0.00	0.00	7,200.00	3,835.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
7,300.00	0.00	0.00	7,300.00	3,935.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
7,400.00	0.00	0.00	7,400.00	4,035.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
7,500.00	0.00	0.00	7,500.00	4,135.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
7,600.00	0.00	0.00	7,600.00	4,235.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
7,700.00	0.00	0.00	7,700.00	4,335.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
7,800.00	0.00	0.00	7,800.00	4,435.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
7,900.00	0.00	0.00	7,900.00	4,535.00	0.00	0.00	0.00	0.00	477,136.19	708,453.04
7,918.75	0.00	0.00	7,918.75	4,553.75	0.00	0.00	0.00	0.00	477,136.19	708,453.04



Pathfinder
Pathfinder X & Y Planning Report



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Project: Eddy County
Site: North Pure Gold "8" Federal
Well: #15H
Wellbore: OH
Design: Plan #1

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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
7,950.00	2.50	355.66	7,949.99	4,584.99	0.68	-0.05	0.68	8.00	477,136.87	708,452.99
8,000.00	6.50	355.66	7,999.83	4,634.83	4.59	-0.35	4.59	8.00	477,140.78	708,452.69
8,050.00	10.50	355.66	8,049.27	4,684.27	11.96	-0.91	11.96	8.00	477,148.15	708,452.14
8,100.00	14.50	355.66	8,098.07	4,733.07	22.75	-1.73	22.75	8.00	477,158.94	708,451.32
8,150.00	18.50	355.66	8,146.00	4,781.00	36.90	-2.80	36.92	8.00	477,173.10	708,450.24
8,200.00	22.50	355.66	8,192.83	4,827.83	54.36	-4.13	54.38	8.00	477,190.55	708,448.92
8,250.00	26.50	355.66	8,238.32	4,873.32	75.03	-5.69	75.06	8.00	477,211.22	708,447.35
8,300.00	30.50	355.66	8,282.25	4,917.25	98.81	-7.50	98.85	8.00	477,235.00	708,445.54
8,350.00	34.50	355.66	8,324.41	4,959.41	125.59	-9.53	125.65	8.00	477,261.78	708,443.51
8,400.00	38.50	355.66	8,364.60	4,999.60	155.24	-11.78	155.31	8.00	477,291.43	708,441.26
8,450.00	42.50	355.66	8,402.61	5,037.61	187.61	-14.24	187.69	8.00	477,323.80	708,438.80
8,500.00	46.50	355.66	8,438.27	5,073.27	222.55	-16.89	222.64	8.00	477,358.74	708,436.15
8,550.00	50.50	355.66	8,471.40	5,106.40	259.88	-19.72	259.99	8.00	477,396.07	708,433.32
8,600.00	54.50	355.66	8,501.83	5,136.83	299.42	-22.72	299.55	8.00	477,435.61	708,430.32
8,650.00	58.50	355.66	8,529.43	5,164.43	340.98	-25.88	341.13	8.00	477,477.18	708,427.16
8,700.00	62.50	355.66	8,554.04	5,189.04	384.37	-29.17	384.53	8.00	477,520.56	708,423.87
8,750.00	66.50	355.66	8,575.57	5,210.57	429.36	-32.58	429.54	8.00	477,565.55	708,420.46
8,800.00	70.49	355.66	8,593.90	5,228.90	475.73	-36.10	475.94	8.00	477,611.93	708,416.94
8,850.00	74.49	355.66	8,608.93	5,243.93	523.27	-39.71	523.50	8.00	477,659.46	708,413.33
8,900.00	78.49	355.66	8,620.61	5,255.61	571.74	-43.39	571.99	8.00	477,707.93	708,409.65
8,950.00	82.49	355.66	8,628.86	5,263.86	620.90	-47.12	621.17	8.00	477,757.09	708,405.92
9,000.00	86.49	355.66	8,633.66	5,268.66	670.52	-50.89	670.81	8.00	477,806.71	708,402.16
9,043.83	90.00	355.66	8,635.00	5,270.00	714.20	-54.20	714.51	8.00	477,850.39	708,398.84
9,100.00	90.00	356.78	8,635.00	5,270.00	770.24	-57.90	770.57	2.00	477,906.43	708,395.14
9,200.00	90.00	358.78	8,635.00	5,270.00	870.16	-61.77	870.52	2.00	478,006.35	708,391.27
9,280.14	90.00	0.39	8,635.00	5,270.00	950.30	-62.35	950.66	2.00	478,086.49	708,390.69
9,300.00	90.00	0.39	8,635.00	5,270.00	970.16	-62.22	970.51	0.00	478,106.35	708,390.83



Pathfinder
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MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
9,400.00	90.00		8,635.00	5,270.00	1,070.15	-61.54	1,070.50	0.00	478,206.35	708,391.50
9,500.00	90.00		8,635.00	5,270.00	1,170.15	-60.87	1,170.50	0.00	478,306.34	708,392.17
9,600.00	90.00		8,635.00	5,270.00	1,270.15	-60.20	1,270.49	0.00	478,406.34	708,392.85
9,700.00	90.00		8,635.00	5,270.00	1,370.15	-59.52	1,370.48	0.00	478,506.34	708,393.52
9,800.00	90.00		8,635.00	5,270.00	1,470.14	-58.85	1,470.47	0.00	478,606.34	708,394.20
9,900.00	90.00		8,635.00	5,270.00	1,570.14	-58.17	1,570.46	0.00	478,706.34	708,394.87
10,000.00	90.00		8,635.00	5,270.00	1,670.14	-57.50	1,670.46	0.00	478,806.33	708,395.54
10,100.00	90.00		8,635.00	5,270.00	1,770.14	-56.83	1,770.45	0.00	478,906.33	708,396.22
10,200.00	90.00		8,635.00	5,270.00	1,870.13	-56.15	1,870.44	0.00	479,006.33	708,396.89
10,300.00	90.00		8,635.00	5,270.00	1,970.13	-55.48	1,970.43	0.00	479,106.33	708,397.57
10,400.00	90.00		8,635.00	5,270.00	2,070.13	-54.80	2,070.42	0.00	479,206.32	708,398.24
10,500.00	90.00		8,635.00	5,270.00	2,170.13	-54.13	2,170.41	0.00	479,306.32	708,398.91
10,600.00	90.00		8,635.00	5,270.00	2,270.13	-53.45	2,270.41	0.00	479,406.32	708,399.59
10,700.00	90.00		8,635.00	5,270.00	2,370.12	-52.78	2,370.40	0.00	479,506.32	708,400.26
10,800.00	90.00		8,635.00	5,270.00	2,470.12	-52.11	2,470.39	0.00	479,606.32	708,400.94
10,900.00	90.00		8,635.00	5,270.00	2,570.12	-51.43	2,570.38	0.00	479,706.31	708,401.61
11,000.00	90.00		8,635.00	5,270.00	2,670.12	-50.76	2,670.37	0.00	479,806.31	708,402.28
11,100.00	90.00		8,635.00	5,270.00	2,770.11	-50.08	2,770.37	0.00	479,906.31	708,402.96
11,200.00	90.00		8,635.00	5,270.00	2,870.11	-49.41	2,870.36	0.00	480,006.31	708,403.63
11,300.00	90.00		8,635.00	5,270.00	2,970.11	-48.74	2,970.35	0.00	480,106.30	708,404.31
11,400.00	90.00		8,635.00	5,270.00	3,070.11	-48.06	3,070.34	0.00	480,206.30	708,404.98
11,500.00	90.00		8,635.00	5,270.00	3,170.11	-47.39	3,170.33	0.00	480,306.30	708,405.66
11,600.00	90.00		8,635.00	5,270.00	3,270.10	-46.71	3,270.32	0.00	480,406.30	708,406.33
11,700.00	90.00		8,635.00	5,270.00	3,370.10	-46.04	3,370.32	0.00	480,506.29	708,407.00
11,800.00	90.00		8,635.00	5,270.00	3,470.10	-45.37	3,470.31	0.00	480,606.29	708,407.68
11,900.00	90.00		8,635.00	5,270.00	3,570.10	-44.69	3,570.30	0.00	480,706.29	708,408.35
12,000.00	90.00		8,635.00	5,270.00	3,670.09	-44.02	3,670.29	0.00	480,806.29	708,409.03



