RM

Form 3160-5
(February 2005)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB NO. 1004-0135
EXPIRES: March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE

RECEIVED
MAR 23 2010
NMOCD ARTESIA

5. Lease Serial No.
NM-77046

6. If Indian, Allottee or Tribe Name

7. Unit or CA Agreement Name and No.

1a. Type of Well ☐ Oil Well ☑ Gas Well ☐ Other

8. Well Name and No.
North Pure Gold 8 Federal 13

2. Name of Operator
DEVON ENERGY PRODUCTION COMPANY, LP

9. API Well No.
30-015-37651

3. Address and Telephone No.
20 N. Broadway, Oklahoma City, Ok 73102-8260 405-235-3611

10. Field and Pool, or Exploratory
Undesignated; Upper Penn

4. Location of Well (Report location clearly and in accordance with Federal requirements)*
660' FSL 1530' FEL O SEC 8 T23S R31E

11. County or Parish State
Eddy NM

BHL: 660' FNL 1530' FEL

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OS SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☑ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13 Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work and approximate duration thereof If the proposal deepen directionally or recomplete horizontally, give subsurface location and measured and true vertical depths of all pertinent markers and zones Attach the Bond under which the work will be performed or provide the Bond No on file with BLM/BIA Required subsequent reports shall be filed within 30 days following completion of the involved operations If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed Final Abandonment Notices shall be filed only after all requirement, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection)

Devon Energy Production Company L. P. *respectfully requests to deviate from the original APD to change from a vertical Morrow well to Upper Penn Shale horizontal. See attached changes:(Cementing Procedures, C-102 , Directional Survey, Geo Prog & BOP schematic.*

Casing Program

Hole Size	Hole Interval	OD Csg	Casing Interval	Wt	Collar	Grade
26"	0' – ~~400~~'	20"	See COA 0' – 400' 500'	94#	BTC	H-40
17 ½"	~~400~~' - 4000'	13 3/8"	0' – 4000'	68#	BTC	HCK-55
12 1/4"	4,000' – 11,100'	9 5/8"	0' – 11,100'	40#	LTC	HCP-110
8 3/4"	11,100' – 13,000' PH					
8 ¾"	11,900' – 16,500'	5 ½"	0-16,500'	23#	Vam Top	EC-P110

Design Parameter Factors:

Casing Size	Collapse Design Factor	Burst Design Factor	Tension Design Factor
20"	2.7	8.18	15.4
13 3/8"	1.22	1.65	4.77
9 5/8	1.68	1.67	1.91
5 ½"	1.63	1.67	2.18

SUBJECT TO LIKE APPROVAL BY STATE

(Attachments)

Signed Judy A. Barnett Name Judy A. Barnett X8699
Title Regulatory Analyst
Date 3/4/2010

APPROVED
Date MAR 18 2010
/s/ Chris Walls
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

(This space for Federal or State Office use)

Approved by _____ Title _____
Conditions of approval, if any:

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

*See Instruction on Reverse Side

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Jacqui Reeves
Geologist
3/25/2010
OCD

NORTH PURE GOLD 8 FED 13H
SEC 08-23S-31E
PILOT HOLE (PH)

The Collapse SF for the 9 5/8 is derived using a 9 lb fluid gradient behind the casing and a minimum of a 9 lb fluid gradient in the casing. This casing will not be evacuated.

Mud Program

Depth	Mud Wt.	Visc	Fluid Loss	Type System
0' – ~~400'~~	8.4 – 8.8	32 – 34	N/C	FW/Gel
~~400'~~ – 4,000'	9.7 – 10.0	28 – 30	N/C	Brine
4,000' – 11,100'	9.0 – 9.3	28-30	NC -40	Fresh
11,100' – 13,000'PH	10.5 – 14.0	40 – 60	12 – 8cc	Fresh
11,900-16,500'	14.0-15.0	40-60		80/20 Oil Base

BOP DESIGN: Will consist of a (10M system) triple ram type (10M psi WP) preventor and a bag-type (Hydril) preventor (10M psi WP) and a rotation head. All units will be hydraulically operated and the ram type preventor will be equipped with blind rams on top and 5" drill pipe rams on bottom. A 3M Annular BOP will be installed on the 20" surface casing and utilized continuously until total depth (~4000') is reached. The mentioned 10M preventer will be installed on the 13 3/8" casing. All BOP's will be tested with independent testers before drilling out the associated casing shoes. Prior to drilling out the 13 3/8" casing shoe, the BOP's and Hydril will be tested as per BLM Drilling Operations Order #2.

Pipe rams will be operated and checked each 24-hour period and each time the drill pipe is out of the hole. These functional tests will be documented on the daily driller's log. A 2" kill line and 3" choke line will be incorporated in the drilling spool below the ram-type BOP. Other accessory BOP equipment will include a Kelly cock, floor safety valve, choke lines and choke manifold having 10000 psi WP rating.

CEMENTING PROGRAM and WHIPSTOCK PROGRAM

Cement plug for the Pilot Hole:
Plug Geometry:

Plug Top 12200' to 13,000' 370 sx Class H +R-3, **Yld** 1.18 cf/sx

An 8 ¾" Open Hole Whipstock with a packer type anchor will be set @ ~12,000' after the cement plug has been set.

20"	Surface	**Lead**: 745 sx Cl C w/2% CC and 4% gel **Yld** 1.75 cf/sx **Tail**: 300 sx Cl C w/2% CC and .125#/sx CF **Yld**: 1.35 cf/sx
13 3/8"	Intermediate	**Lead**: 2360 sx (35:65) Poz (Fly Ash):Premium Plus C Cement + 5% bwow Sodium **Yld**: 2.04 cf/sx. **TOC** @ surface. **Tail**: 430 sx Premium Plus C Cement + 2% bwoc Calcium Chloride + 0.125#/sx CF + 56.3% FW **Yld**: 1.35 cf/sx.

9 5/8" Intermediate

Lead: 1100 sx (35:65) Poz (Fly Ash):Premium Plus C Cement + 5% bwow Sodium Chloride + 0.125#/sx CF + 6% bwoc Bentonite + 107.8% FW
Yld: 2.04 cf/sx.

Tail: 850 sx Premium Plus Super C Cement + 5% bwow Sodium Chloride + 0.125 #/sx CF + 0.4% bwoc Sodium Metasilicate + 4% bwoc MPA-5 + 64.7% FW
Yld: 1.56 cf/sx.

2 Stage DV Tool @ 5500'

2nd Stage Lead: 450 sx 35:65 Poz: Cl H w/ 6% gel and 2% SC
Yield: 1.98 cf/sx
Tail: 150 sx 60:40 Pox Cl C w/ 1% KCL and .125 #/sx CF
Yld: 1.56 cf/sx

5 ½" Production

1950 sx Premium Plus H + 0.35% bwoc R-3 + 0.4% bwoc CD-32 + 1.4% bwoc FL-63 + 0.2% bwoc Sodium Metasilicate + 20#/sx ASCA-1 + 52.9% FW
Yld: 1.13 cf/sx.

TOC for All Strings:

Surface:	0'
Intermediate:	0'
Intermediate:	3500'
Production:	4000'

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

OIL CONSERVATION DIVISION

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

Form C-102
Revised October 15, 2009

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
		UPPER PENN SHALE

Property Code	Property Name	Well Number
	NORTH PURE GOLD "8" FEDERAL	13H

OGRID No.	Operator Name	Elevation
6137	DEVON ENERGY PRODUCTION COMPANY, L.P.	3326'

Surface Location

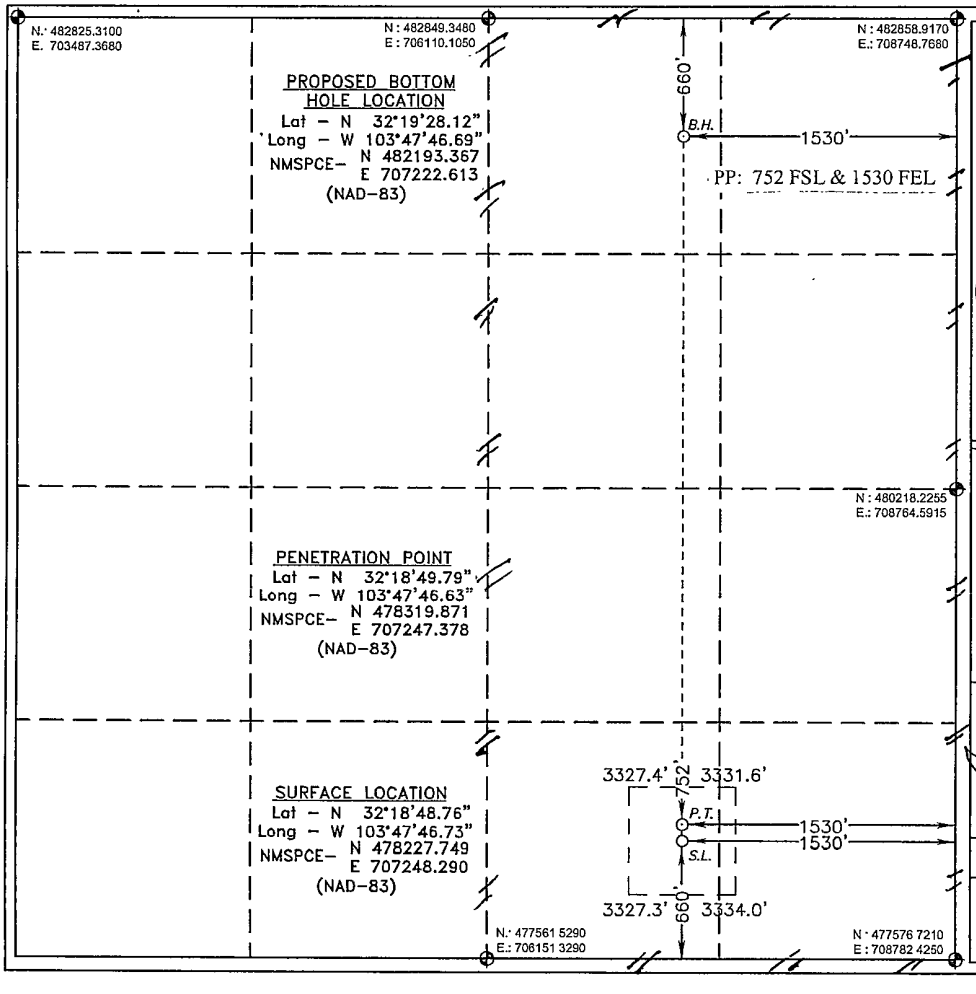
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	8	23 S	31 E		660	SOUTH	1530	EAST	EDDY