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12,100.00	90.00	0.39	8,635.00	5,270.00	3,770.09	-43.34	3,770.28	0.00	480,906.29	708,409.70
12,200.00	90.00	0.39	8,635.00	5,270.00	3,870.09	-42.67	3,870.28	0.00	481,006.28	708,410.37
12,300.00	90.00	0.39	8,635.00	5,270.00	3,970.09	-42.00	3,970.27	0.00	481,106.28	708,411.05
12,400.00	90.00	0.39	8,635.00	5,270.00	4,070.08	-41.32	4,070.26	0.00	481,206.28	708,411.72
12,500.00	90.00	0.39	8,635.00	5,270.00	4,170.08	-40.65	4,170.25	0.00	481,306.28	708,412.40
12,600.00	90.00	0.39	8,635.00	5,270.00	4,270.08	-39.97	4,270.24	0.00	481,406.27	708,413.07
12,700.00	90.00	0.39	8,635.00	5,270.00	4,370.08	-39.30	4,370.24	0.00	481,506.27	708,413.74
12,800.00	90.00	0.39	8,635.00	5,270.00	4,470.08	-38.62	4,470.23	0.00	481,606.27	708,414.42
12,900.00	90.00	0.39	8,635.00	5,270.00	4,570.07	-37.95	4,570.22	0.00	481,706.27	708,415.09
13,000.00	90.00	0.39	8,635.00	5,270.00	4,670.07	-37.28	4,670.21	0.00	481,806.27	708,415.77
13,100.00	90.00	0.39	8,635.00	5,270.00	4,770.07	-36.60	4,770.20	0.00	481,906.26	708,416.44
13,200.00	90.00	0.39	8,635.00	5,270.00	4,870.07	-35.93	4,870.19	0.00	482,006.26	708,417.11
13,300.00	90.00	0.39	8,635.00	5,270.00	4,970.06	-35.25	4,970.19	0.00	482,106.26	708,417.79
13,400.00	90.00	0.39	8,635.00	5,270.00	5,070.06	-34.58	5,070.18	0.00	482,206.26	708,418.46
13,500.00	90.00	0.39	8,635.00	5,270.00	5,170.06	-33.91	5,170.17	0.00	482,306.25	708,419.14
13,600.00	90.00	0.39	8,635.00	5,270.00	5,270.06	-33.23	5,270.16	0.00	482,406.25	708,419.81
13,700.00	90.00	0.39	8,635.00	5,270.00	5,370.06	-32.56	5,370.15	0.00	482,506.25	708,420.49
13,719.71	90.00	0.39	8,635.00	5,270.00	5,389.76	-32.42	5,389.86	0.00	482,525.96	708,420.62

PBHL(NPG8#15)

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/S (ft)	+E/W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL(NPG8#15)	0.00	0.00	8,635.00	5,389.76	-32.42	482,525.959	708,420.618	32° 19' 31.356 N	103° 47' 32.710 W
- plan hits target center									
- Point									



Pathfinder
Pathfinder X & Y Planning Report



Company: Devon Energy, Inc.
Project: Eddy County
Site: North Pure Gold "8" Federal
Well: #15H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:
Well #15H
WELL @ 3365.00ft (25' KB H&P #416)
WELL @ 3365.00ft (25' KB H&P #416)
Grid
Minimum Curvature
Midland Database

Checked By: _____

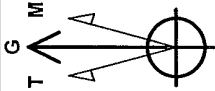
Approved By: _____

Date: _____



Project: Eddy County
Site: North Pure Gold "g" Federal
Well: #15H
Wellbore: OH
Plan: Plan #1 (#15H/OH)

PROJECT DETAILS: Eddy County
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