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
B	8	23 S	31 E		660	NORTH	1530	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			

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



OPERATOR CERTIFICATION

I hereby certify that the information 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

Judy A. Barnett 3/03/2010
Printed Name
Regulatory Analyst

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 supervison, and that the same is true and correct to the best of my belief.

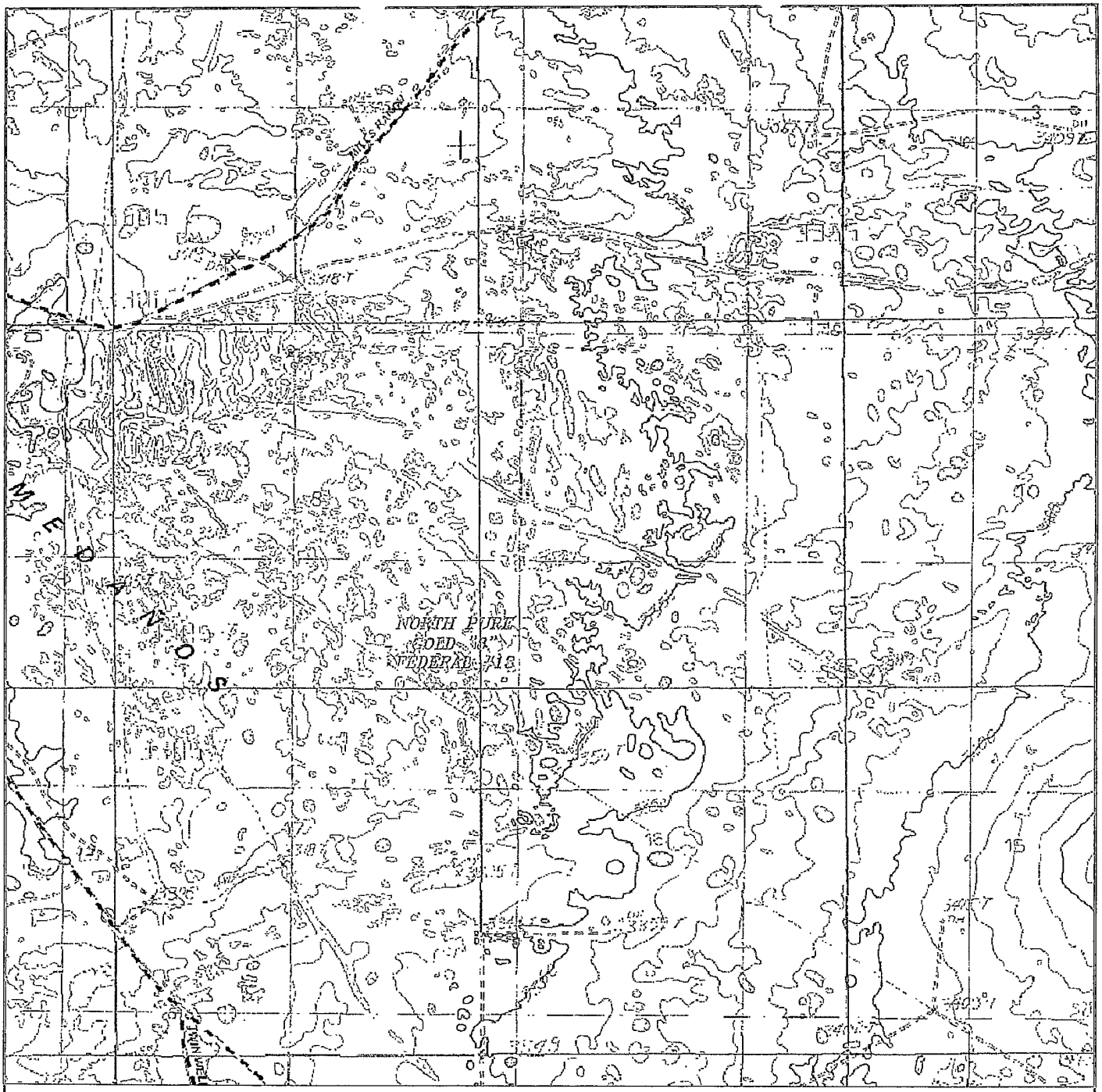
NOVEMBER 7, 2009
Date Surveyed

Signature & Seal of Professional Surveyor
7977

GARY L. JONES NEW MEXICO REGISTERED PROFESSIONAL LAND SURVEYOR NO.

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

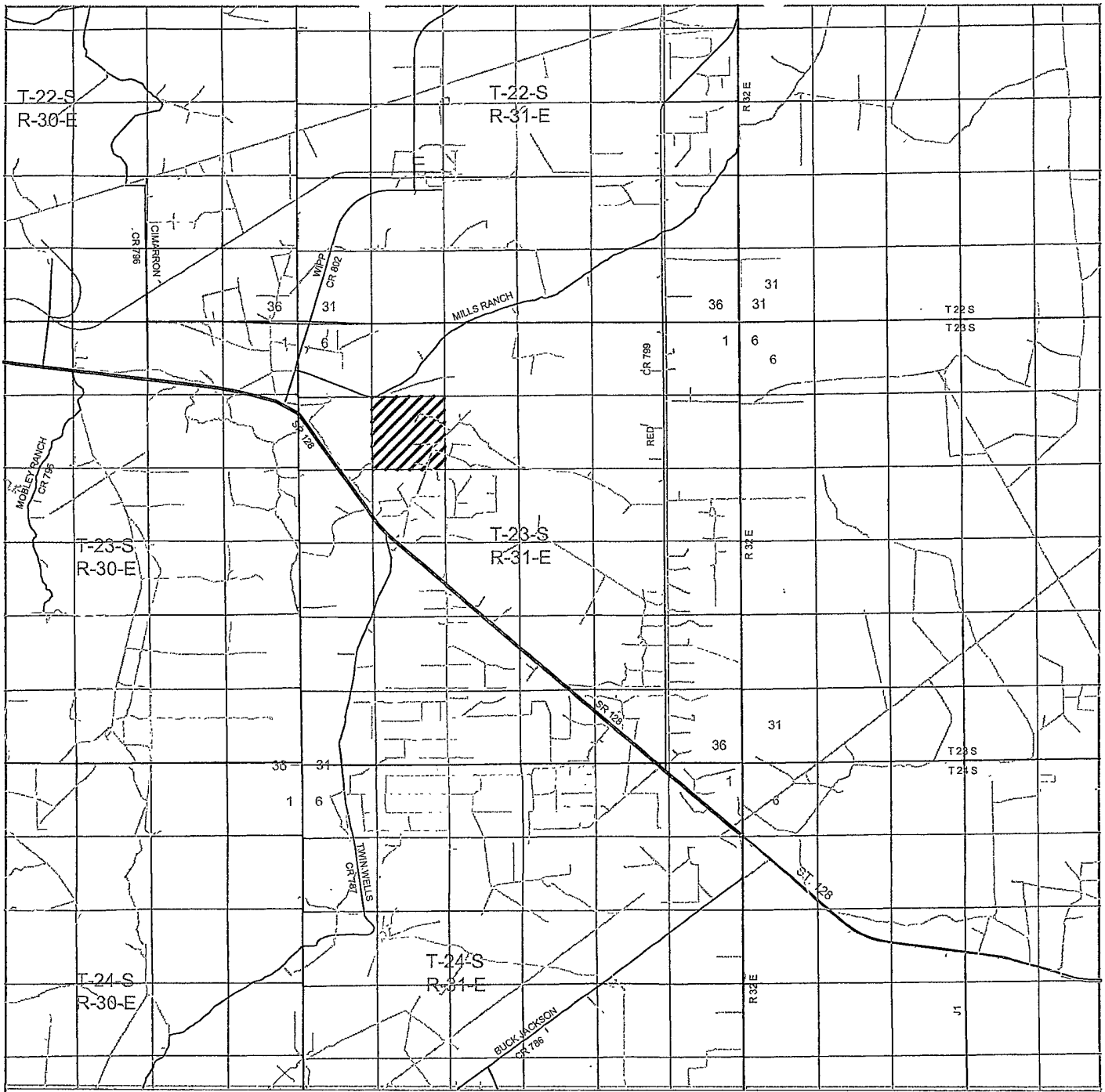


NORTH PURE GOLD "8" FEDERAL #13
Located 660' FSL and 1530' FEL
Section 8, Township 23 South, Range 31 East,
N.M.P.M., Eddy County, New Mexico.