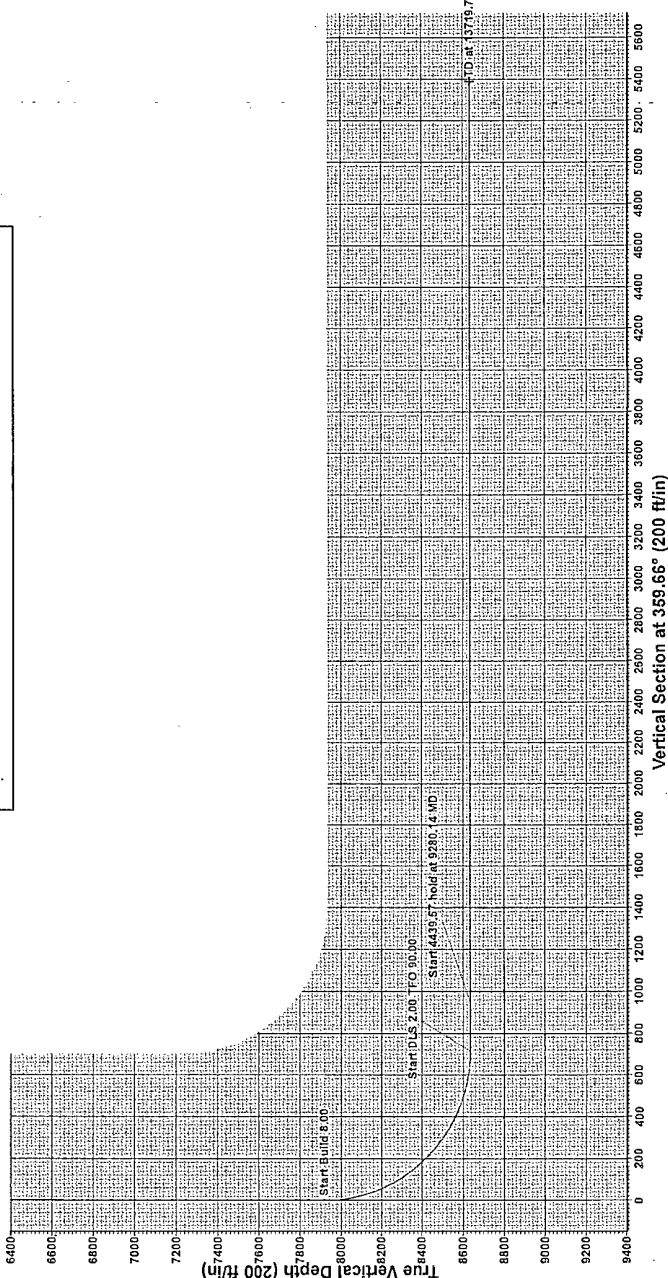
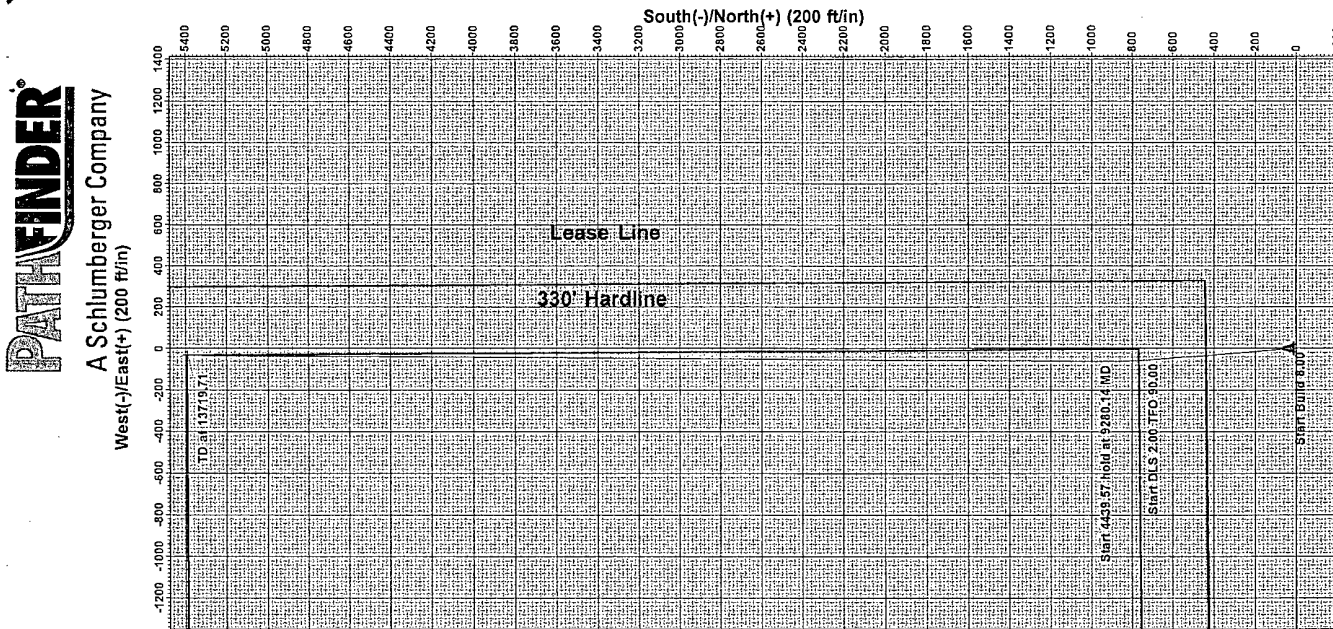


Azimuths to Grid North
True North: -0.29°
Magnetic North: 7.47°
Strength: 48741.1snT
Dip Angle: 60.26°
Date: 10/31/2010
Model: IGRF200510

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N/S	+E/W	DLeg	TFace	VSec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	7918.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	7430.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	9240.14	90.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	13719.71	90.00	0.39	8535.00	5389.78	-32.42	0.00	0.00	5389.88

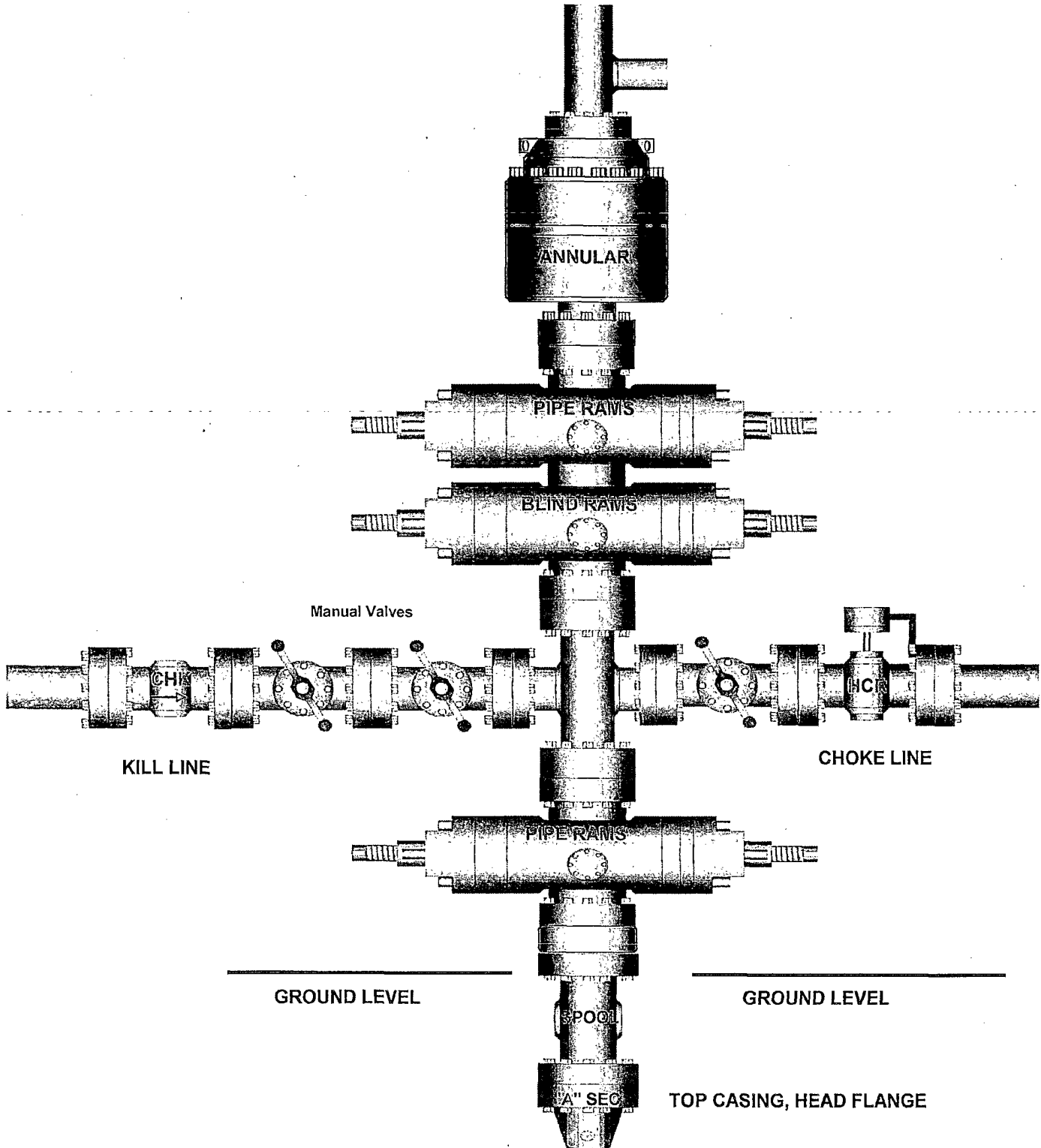
WELL DETAILS: #15H									
Ground Elevation: 3340.00									
RKB Elevation: WELL @ 3385.00R (25' KB H&P #416)									
Rig Name: 25' KB H&P #416									
+N/S	+E/W	Northing	Easting	Latitude	Longitude	Slot			
0.00	0.00	477135.194	708453.043	32° 18' 38.020 N	103° 47' 32.649 W				