Basin Surveys
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 21973
Survey Date:	11-19-2009
Scale:	1" = 2000'
Date:	11-23-2009

DEVON ENERGY PRODUCTION COMPANY, L.P.



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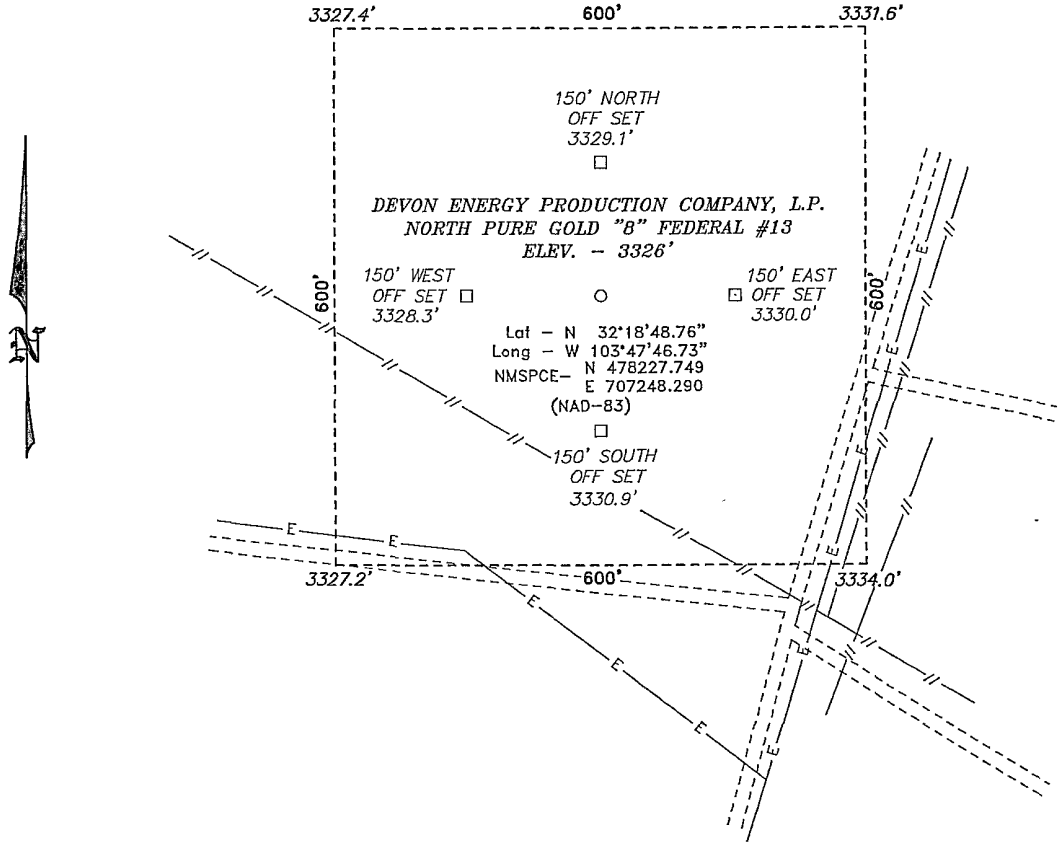
W.O. Number:	JMS 21973
Survey Date:	11-19-2009
Scale:	1" = 2 Miles
Date:	11-23-2009

DEVON ENERGY PRODUCTION COMPANY, L.P.

SECTION 8, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



200 0 200 400 FEET

SCALE: 1" = 200'

Directions to Location:

FROM THE JUNCTION OF HWY 128 AND TWIN WELLS, GO EAT 0.1 MILES TO LEASE ROAD, ON LEASE ROAD GO NORTH 1.3 MILES TO PROPOSED LOCATION.

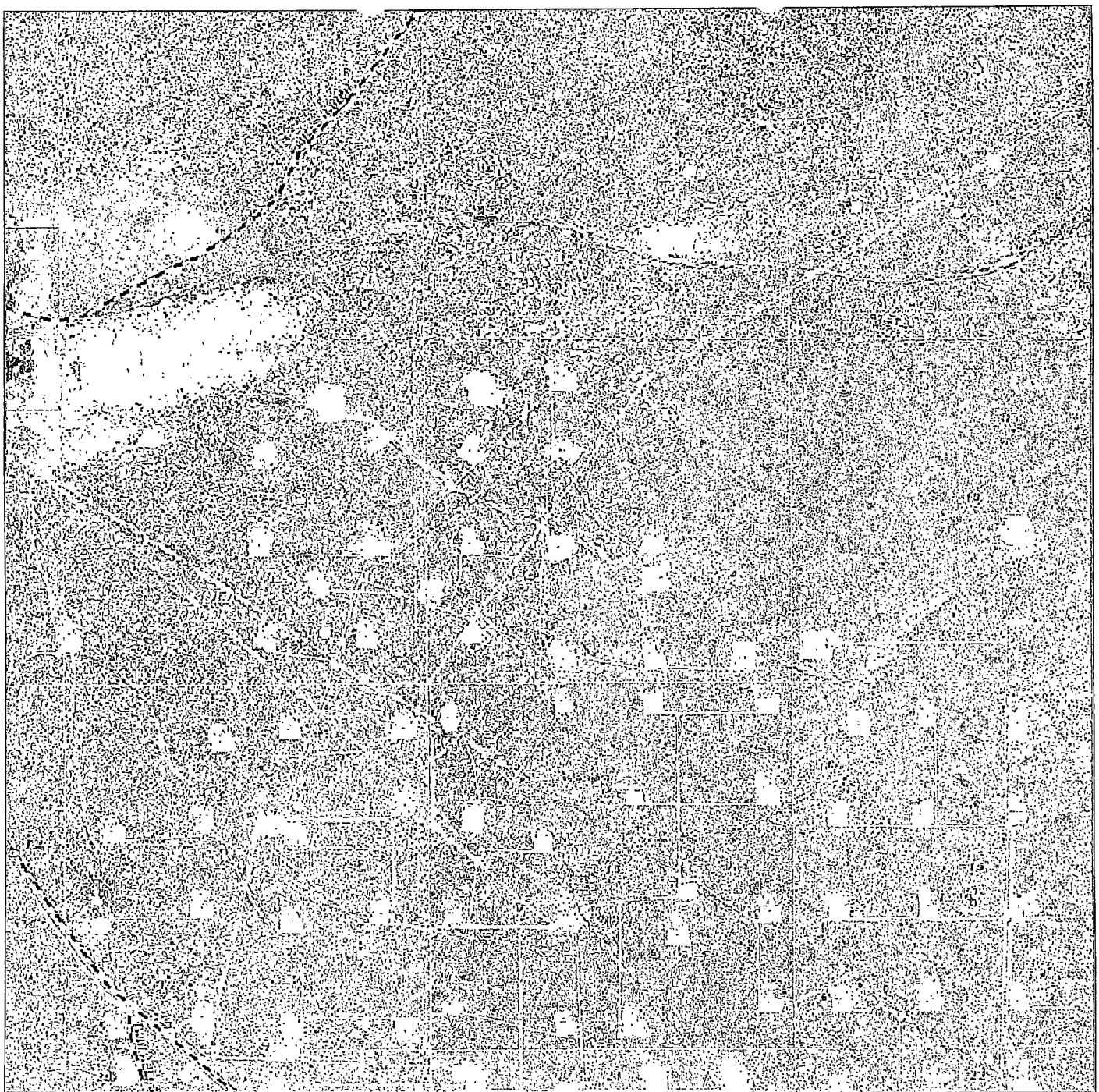
DEVON ENERGY PRODUCTION COMPANY, L.P.

REF: NORTH PURE GOLD "8" FEDERAL #13 / WELL PAD TOPO

THE NORTH PURE GOLD "8" FEDERAL #13 LOCATED 660' FROM THE SOUTH LINE AND 1530' FROM THE EAST LINE OF SECTION 8, 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: 21973	Drawn By: J. SMALL		
Date: 11-23-2009	Disk: JMS 21973	Survey Date: 11-23-2009	Sheet 1 of 1 Sheets



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

N

DEVON ENERGY PRODUCTION COMPANY, L.P.

KNOWN OR POTENTIAL HAZARDS/REMARKS:

No known hazards.

GEOLOGIC MARKERS

KB: 3346	PROGNOSIS			MUDLOG				E-LOG				
FORMATION	MD	Subsea	TVD	MD	Subsea	TVD	hi/lo	MD	Subsea	TVD	hi/lo	NOTES
ALLUVIUM	0	3346	0									
RUSTLER DOL	340	3006	340									
SALADO SALT	649	2697	649									
CASTILE	2666	680	2666									
BASE OF SALT	3792	-446	3792									
BELL CANYON	4041	-695	4041									
CHERRY CANYON	4978	-1632	4978									
BRUSHY CANYON	6277	-2931	6277									
1ST BONE SPRINGS LM.	7908	-4562	7908									
AVALON SHALE LOWER TOP	8482	-5136	8482									
AVALON SHALE LOWER BOTTOM	8679	-5333	8679									
1ST BONE SPRINGS SS.	8928	-5582	8928									
2ND BONE SPRINGS LM	9374	-6028	9374									
2ND BONE SPRINGS SS	9717	-6371	9717									
3RD BONE SPRINGS LM.	10038	-6692	10038									
3RD BONE SPRINGS SS.	10737	-7391	10737									
WOLFCAMP	11211	-7865	11211									
WOLFCAMP HOT SHALE TOP	12095	-8749	12095									
WOLFCAMP HOT SHALE BOTTOM	12229	-8883	12229									core 12485-12885
TOP PENN SHALE	12497	-9151	12497									
STRAWN	12884	-9538	12884									
TD PILOT	12950	-9604	12950									
KOP	**12187**	**-8841**	**12187**									
WOLFCAMP HOT SHALE BOTTOM	**12229**	**-8883**	**12229**									
TOP PENN SHALE	**12497**	**-9136**	**12482**									
HOLD 90 DEGREES (EST.)	**12760**	**-9321**	**12667**									
LATERAL TD	**16500**	**-9443**	**12760**									

devon

Devon Energy

Eddy Co., New Mexico (Nad 83)
North Pure Gold 8 Fed #13H
NPG 8 Fed #13H

Lateral #1

Plan: Design #1

Standard Planning Report

23 January, 2010

CUDD
DRILLING & MEASUREMENT
SERVICES

Database:	EDM 2003.21 Single User Db	**Local Co-ordinate Reference:**	Site North Pure Gold 8 Fed #13H
Company:	Devon Energy	**TVD Reference:**	WELL @ 3346.00ft (Original Well Elev)
Project:	Eddy Co., New Mexico (Nad 83)	**MD Reference:**	WELL @ 3346.00ft (Original Well Elev)
Site:	North Pure Gold 8 Fed #13H	**North Reference:**	Grid
Well:	NPG 8 Fed #13H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral #1		
Design:	Design #1		

Project	Eddy Co., New Mexico (Nad 83)		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	North Pure Gold 8 Fed #13H, Sec 8, T-23S, R-31E				
Site Position:		**Northing:**	482,547.59 ft	**Latitude:**	32° 19' 0.047 N
From:	Lat/Long	**Easting:**	1,030,043.40 ft	**Longitude:**	102° 45' 5 138 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	"	**Grid Convergence:**	0.85 °

Well	NPG 8 Fed #13H					
Well Position	**+N/-S**	0.00 ft	**Northing:**	482,547.59 ft	**Latitude:**	32° 19' 0.047 N
	+E/-W	0 00 ft	**Easting:**	1,030,043 40 ft	**Longitude:**	102° 45' 5.138 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	3,346.00 ft	**Ground Level:**	3,326.00 ft

Wellbore	Lateral #1				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF200510	01/23/10	7.36	60.47	48,932

Design	Design #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	0.00	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00	
12,187.04	0.00	0 00	12,187.04	0 00	0.00	0.00	0.00	0.00	0.00	
13,087.04	90.00	0.00	12,760 00	572.96	0 00	10.00	10.00	0.00	0 00	
16,474.08	90.00	0 00	12,760.00	3,960.00	0.00	0.00	0.00	0.00	0.00	PBHL - TD (NPG8F#'

Database:	EDM 2003.21 Single User Db	**Local Co-ordinate Reference:**	Site North Pure Gold 8 Fed #13H
Company:	Devon Energy	**TVD Reference:**	WELL @ 3346.00ft (Original Well Elev)
Project:	Eddy Co , New Mexico (Nad 83)	**MD Reference:**	WELL @ 3346.00ft (Original Well Elev)
Site:	North Pure Gold 8 Fed #13H	**North Reference:**	Grid
Well:	NPG 8 Fed #13H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral #1		
Design:	Design #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,211.00	0 00	0.00	11,211.00	0.00	0.00	0.00	0.00	0.00	0.00
Wolfcamp									
12,095.00	0 00	0.00	12,095.00	0.00	0.00	0.00	0.00	0.00	0.00
Wolfcamp Hot Shale Top									
12,187.00	0.00	0.00	12,187.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP - Build 10°/100'									
12,187.04	0 00	0.00	12,187.04	0.00	0.00	0.00	0.00	0.00	0.00
12,229.04	4 20	0.00	12,229.00	1.54	0.00	1.54	10.00	10.00	0.00
Wolfcamp Hot Shale Btm									
12,514 55	32.75	0.00	12,497.00	91.08	0.00	91.08	10 00	10.00	0.00
Penn Shale									
13,087.00	90.00	0.00	12,760.00	572.92	0.00	572.92	10.00	10.00	0.00
EOC - Hold I:90° @ A:0.0°									
13,087 04	90 00	0.00	12,760.00	572.96	0.00	572.96	10 00	10.00	0.00
16,474.08	90.00	0.00	12,760.00	3,960.00	0 00	3,960.00	0 00	0.00	0.00
PBHL - TD (NPG8F#13H)									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
11,211.00	11,211.00	Wolfcamp		0.00	
12,095.00	12,095 00	Wolfcamp Hot Shale Top		0.00	
12,229.04	12,229.00	Wolfcamp Hot Shale Btm		0 00	
12,514.55	12,497.00	Penn Shale		0.00	
	12,884.00	Strawn		0.00	

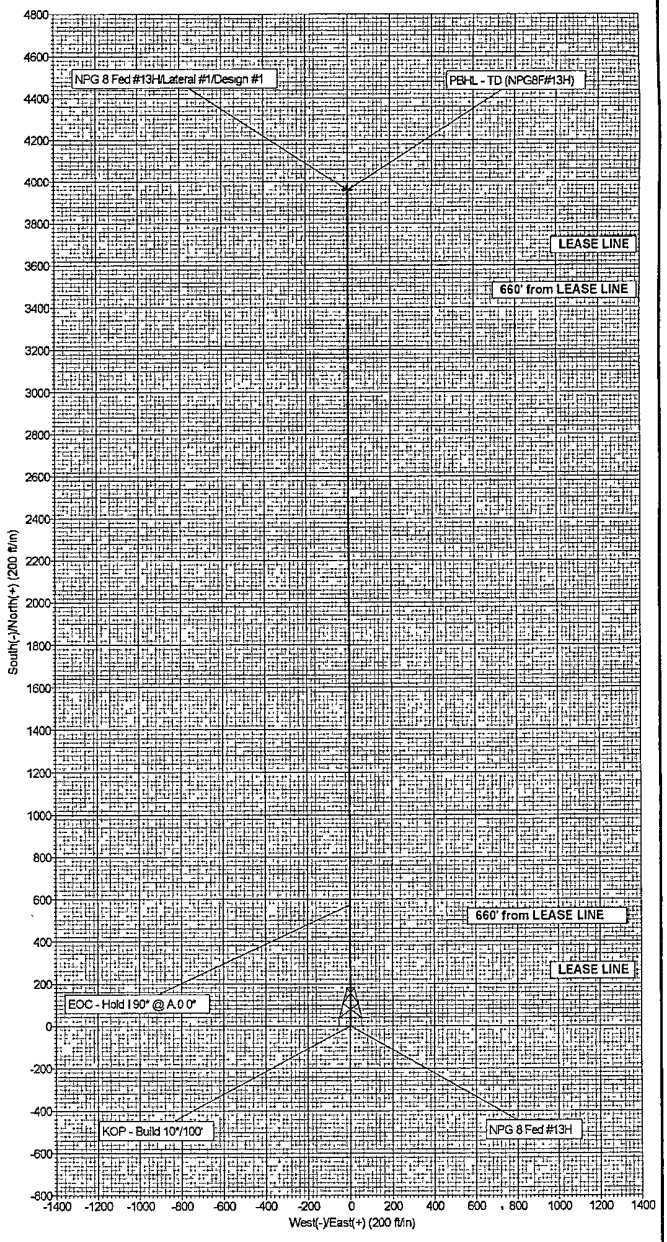
Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
12,187.00	12,187.00	0.00	0.00	KOP - Build 10°/100'
13,087.00	12,760 00	572.92	0.00	EOC - Hold I:90° @ A:0.0°

devon

CUDD DRILLING & MEASUREMENT SERVICES

Project Eddy Co , New Mexico (Nad 83)
Site. North Pure Gold 8 Fed #13H
Well. NPG 8 Fed #13H
Wellbore Lateral #1
Design Design #1



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
2	12187 04	0 00	0 00	12187 04	0 00	0 00	0 00	0 00	0 00	
3	13087 04	90 00	0 00	12760 00	572 96	0 00	10 00	0 00	572 96	
4	16474 08	90 00	0 00	12760 00	3960 00	0 00	0 00	0 00	3960 00	PBHL - TD (NPG8F#13H)

ANNOTATIONS

TVD	MD	Annotation
12187 00	12187 00	KOP - Build 10°/100'
12760 00	13087 00	EOC - Hold I 90° @ A 0 0°

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL - TD (NPG8F#13H)	12760 00	3960 00	0 00	486507 58	1030043 40	32° 19' 39 220 N	102° 45' 4 457 W	Point

WELL DETAILS NPG 8 Fed #13H

Ground Level
3326 00
WELL @ 3346 00ft (Original Well Elev)

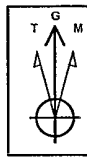
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0 00	0 00	482547 59	1030043 40	32° 19' 0 047 N	102° 45' 5 138 W	

PROJECT DETAILS Eddy Co , New Mexico (Nad 83)

Geodetic System. US State Plane 1983
Datum North American Datum 1983
Ellipsoid GRS 1980
Zone. New Mexico Eastern Zone
System Datum. Mean Sea Level