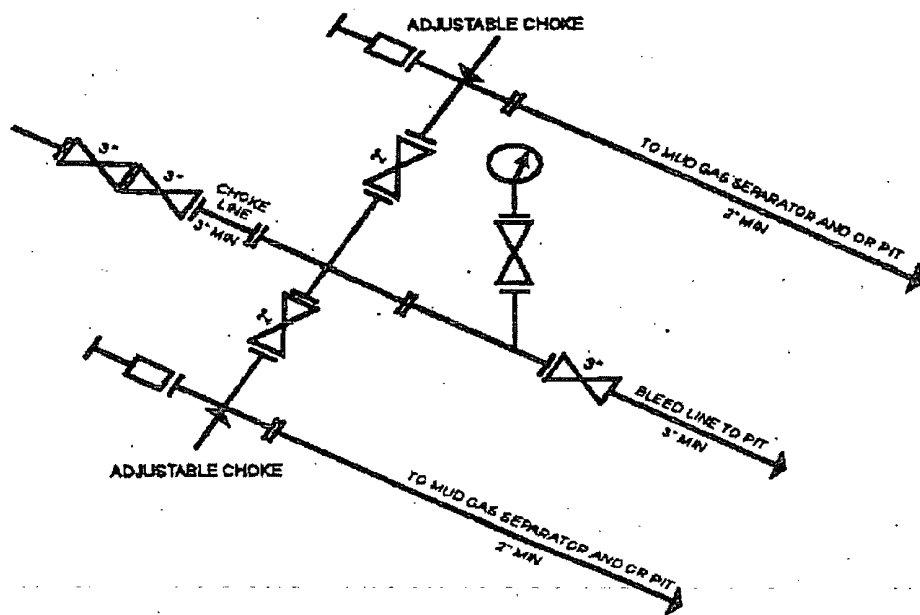
WELLBORE TARGET DETAILS (MAP COORDINATES)					
Name	TVD	+N/S	+E/W	Northing	Easting
PBHL(NPG#15)	8635.00	5389.78	-32.42	482225.959	708420.618



Plan: Plan #1 (#15H/OH)
Created By: Nate Bingham Date: 8:55, August 31 2010
Checked: _____ Date: _____

13-5/8" x 3,000 psi BOP Stack





3M CHOKE MANIFOLD EQUIPMENT - CONFIGURATION OF CHOKES MAY VARY
 [54 FR 39528, Sept. 27, 1989]



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.