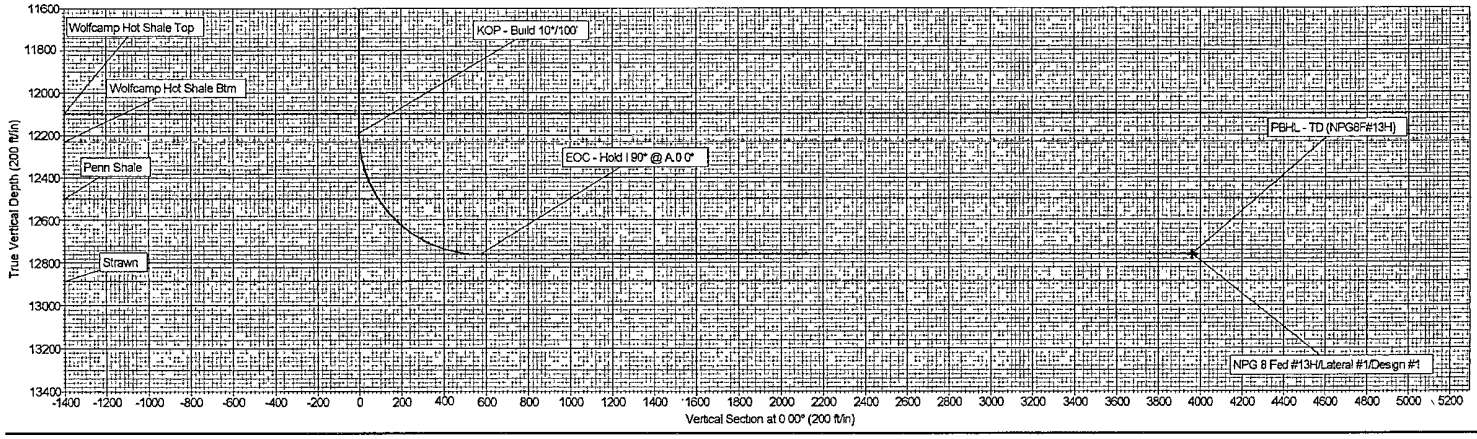
Plan Design #1 (NPG 8 Fed #13H/Lateral #1)

Created By Mike Starkey Date 14 47, January 23 2010
Checked _____ Date _____
Reviewed _____ Date _____
Approved _____ Date _____



Azimuths to Grid North
True North -0 85°
Magnetic North 6 52°

Magnetic Field
Strength 48932 1snT
Dip Angle 60 47°
Date 01/23/2010
Model IGRF200510



Devon Energy
NPG 8 Fed #13H - Design #1

Eddy Co., New Mexico (Nad 83)
North Pure Gold 8 Fed #13H

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00	0.00
12187.04	0.00	0.00	12187.04	0.00 N	0.00 E	0.00	0.00
12200.00	1.30	0.00	12200.00	0.15 N	0.00 E	0.15	10.00
12300.00	11.30	0.00	12299.27	11.10 N	0.00 E	11.10	10.00
12400.00	21.30	0.00	12395.13	39.12 N	0.00 E	39.12	10.00
12500.00	31.30	0.00	12484.67	83.37 N	0.00 E	83.37	10.00
12600.00	41.30	0.00	12565.16	142.49 N	0.00 E	142.49	10.00
12700.00	51.30	0.00	12634.17	214.69 N	0.00 E	214.69	10.00
12800.00	61.30	0.00	12689.59	297.77 N	0.00 E	297.77	10.00
12900.00	71.30	0.00	12729.74	389.22 N	0.00 E	389.22	10.00
13000.00	81.30	0.00	12753.40	486.25 N	0.00 E	486.25	10.00
13087.04	90.00	0.00	12760.00	572.96 N	0.00 E	572.96	10.00
13100.00	90.00	0.00	12760.00	585.92 N	0.00 E	585.92	0.00
13200.00	90.00	0.00	12760.00	685.92 N	0.00 E	685.92	0.00
13300.00	90.00	0.00	12760.00	785.92 N	0.00 E	785.92	0.00
13400.00	90.00	0.00	12760.00	885.92 N	0.00 E	885.92	0.00
13500.00	90.00	0.00	12760.00	985.92 N	0.00 E	985.92	0.00
13600.00	90.00	0.00	12760.00	1085.92 N	0.00 E	1085.92	0.00
13700.00	90.00	0.00	12760.00	1185.92 N	0.00 E	1185.92	0.00
13800.00	90.00	0.00	12760.00	1285.92 N	0.00 E	1285.92	0.00
13900.00	90.00	0.00	12760.00	1385.92 N	0.00 E	1385.92	0.00
14000.00	90.00	0.00	12760.00	1485.92 N	0.00 E	1485.92	0.00
14100.00	90.00	0.00	12760.00	1585.92 N	0.00 E	1585.92	0.00
14200.00	90.00	0.00	12760.00	1685.92 N	0.00 E	1685.92	0.00
14300.00	90.00	0.00	12760.00	1785.92 N	0.00 E	1785.92	0.00

14400.00	90.00	0.00	12760.00	1885.92 N	0.00 E	1885.92
0.00						
14500.00	90.00	0.00	12760.00	1985.92 N	0.00 E	1985.92
0.00						
14600.00	90.00	0.00	12760.00	2085.92 N	0.00 E	2085.92
0.00						
14700.00	90.00	0.00	12760.00	2185.92 N	0.00 E	2185.92
0.00						
14800.00	90.00	0.00	12760.00	2285.92 N	0.00 E	2285.92
0.00						
14900.00	90.00	0.00	12760.00	2385.92 N	0.00 E	2385.92
0.00						
15000.00	90.00	0.00	12760.00	2485.92 N	0.00 E	2485.92
0.00						
15100.00	90.00	0.00	12760.00	2585.92 N	0.00 E	2585.92
0.00						
15200.00	90.00	0.00	12760.00	2685.92 N	0.00 E	2685.92
0.00						
15300.00	90.00	0.00	12760.00	2785.92 N	0.00 E	2785.92
0.00						
15400.00	90.00	0.00	12760.00	2885.92 N	0.00 E	2885.92
0.00						
15500.00	90.00	0.00	12760.00	2985.92 N	0.00 E	2985.92
0.00						
15600.00	90.00	0.00	12760.00	3085.92 N	0.00 E	3085.92
0.00						
15700.00	90.00	0.00	12760.00	3185.92 N	0.00 E	3185.92
0.00						
15800.00	90.00	0.00	12760.00	3285.92 N	0.00 E	3285.92
0.00						
15900.00	90.00	0.00	12760.00	3385.92 N	0.00 E	3385.92
0.00						
16000.00	90.00	0.00	12760.00	3485.92 N	0.00 E	3485.92
0.00						
16100.00	90.00	0.00	12760.00	3585.92 N	0.00 E	3585.92
0.00						
16200.00	90.00	0.00	12760.00	3685.92 N	0.00 E	3685.92
0.00						
16300.00	90.00	0.00	12760.00	3785.92 N	0.00 E	3785.92
0.00						
16400.00	90.00	0.00	12760.00	3885.92 N	0.00 E	3885.92
0.00						
16474.08	90.00	0.00	12760.00	3960.00 N	0.00 E	3960.00
0.00						

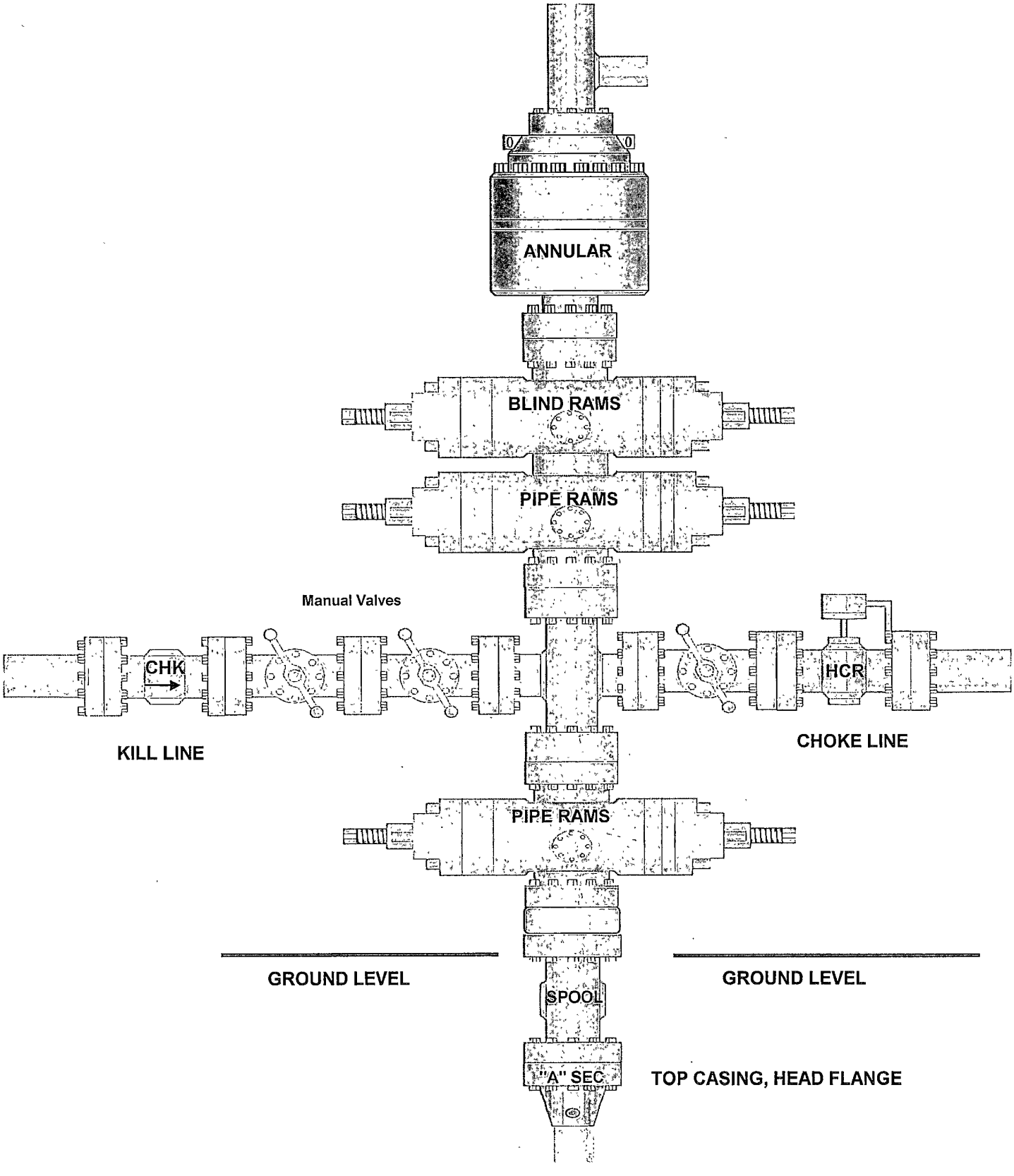
All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to WELL. Northings and Eastings are relative to Site.

The Dogleg Severity is in Degrees per 100 feet.
Vertical Section is from Slot and calculated along an Azimuth of 0.000° (Grid).

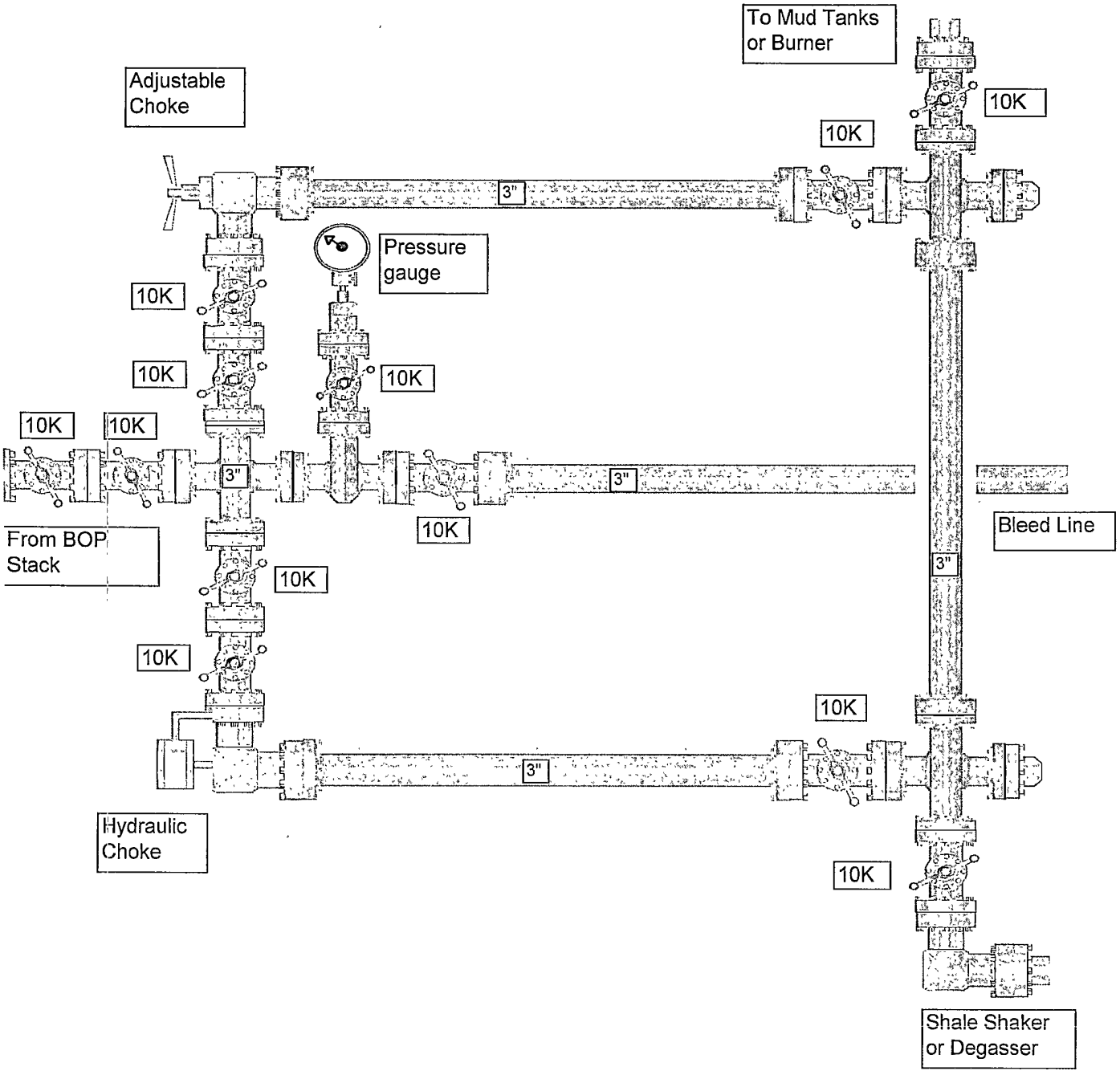
Coordinate System is North American Datum 1983 US State Plane 1983, New Mexico Eastern Zone.
Central meridian is -104.333°.
Grid Convergence at Surface is 0.846°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 16474.08ft., the Bottom Hole Displacement is 3960.00ft., in the Direction of 0.000° (Grid).

13-5/8" x 10,000 psi BOP Stack



10,000 PSI CHOKE MANIFOLD



Operator Name: Devon Energy Corp
Well Name: North Pure Gold 8 Federal 13
Job Description: Surface Casing
Date: February 9, 2010

Proposal No: 215855725A

JOB AT A GLANCE

Depth (TVD)	500 ft
Depth (MD)	500 ft
Hole Size	26 in
Casing Size/Weight :	20in, 94 lbs/ft
Pump Via	20" O.D. (19.124" .I.D) 94 #
Total Mix Water Required	8,734 gals
Spacer	
Fresh Water	10 bbls
Density	8.3 ppg
Lead Slurry	
Class C	745 sacks
Density	13.5 ppg
Yield	1.75 cf/sack
Tail Slurry	
Class C	300 sacks
Density	14.8 ppg
Yield	1.35 cf/sack
Displacement	
Mud	163 bbls
Density	8.8 ppg

Operator Name: Devon Energy Corp
Well Name: North Pure Gold 8 Federal 13
Job Description: Surface Casing
Date: February 9, 2010

Proposal No: 215855725A

WELL DATA

ANNULAR GEOMETRY

ANNULAR I.D. (in)	DEPTH(ft)	
	MEASURED	TRUE VERTICAL
26.000 HOLE	500	500

SUSPENDED PIPES

DIAMETER (in)		WEIGHT (lbs/ft)	DEPTH(ft)	
O.D.	I.D.		MEASURED	TRUE VERTICAL
20.000	19.124	94	500	500

Float Collar set @	460 ft
Mud Density	8.80 ppg
Mud Type	Water Based
Est. Static Temp.	80 ° F
Est. Circ. Temp.	80 ° F

VOLUME CALCULATIONS

400 ft	x	1.5053 cf/ft	with	115 % excess	=	1294.4 cf
100 ft	x	1.5053 cf/ft	with	115 % excess	=	323.9 cf
40 ft	x	1.9947 cf/ft	with	0 % excess	=	79.8 cf (inside pipe)
				TOTAL SLURRY VOLUME	=	1698.0 cf
					=	303 bbls

Operator Name: Devon Energy Corp
Well Name: North Pure Gold 8 Federal 13
Job Description: Surface Casing
Date: February 9, 2010

Proposal No: 215855725A

FLUID SPECIFICATIONS

Spacer 10.0 bbls Fresh Water @ 8.34 ppg

FLUID	VOLUME CU-FT	VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
Lead Slurry	1294	/ 1.75	= 745 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 4% bwoc Bentonite + 81.3% Fresh Water
Tail Slurry	404	/ 1.35	= 300 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 56.3% Fresh Water

Displacement 163.4 bbls Mud @ 8.8 ppg

CEMENT PROPERTIES

	SLURRY NO. 1	SLURRY NO. 2
Slurry Weight (ppg)	13.50	14.80
Slurry Yield (cf/sack)	1.75	1.35
Amount of Mix Water (gps)	9.17	6.35
Estimated Pumping Time - 70 BC (HH:MM)	3:30	2:30
COMPRESSIVE STRENGTH		
8 hrs @ 80 ° F (psi)		500
12 hrs @ 80 ° F (psi)	400	1150
15 hrs @ 80 ° F (psi)	500	
24 hrs @ 80 ° F (psi)	700	2100
72 hrs @ 80 ° F (psi)		2700

Operator Name: Devon Energy Corp
Well Name: North Pure Gold 8 Federal 13
Job Description: Intermediate Casing
Date: February 9, 2010