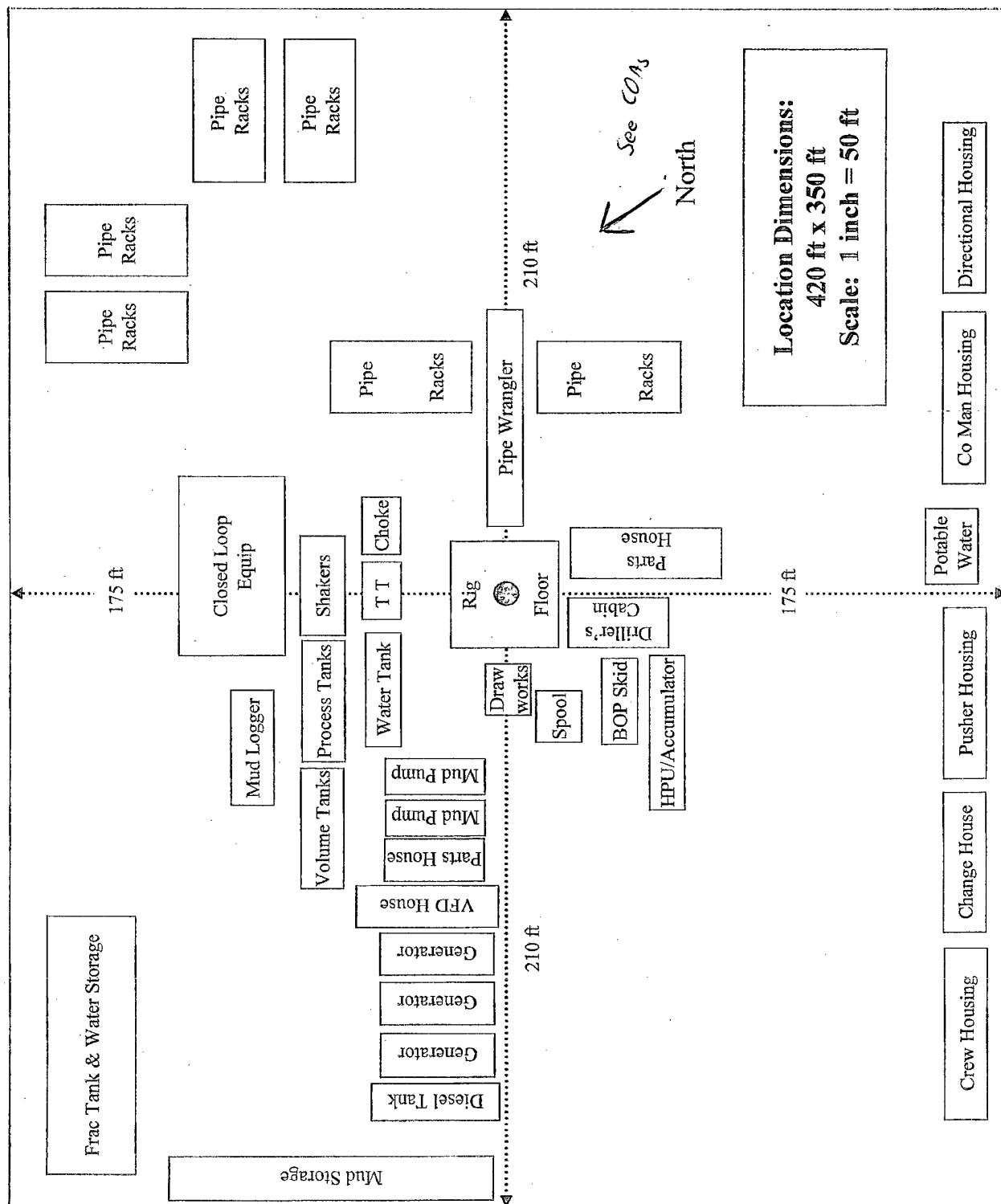
Best regards,

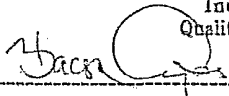
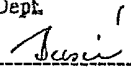
Robin Hodgson
Sales Manager
ContiTech Beattie Corp

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

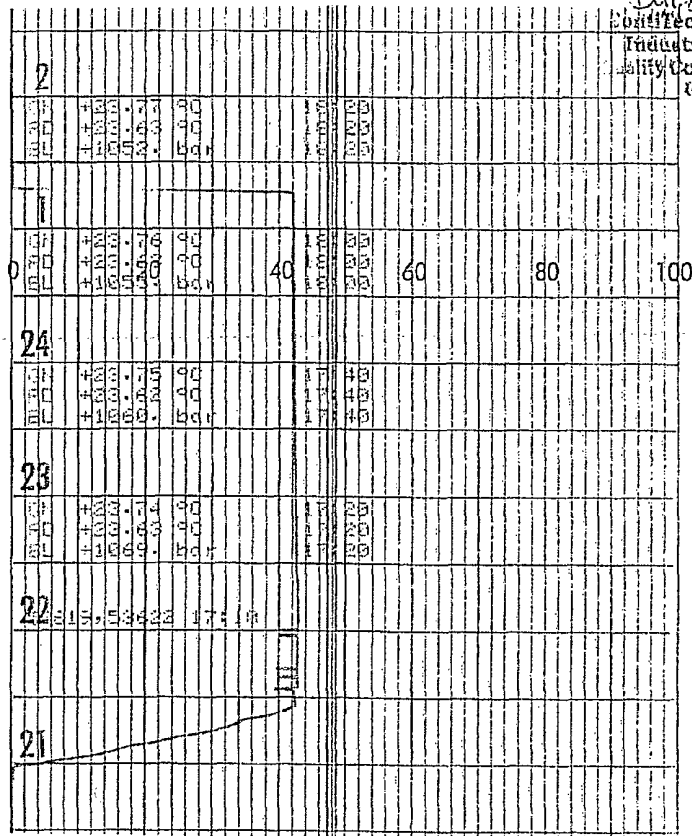


H&P Flex Rig Location Layout



QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 1713	
PURCHASER: ContiTech Beattie Co.				P.O. N°: 002808	
CONTITECH ORDER N°: 426127		HOSE TYPE: 3" ID Choke and Kill Hose			
HOSE SERIAL N°: 53622		NOMINAL / ACTUAL LENGTH: 10,67 m			
W.P. 68,96 MPa 10000 psi		T.P. 103,4 MPa 15000 psi		Duration: 60 min.	
<p>Pressure test with water at ambient temperature</p> <p style="text-align: center;">See attachment. (1 page)</p> <p>↑ 10 mm = 10 Min. → 10 mm = 25 MPa</p>					
COUPLINGS Type		Serial N°		Quality	
3" coupling with 4 1/16" Flange end		5503 2029		AISI 4130 AISI 4130	
				Heat N° N1590P 27566	
INFOCHIP INSTALLED				API Spec 16 C Temperature rate:"B"	
All metal parts are flawless				Hose conform to NACE MR 01-75	
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.					
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.					
COUNTRY OF ORIGIN HUNGARY/EU					
Date: 25. August. 2008		Inspector		Quality Control ContiTech Rubber Industrial Kft. Quality Control Dept.  	

HARTMANN &



Conditech Rubber
Industrial Kft.
Quality Control Dept.
(2)

NOTES REGARDING BLOWOUT PREVENTERS

Devon Energy Production Company, LP

North Pure Gold 8 Federal 15H

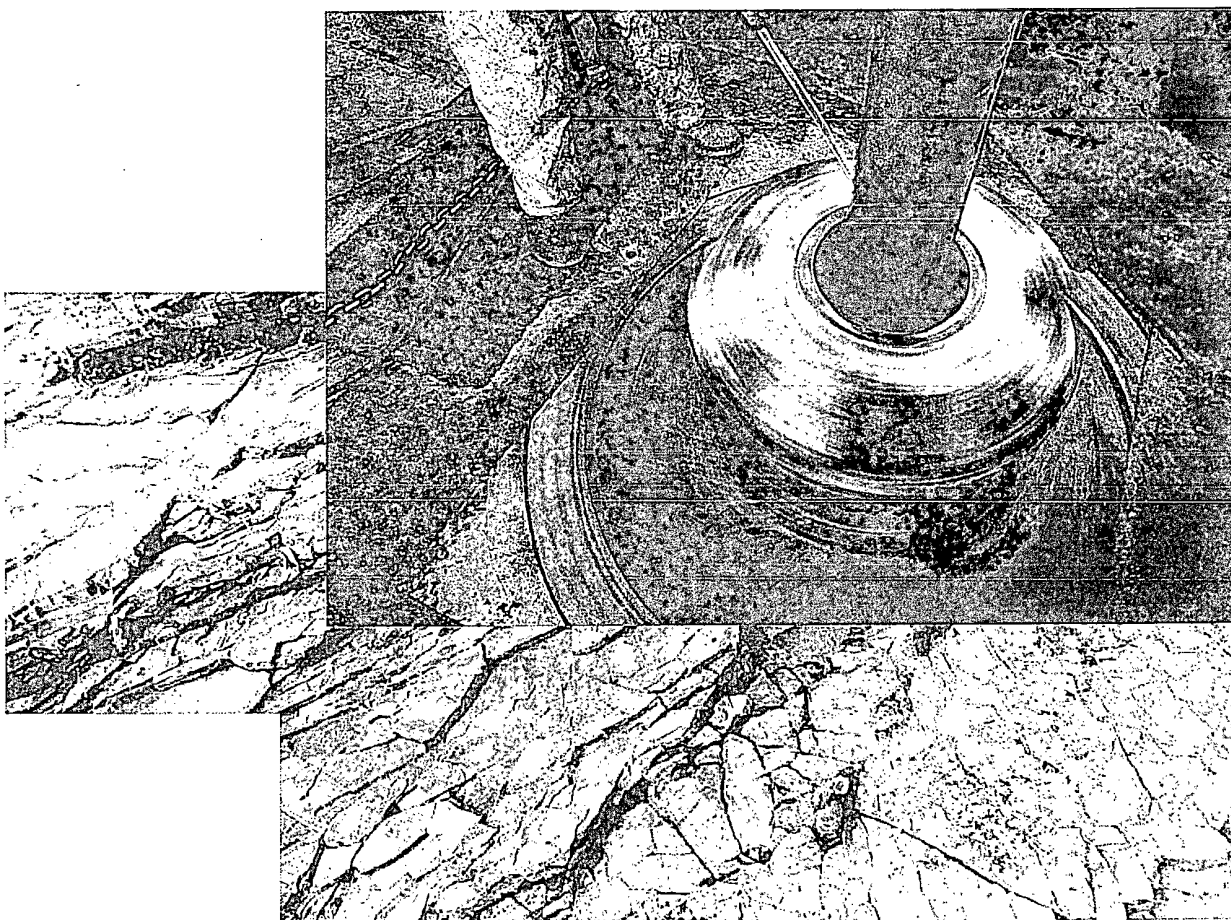
Surface Location: 440 FNL & 330 FEL, Unit A, Sec 17 T23S R31E, Eddy, NM