Proposal No: 215855725A

JOB AT A GLANCE

Depth (TVD)	4,000 ft
Depth (MD)	4,000 ft
Hole Size	17.5 in
Casing Size/Weight :	13 3/8 in, 48 lbs/ft
Pump Via	13 3/8" O.D. (12.715" .I.D) 48 #
Total Mix Water Required	29,290 gals
Spacer	
Fresh Water	20 bbls
Density	8.3 ppg
Lead Slurry	
35:65:6 Poz:Class C	2,360 sacks
Density	12.5 ppg
Yield	2.04 cf/sack
Tail Slurry	
60:40 Poz:Class C (MPA)	430 sacks
Density	13.8 ppg
Yield	1.37 cf/sack
Displacement	
Mud	622 bbls
Density	10.0 ppg

Operator Name: Devon Energy Corp
Well Name: North Pure Gold 8 Federal 13
Job Description: Intermediate Casing
Date: February 9, 2010

Proposal No: 215855725A

WELL DATA

ANNULAR GEOMETRY

ANNULAR I.D. (in)	DEPTH(ft)	
	MEASURED	TRUE VERTICAL
19.124 CASING	500	500
17.500 HOLE	4,000	4,000

SUSPENDED PIPES

DIAMETER (in)		WEIGHT (lbs/ft)	DEPTH(ft)	
O.D.	I.D.		MEASURED	TRUE VERTICAL
13.375	12.715	48	4,000	4,000

Float Collar set @	3,960 ft
Mud Density	10.00 ppg
Est. Static Temp.	112 ° F
Est. Circ. Temp.	99 ° F

VOLUME CALCULATIONS

500 ft	x	1.0190 cf/ft	with	0 % excess	=	509.5 cf
3,100 ft	x	0.6946 cf/ft	with	100 % excess	=	4310.4 cf
400 ft	x	0.6946 cf/ft	with	100 % excess	=	555.7 cf
40 ft	x	0.8818 cf/ft	with	0 % excess	=	35.3 cf (inside pipe)
				TOTAL SLURRY VOLUME	=	5410.9 cf
					=	965 bbls

Operator Name: Devon Energy Corp
Well Name: North Pure Gold 8 Federal 13
Job Description: Intermediate Casing
Date: February 9, 2010

Proposal No: 215855725A

FLUID SPECIFICATIONS

Spacer 20.0 bbls Fresh Water @ 8.34 ppg

FLUID	VOLUME CU-FT	VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
Lead Slurry	4820	/ 2.04	= 2360 sacks (35:65) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 6% bwoc Bentonite + 0.25% bwoc FL-52A + 107.7% Fresh Water
Tail Slurry	591	/ 1.37	= 430 sacks (60:40) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.1% bwoc Sodium Metasilicate + 4% bwoc MPA-5 + 65.4% Fresh Water

Displacement 621.9 bbls Mud @ 10 ppg

CEMENT PROPERTIES

	SLURRY NO. 1	SLURRY NO. 2
Slurry Weight (ppg)	12.50	13.80
Slurry Yield (cf/sack)	2.04	1.37
Amount of Mix Water (gps)	11.24	6.43
Estimated Pumping Time - 70 BC (HH:MM)	5:30	4:00
COMPRESSIVE STRENGTH		
8 hrs @ 107 ° F (psi)		500
12 hrs @ 107 ° F (psi)		1000
24 hrs @ 107 ° F (psi)		1900
72 hrs @ 107 ° F (psi)		2700
12 hrs @ 112 ° F (psi)	300	
24 hrs @ 112 ° F (psi)	650	
72 hrs @ 112 ° F (psi)	900	

ACTUAL CEMENT VOLUME MAY VARY BASED ON CALIPER.

Operator Name: Devon Energy Corp
Well Name: North Pure Gold 8 Federal 13
Job Description: 2nd Intermediate Casing
Date: February 9, 2010

Proposal No: 215855725A

JOB AT A GLANCE

Depth (TVD)	11,100 ft
Depth (MD)	11,100 ft
Hole Size	12.25 in
Casing Size/Weight :	9 5/8 in, 53.5 lbs/ft
Pump Via	9 5/8" O.D. (8.535" .I.D) 53.5 #
Total Mix Water Required	24,481 gals
Stage No: 1	**Float Collar set @** 11,060 ft
Spacer	
Fresh Water	20 bbls
Density	8.3 ppg
Spacer	
Surebond III	1,000 gals
Density	9.4 ppg
Spacer	
Fresh Water	10 bbls
Density	8.3 ppg
Lead Slurry	
35:65:6 Poz:Class H	1,100 sacks
Density	12.5 ppg
Yield	1.98 cf/sack
Tail Slurry	
Super C Modified	850 sacks
Density	13.3 ppg
Yield	1.56 cf/sack
Displacement	
Displacement Fluid	783 bbls

JOB AT A GLANCE (Continued)

Stage No: 2 **Stage Collar set @** 5,500 ft

Spacer	
Fresh Water	20 bbls
Density	8.3 ppg
Lead Slurry	
35:65:6 Poz:Class C	450 sacks
Density	12.5 ppg
Yield	2.04 cf/sack
Tail Slurry	
60:40 Poz:Class C (MPA)	150 sacks
Density	13.8 ppg
Yield	1.37 cf/sack
Displacement	
Displacement Fluid	389 bbls

Operator Name: Devon Energy Corp
Well Name: North Pure Gold 8 Federal 13
Job Description: 2nd Intermediate Casing
Date: February 9, 2010

Proposal No: 215855725A

WELL DATA

ANNULAR GEOMETRY

ANNULAR I.D. (in)	DEPTH(ft)	
	MEASURED	TRUE VERTICAL
12.715 CASING	4,000	4,000
12.250 HOLE	11,100	11,100

SUSPENDED PIPES

DIAMETER (in)		WEIGHT (lbs/ft)	DEPTH(ft)	
O.D.	I.D.		MEASURED	TRUE VERTICAL
9.625	8.535	53.5	11,100	11,100

STAGE: 1

Float Collar set @	11,060 ft
Mud Density	9.10 ppg
Mud Type	Water Based
Est. Static Temp.	163 ° F
Est. Circ. Temp.	136 ° F

VOLUME CALCULATIONS

3,500 ft	x	0.3132 cf/ft	with	100 % excess	=	2192.3 cf
2,100 ft	x	0.3132 cf/ft	with	100 % excess	=	1315.4 cf
40 ft	x	0.3973 cf/ft	with	0 % excess	=	15.9 cf (inside pipe)
				TOTAL SLURRY VOLUME	=	3523.6 cf
					=	628 bbls

STAGE: 2

Stage Collar set @	5,500 ft
Mud Density	9.10 ppg
Mud Type	Water Based
Est. Static Temp.	121 ° F
Est. Circ. Temp.	107 ° F

VOLUME CALCULATIONS

500 ft	x	0.3765 cf/ft	with	0 % excess	=	188.3 cf
1,171 ft	x	0.3132 cf/ft	with	100 % excess	=	733.6 cf
329 ft	x	0.3132 cf/ft	with	100 % excess	=	206.0 cf
				TOTAL SLURRY VOLUME	=	1127.8 cf
					=	201 bbls

Operator Name: Devon Energy Corp
Well Name: North Pure Gold 8 Federal 13
Job Description: 2nd Intermediate Casing
Date: February 9, 2010

Proposal No: 215855725A

FLUID SPECIFICATIONS

STAGE NO.: 1

Spacer	20.0 bbls Fresh Water @ 8.34 ppg
Spacer	1,000.0 gals Surebond III @ 9.35 ppg
Spacer	10.0 bbls Fresh Water @ 8.34 ppg

FLUID	VOLUME CU-FT	VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
Lead Slurry	2192	/ 1.98	= 1100 sacks (35:65) Poz (Fly Ash):Class H Cement + 2% bwow Sodium Chloride + 0.3% bwoc R-3 + 0.125 lbs/sack Cello Flake + 6% bwoc Bentonite + 0.4% bwoc FL-52A + 104.2% Fresh Water
Tail Slurry	1331	/ 1.56	= 850 sacks (15:61:11) Poz (Fly Ash):Class C Cement:CSE-2 + 1% bwow Potassium Chloride + 0.75% bwoc EC-1 + 0.125 lbs/sack Cello Flake + 0.4% bwoc CD-32 + 2 lbs/sack LCM-1 + 0.6% bwoc FL-25 + 0.6% bwoc FL-52A + 73.3% Fresh Water
Displacement			782.7 bbls Displacement Fluid

CEMENT PROPERTIES

	SLURRY NO. 1	SLURRY NO. 2
Slurry Weight (ppg)	12.50	13.30
Slurry Yield (cf/sack)	1.98	1.56
Amount of Mix Water (gps)	10.87	7.65
Estimated Pumping Time - 70 BC (HH:MM)	5:30	4:00
Free Water (mls) @ ° F @ 90 ° angle		0.0
Fluid Loss (cc/30min) at 1000 psi and ° F		50.0
COMPRESSIVE STRENGTH		
12 hrs @ 167 ° F (psi)	350	900
24 hrs @ 167 ° F (psi)	700	2100
72 hrs @ 167 ° F (psi)	100	2600

Operator Name: Devon Energy Corp
Well Name: North Pure Gold 8 Federal 13
Job Description: 2nd Intermediate Casing
Date: February 9, 2010

Proposal No: 215855725A

FLUID SPECIFICATIONS (Continued)

STAGE NO.: 2

Spacer				20.0 bbls Fresh Water @ 8.34 ppg
Lead Slurry	922	/ 2.04	=	450 sacks (35:65) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 6% bwoc Bentonite + 0.4% bwoc FL-52A + 107.7% Fresh Water
Tail Slurry	206	/ 1.37	=	150 sacks (60:40) Poz (Fly Ash):Class C Cement + 0.125 lbs/sack Cello Flake + 0.1% bwoc Sodium Metasilicate + 4% bwoc MPA-5 + 5% bwow Sodium Chloride + 65.4% Fresh Water
Displacement				389.2 bbls Displacement Fluid

CEMENT PROPERTIES

	SLURRY NO. 1	SLURRY NO. 2
Slurry Weight (ppg)	12.50	13.80
Slurry Yield (cf/sack)	2.04	1.37
Amount of Mix Water (gps)	11.24	6.43
Estimated Pumping Time - 70 BC (HH:MM)	4:00	3:30
Free Water (mls) @ ° F @ 90 ° angle		
Fluid Loss (cc/30min) at 1000 psi and ° F		
COMPRESSIVE STRENGTH		
12 hrs @ 106 ° F (psi)	400	
15 hrs @ 106 ° F (psi)	500	
24 hrs @ 106 ° F (psi)	750	
12 hrs @ 121 ° F (psi)		1700
24 hrs @ 121 ° F (psi)		2500

CEMENT VOLUMES WILL VARY BASED ON CALIPER.