Bottom hole Location: 330 FNL & 330 FEL, Unit A, Sec 8 T23S 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.



Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
April 2010

I. Design Plan

Devon uses various high efficient closed loop systems (CLS). The CLS shown 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.

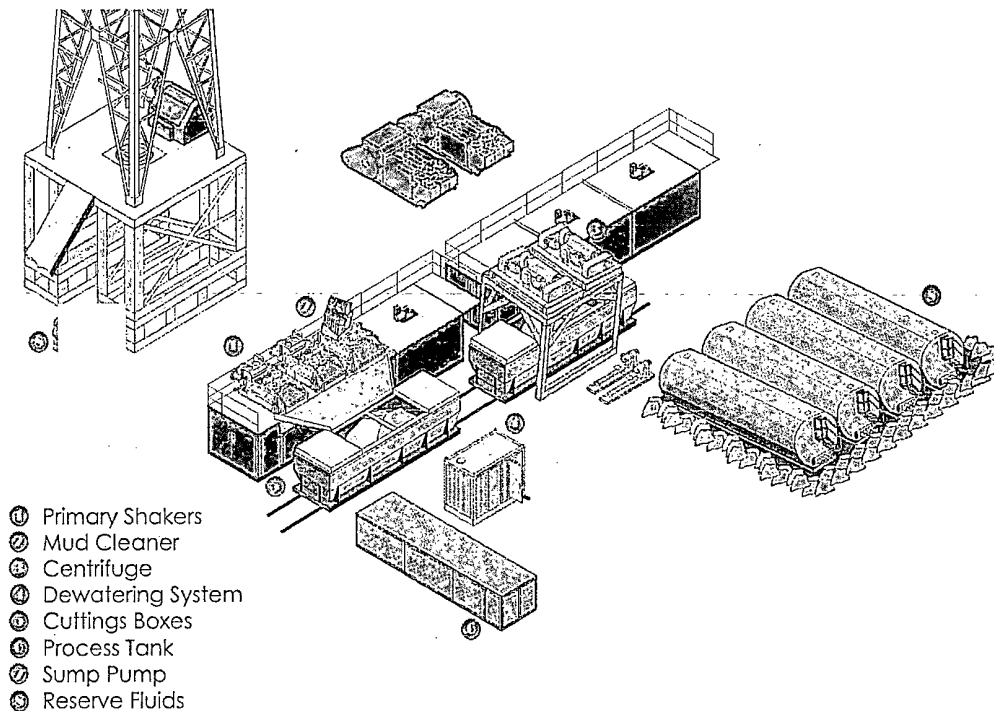
II. Operations and Maintenance Plan

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.



Closed Loop Schematic



Centrifuges: The centrifuges can be utilized depending on the well's anticipated solids volume. One or two centrifuges can be used 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

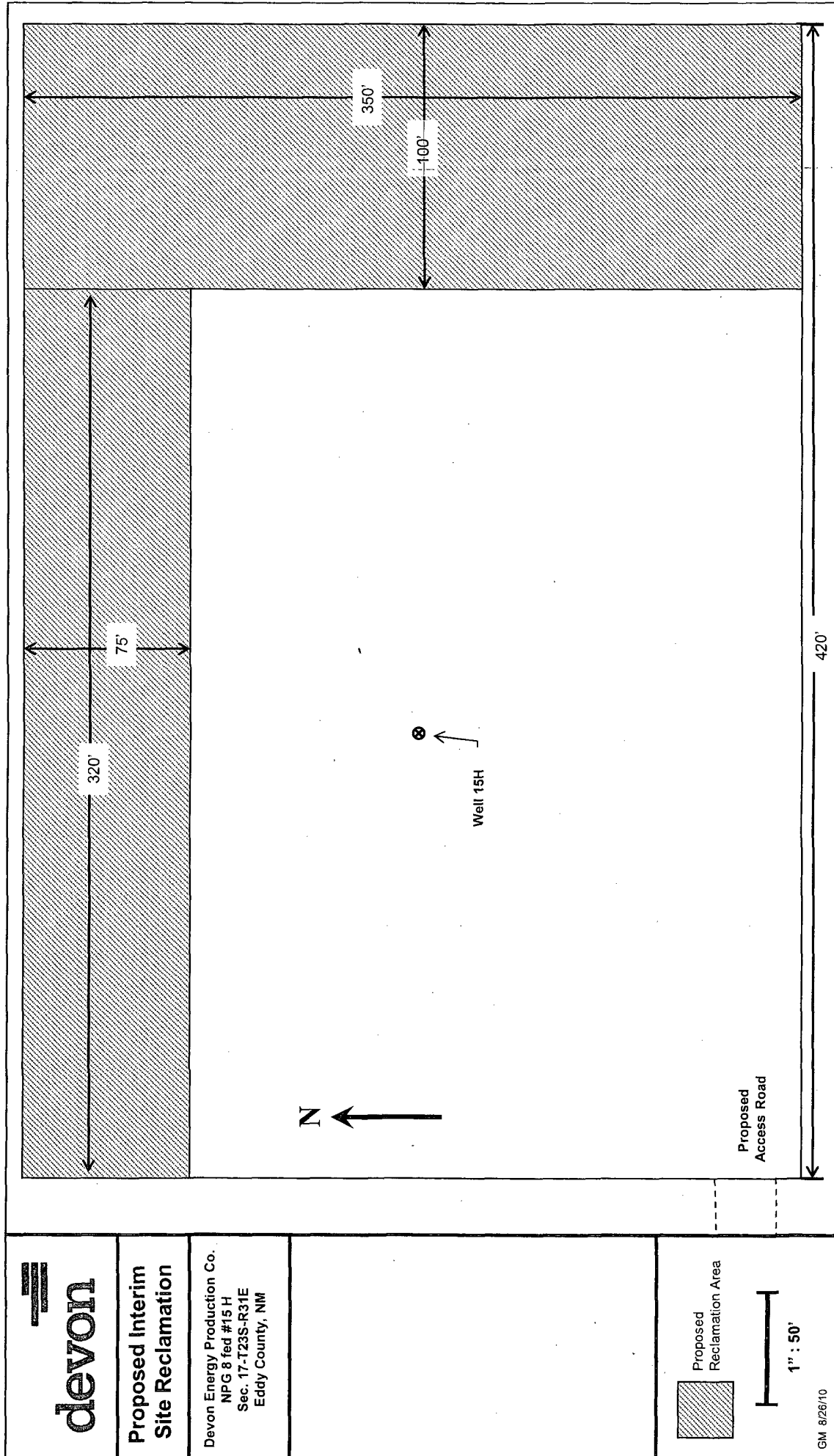
dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Solids Control 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.

III. Closure Plan

A maximum 170' X 170' 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.

Received 9-22-10



SURFACE USE PLAN

Devon Energy Production Company, LP

North Pure Gold 8 Federal 15H

Surface Location: 440 FNL & 330 FEL, Unit A, Sec 17 T23S R31E, Eddy, NM

Bottom hole Location: 330 FNL & 330 FEL, Unit A, Sec 8 T23S R31E, Eddy, NM

1. Existing Roads:

- a. The well site and elevation plat for the proposed well are reflected on the well site layout; Form C-102. The well was staked by Basin Surveys.
- b. All roads into the location are depicted on Exhibit 3.
- c. Directions to Location: From mile marker 18 of Hwy 128 go north 0.2 miles to lease road, on lease road go northerly 1.2 miles thence east 0.3 miles to NPG 5 well pad and proposed location.

2. New or Reconstructed Access Roads:

- a. The well site layout, Form C-102 shows the existing County road. Approximately 344.5' of new access road will be constructed as follows.
- b. The maximum width of the road will be 14'. It will be crowned and made of 6" rolled and compacted caliche. Water will be deflected, as necessary, to avoid accumulation and prevent surface erosion.
- c. Surface material will be native caliche. This material will be obtained from a BLM approved pit nearest in proximity to the location. The average grade will be approximately 1%.
- d. No cattle guards, grates or fence cuts will be required. No turnouts are planned

3. Location of Existing Wells:

One Mile Radius Plat shows all existing and proposed wells within a one-mile radius of the proposed location. See attached plat.

4. Location of Existing and/or Proposed Production Facilities:

- a. In the event the well is found productive, the North Pure Gold 8 Federal 14 tank battery would be utilized and the necessary production equipment will be installed at the well site.
- b. If the well is productive, rehabilitation plans are as follows:
 - i. 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 shown in the C-102. On occasion, water will be obtained from a pre-existing water well, running a pump directly to the drill rig. In these 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:

The caliche utilized for the drilling pad and proposed access road will be from minerals that are located onsite or will be used onsite. If minerals are not available onsite, then an established mineral pit will be used to build the location and stem road.

7. Methods of Handling Waste Material:

- a. Drill cuttings will be disposed.
- 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, including broken sacks, will pick up salts remaining after completion of well.
- 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. Exhibit D shows the proposed well site layout with dimensions of the pad layout.
- b. This exhibit indicated proposed location of sump pits and living facilities.
- c. A closed loop system will be utilized.
- d. If a pit or closed loop system is utilized, Devon will comply with the NMOCD requirements 19.15.17 and submit form C-144 to the appropriate NMOCD District Office. A copy to be provided to the BLM.

10. Plans for Surface Reclamation Include Both Final & Interim:

- 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 is one dwelling within 2 miles of location.
- d. A Cultural Resources Examination was completed by the Permian Basin Cultural Resource Mitigation Fund and submitted to the BLM office in Carlsbad, New Mexico.

13. Bond Coverage:

Bond Coverage is Nationwide; Bond # is CO-1104

Operators Representative:

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

John Logemann - Operations Engineer Advisor	Don Mayberry - Superintendent
Devon Energy Production Company, L.P.	Devon Energy Production Company, L.P.
20 North Broadway, Suite 1500	Post Office Box 250
Oklahoma City, OK 73102-8260	Artesia, NM 88211-0250
(405) 552-7862 (office)	(575) 748-3371 (office)
(405) 765-4727 (Cellular)	(575) 746-4945 (home)

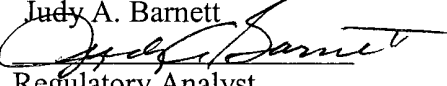
Certification

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 31st ___ day of ___ August, 2010.

Printed Name: Judy A. Barnett

Signed Name: 

Position Title: Regulatory Analyst

Address: 20 North Broadway, OKC OK 73102

Telephone: (405)-228-8699

Field Representative (if not above signatory):

Address (if different from above):

Telephone (if different from above):

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION COMPANY LP
LEASE NO.:	NM77046
WELL NAME & NO.:	NORTH PURE GOLD 8 FEDERAL #15H
SURFACE HOLE FOOTAGE:	0440' FNL & 0330' FEL (Sec. 17)
BOTTOM HOLE FOOTAGE:	0330' FNL & 0330' FEL (Sec. 8)
LOCATION:	Section 17, T. 23 S., R. 31 E., NMPPM
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**

- Lesser Prairie-Chicken Timing Stipulations
- Ground-level Abandoned Well Marker
- Pad restriction
- Reserve Pits
- Communitization Agreement

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

- ☐ **Road Section Diagram**

- ☒ **Drilling**
 - Secretary's Potash
 - Logging requirements
 - H2S 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)

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.

Pad restriction

The buried pipeline located approximately 150 north of the center hole shall be avoided during the construction of the well pad

The well pad is restricted to 170 to the southwest of the center hole to avoid dunes

Reserve pits

The historic reserve pits located south of the center hole shall be capped with caliche during the construction of the well pad. Any contents of the reserve pits that are disturbed during the construction of the well pad shall be removed and hauled away to an appropriate disposal site.