Operator Name: Devon Energy Corp
Well Name: North Pure Gold 8 Federal 13
Job Description: Long String
Date: February 9, 2010

Proposal No: 215855725A

JOB AT A GLANCE

Depth (TVD)	12,750 ft
Depth (MD)	16,500 ft
Hole Size	8.5 in
Casing Size/Weight :	5 1/2 in, 23 lbs/ft
Pump Via	5 1/2" O.D. (4.670" .I.D) 23 #
Total Mix Water Required	9,003 gals
Spacer	
MCS-3	50 bbls
Density	15.5 ppg
Cement Slurry	
Class H	1,950 sacks
Density	16.0 ppg
Yield	1.13 cf/sack
Displacement	
Displacement Fluid	349 bbls

Operator Name: Devon Energy Corp
Well Name: North Pure Gold 8 Federal 13
Job Description: Long String
Date: February 9, 2010

Proposal No: 215855725A

WELL DATA

ANNULAR GEOMETRY

ANNULAR I.D. (in)	DEPTH(ft)	
	MEASURED	TRUE VERTICAL
8.535 CASING	11,100	11,100
8.500 HOLE	16,500	12,750

SUSPENDED PIPES

DIAMETER (in)		WEIGHT (lbs/ft)	DEPTH(ft)	
O.D.	I.D.		MEASURED	TRUE VERTICAL
5.500	4.670	23	16,500	12,750

Float Collar set @	16,460 ft
Mud Density	15.00 ppg
Mud Type	Oil Based
Est. Static Temp.	182 ° F
Est. Circ. Temp.	178 ° F

VOLUME CALCULATIONS

500 ft	x	0.2323 cf/ft	with	0 % excess	=	116.2 cf
5,400 ft	x	0.2291 cf/ft	with	70 % excess	=	2105.3 cf
40 ft	x	0.1189 cf/ft	with	0 % excess	=	4.8 cf (inside pipe)
				TOTAL SLURRY VOLUME	=	2226.2 cf
					=	397 bbls

Operator Name: Devon Energy Corp
Well Name: North Pure Gold 8 Federal 13
Job Description: Long String
Date: February 9, 2010

Proposal No: 215855725A

FLUID SPECIFICATIONS

Spacer — 50.0 bbls MCS-3 + 13.88 lbs/bbl Bentonite + 383 lbs/bbl Barite, Bulk + 2 gal/bbl SS-2 @ 15.5 ppg

FLUID	VOLUME CU-FT	VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
Cement Slurry	2226	/ 1.13	= 1950 sacks Premium Plus H Cement + 0.8% bwoc FL-63 + 1% bwoc CD-32 + 0.7% bwoc Sodium Metasilicate + 0.5% bwoc BA-11 + 0.4% bwoc R-21 + 41% Fresh Water
Displacement			348.7 bbls Displacement Fluid

CEMENT PROPERTIES

	SLURRY NO. 1
Slurry Weight (ppg)	16.00
Slurry Yield (cf/sack)	1.13
Amount of Mix Water (gps)	4.62
Estimated Pumping Time - 70 BC (HH:MM)	5:00
Free Water (mls) @ 178 ° F @ 90 ° angle	0.0
Fluid Loss (cc/30min) at 1000 psi and 178 ° F	40.0
COMPRESSIVE STRENGTH	
12 hrs @ 187 ° F (psi)	1600
24 hrs @ 187 ° F (psi)	2400
72 hrs @ 187 ° F (psi)	3200

CEMENT VOLUMES WILL VARY BASED ON CALIPER.

TEST SPACER SYSTEM WITH OIL BASED MUD.

BATCH MIX SPACER SYSTEM.

Operator Name: Devon Energy Corp
Well Name: North Pure Gold 8 Federal 13
Job Description: Plug Back and Whipstock Plug
Date: February 9, 2010

Proposal No: 215855725A

JOB AT A GLANCE

Depth (TVD)	13,100 ft
Depth (MD)	13,100 ft
Hole Size	8.5 in
Casing Size/Weight :	9 5/8 in, 53.5 lbs/ft
Pump Via	Casing 4 1/2" O.D. (3.920" .I.D) 13.5 #
Total Mix Water Required	3,808 gals

Plug No: 1

Spacer

Mud Clean II	15 bbls

Cement Slurry

Class H	550 sacks
Density	15.6 ppg
Yield	1.18 cf/sack

Plug No: 2

Spacer

Mud Clean II	15 bbls
Density	8.3 ppg

Cement Slurry

Class H	250 sacks
Density	17.0 ppg
Yield	0.99 cf/sack

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FLUID SPECIFICATIONS

Spacer = 15.0 bbls Mud Clean II

PLUG NO.	VOLUME CU-FT		VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
1	649	/	1.18	= 550 sacks Premium Plus H Cement + 0.15% bwoc R-3 + 46.4% Fresh Water
Spacer				= 15.0 bbls Mud Clean II @ 8.34 ppg
2	248	/	.99	= 250 sacks Premium Plus H Cement + 1% bwoc CD-32 + 0.05% bwoc ASA-301 + 0.15% bwoc R-21 + 33.1% Fresh Water

CEMENT PROPERTIES

	PLUG NO. 1	PLUG NO. 2
Slurry Weight (ppg)	15.60	17.00
Slurry Yield (cf/sack)	1.18	0.99
Amount of Mix Water (gps)	5.23	3.73
Estimated Pumping Time - 70 BC (HH:MM)	4:00	5:00
COMPRESSIVE STRENGTH		
12 hrs @ 185 ° F (psi)	1500	3300
24 hrs @ 185 ° F (psi)	2700	5500
72 hrs @ 185 ° F (psi)	3500	

PLUG GEOMETRY

	PLUG TOP		PLUG BOTTOM	
1	11750 ft	to	13100 ft	with 8.5 inch Open Hole PDSqT = 160 ° F PDST = 184.8 ° F
2	11250 ft	to	11750 ft	with 8.5 inch Open Hole PDSqT = 150 ° F PDST = 174 ° F

PLUG #1 - 11750' - 13100'

PUMP 550 SACK PLUG (20% EXCESS OVER TRUE HOLE).

PLUG #2 - 11250' - 11750'

PUMP 250 SACKS FOR WHIPSTOCK PLUG (20% EXCESS OVER TRUE HOLE)

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Devon Energy Production Company**
LEASE NO.:	**NM-77046**
WELL NAME & NO.:	**North Pure Gold 8 Federal 13**
SURFACE HOLE FOOTAGE:	**660' FSL & 1530' FEL**
BOTTOM HOLE FOOTAGE LOCATION:	**660' FNL & 1530' FWL Section 9, T. 23 S., R 31 E., NMPM**
COUNTY:	**Eddy County, New Mexico**

I. 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.

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 CAL/GR/N well log run from TD to surface 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 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. 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 Springs.

1. The **20** inch surface casing shall be set at **approximately 500 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 a 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 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 Lamar Limestone.**

Formation below the 13-3/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

3. The minimum required fill of cement behind the **9-5/8** inch second intermediate 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.

b. Second stage above DV tool, cement shall:

☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

Pilot hole is required to have a 1,000' plug at the bottom of the hole and it must be tagged. Tag depth to be recorded and reported on subsequent sundry with casing information.

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

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

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

   ☒ Cement should tie-back at least 7100 feet into previous casing string. Operator shall provide method of verification. **Additional cement may be required as the excess calculates to -32%.**

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. 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.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **13-3/8** inch intermediate casing shoe shall be **10,000 (10M)** psi. **10M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

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

   a. Casing cut-off and BOP installation will not be initiated until the cement has had a minimum of 8 hours setup time for a water basin. The casing shall remain stationary and under pressure for at least eight hours after the operator places the cement. In the potash area, the minimum time is 12 hours and the casing shall remain stationary and under pressure during this time period. Casing shall be under pressure if the operator uses some acceptable means of holding pressure or if the operator employs one or more float valves to hold the cement in place. Testing the BOP/BOPE against a plug can commence after meeting the above conditions plus the BOP installation time.

   b. The tests shall be done by an independent service company utilizing a test plug.

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.

f. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

D. DRILLING MUD

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

Proposed mud weight may not be adequate for drilling through Wolfcamp.

E. DRILL STEM TEST

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

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