Communitization Agreement

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

VI. CONSTRUCTION

A. NOTIFICATION

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

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

B. V-DOOR DIRECTION: southeast

C. 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.

D. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

E. 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.

F. 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.

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 thirty (30) 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

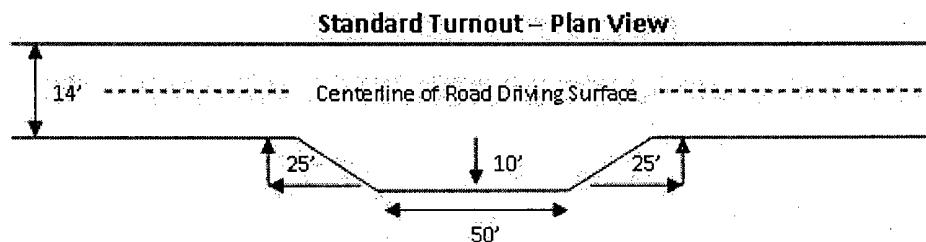
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

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:

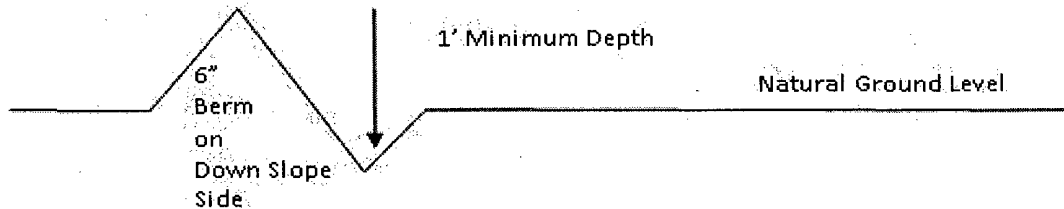


Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Culvert Installations

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

Cattleguards

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

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

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

Fence Requirement

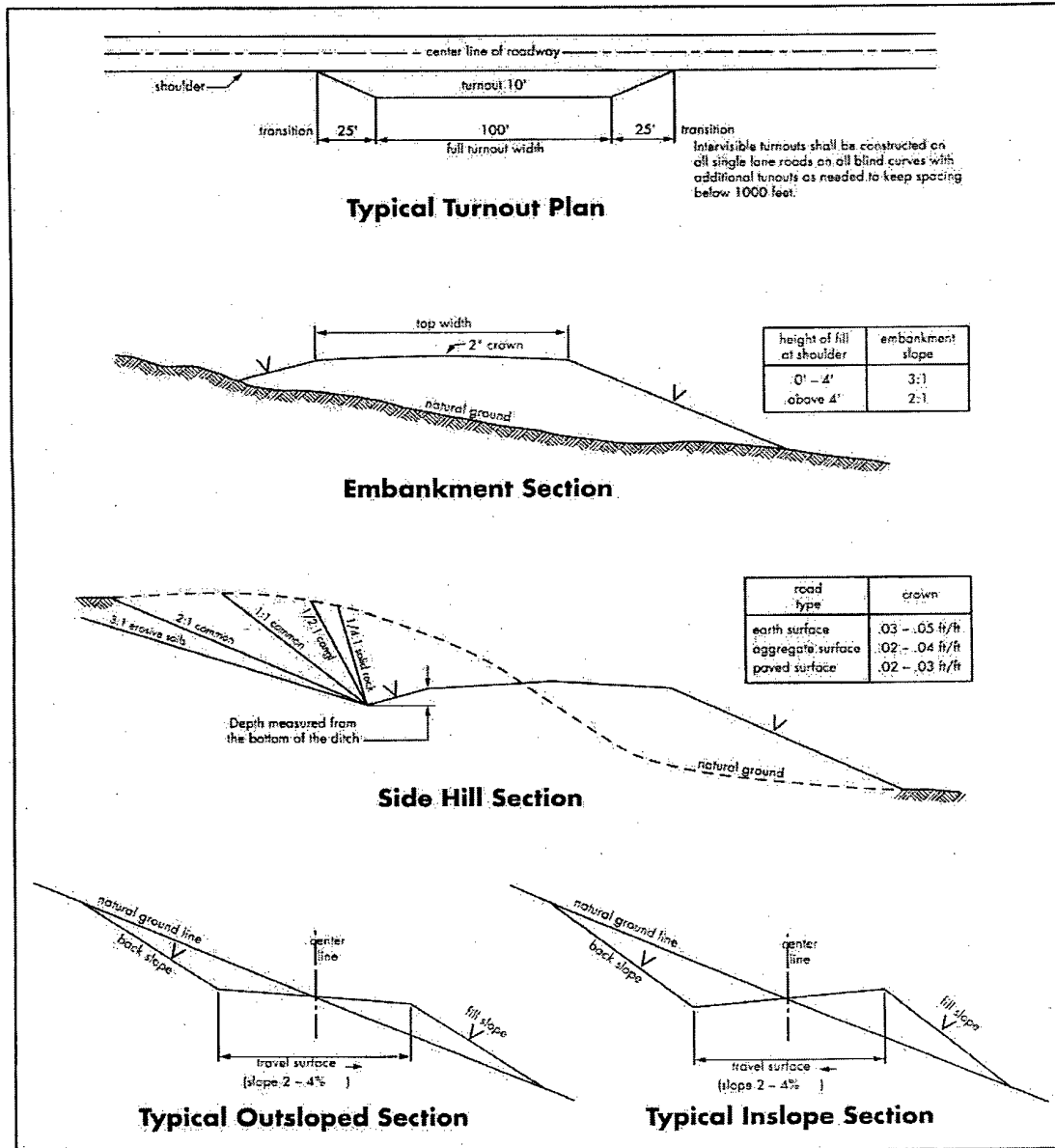
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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

Public Access

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

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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

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

☒ **Eddy County**

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

1. **Due to recent H₂S encounters in the salt formation, it is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide prior to drilling out the surface shoe. If Hydrogen Sulfide is encountered, please report measurements 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 are 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) will be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

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

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

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

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

Secretary's Potash

**Possible brine and water flows in the Salado, Castile, Delaware and Bone Spring.
Possible lost circulation in the Delaware and Bone Spring Groups.**

1. The 13-3/8 inch surface casing shall be set at **approximately 525 feet (a minimum of 25 feet into the Rustler Anhydrite and 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.
2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:
 - ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash. Set intermediate casing in the base of the Castile or the Lamar Limestone.

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

3. 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 to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with third stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.
 - c. Third stage above DV tool, cement shall:
 - ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Additional cement may be required as the excess cement calculates to be 27%.**
4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. **Variance approved to use flex line with Serial #53622 from BOP to choke manifold. Check condition of 3" 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. Anchor requirements to be onsite for review.**

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.
 - a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
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**. 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) prior to initiating the test.
 - 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.

WWI 102010

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

B. PIPELINES (not applied for in APD)

C. ELECTRIC LINES (not applied for in APD)

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 for LPC Sand/Shinnery Sites

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

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

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

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

**Four-winged Saltbush 5lbs/A

* This can be used around well pads and other areas where caliche cannot be removed.

*Pounds of pure live seed:

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