Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

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 - Other instructions on reverse side.

5. Lease Serial No.
NMNM89057

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
SNAPPING 10 FEDERAL 5H

2. Name of Operator
DEVON ENERGY PRODUCTION CO.LP
Contact: TRINA C COUCH
Mail: trina.couch@dvn.com

9. API Well No.
30-015-40994

3a. Address
DEVON ENERGY PRODUCTION CO.LP 333 WEST SHERIDAN AVE
OKLAHOMA CITY, OK 73102-5015

3b. Phone No. (include area code)
Ph: 405-228-8203
Fx: 405-552-8113

10. Field and Pool, or Exploratory
AVES JENNINGS;BONE SPRING

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 10 T26S R31E 175FSL 160FEL

11. County or Parish, and State
EDDY COUNTY COUNTY, NM

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

TYPE OF 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 to Original A PD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations 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 requirements, 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 change the casing design on the Snapping 10 Fed 5H. The approved APD call for 5-1/2", 17#, HCP-110, LTC from surface to a depth of 8200', then crossover to 5/1/2", 17#, HCP-110, BTC and runs to TD at 13,559".
Devon requests to change this design to 5-1/2", 17#, P-110, DWC/C that will run from surface to TC at 14,703'. Attached you will find the new casing design along with the new design factors and updated cementing volumes. You will also find a spec sheet for this new casing and the updated directional plan.

RECEIVED
DEC 02 2013
NMOCD ARTESIA

Accepted for record
NMOCD 12/3/2013

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #228108 verified by the BLM Well Information System
For DEVON ENERGY PRODUCTION CO.LP, sent to the Carlsbad
Committed to AFMSS for processing by WESLEY INGRAM on 11/27/2013 ()

Name *(Printed/Typed)* TRINA C COUCH — Title REGULATORY ~~ASSOCIATE~~

Signature (Electronic Submission) — Date 11/26/2013

APPROVED
NOV 27 2013
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By _____ Title _____

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

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.

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

SNAPPING 10 FED 5H – APD DRILLING PLAN
KKS 5-14-12
Revised 10-01-12 KKS
Revised 11/21/2013 AAA

Casing Program

Hole Size	*Hole Interval*	*OD Csg*	*Casing Interval*	*Weight*	*Collar*	*Grade*
17-1/2"	0 – 1,440	13-3/8"	0 – 1,440	48#	STC	H-40
12-1/4"	1,440 – 4,150	9-5/8"	0 – 4,150	40#	LTC	J-55
8-3/4"	4,100-1,4703	5-1/2"	0 – 14,703	17#	DWC/C	P-110

Note: only new casing will be utilized. Casing will not be void of fluid when running in the hole.

MAXIMUM TVD 10,070 FT

Design Factors:

Casing Size	Collapse Design Factor	Burst Design Factor	Tension Design Factor
13-3/8" 48# H-40 STC	1.14	2.57	4.66
9-5/8" 40# J-55 LTC	1.19	1.83	3.13
5-1/2" 17# P-110 DWC/C	1.59	2.26	2.18

The maximum possible collapse load that the intermediate casing will experience will result from evacuated casing with the pore pressure exerting a collapse load at TD. The pore pressure is estimated to be 9.0 ppg for this calculation. This results in a collapse design factor of 1.19 for 9-5/8" 40# J-55 LT&C casing at a depth of 4,500 ft. While running the intermediate casing, the casing will never be completely evacuated. There is no potential for the intermediate casing to be used as a production string.

Mud Program:

Depth	Mud Wt.	Visc.	Fluid Loss	Type System
0 – 1,440	8.4 – 9.0	30 – 34	N/C	FW
1,440 – 4,150	9.8 – 10.0	28 – 32	N/C	Brine
4,150 – 14,703	8.6 – 9.0	28 – 32	N/C-12	FW

Pressure Control Equipment:

The BOP system used to drill the **12-1/4" and 8-3/4"** holes will consist of a **13-5/8" 3M 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 casing shoe.

The pipe rams will be operated and checked as per Onshore Order No 2. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at **3,000 psi WP**.

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

SU COA

Cementing Program (all cement volumes based on at least 25% excess)

13-3/8" Surface

Fluid 1: Pump 20 bbl
Fresh Water

Fluid Volume:	20 bbl

Fluid 2: Pump 20 bbl
Gel Spacer
2.5 lbm/bbl K-35 (Buffer)
2.5 lbm/bbl FWCA (Gelling Agent)

Fluid Volume:	20 bbl

Fluid 3: Lead with 760 sks
EXTENDACEM System
0.25 lbm/sk Poly-E-Flake (Lost Circulation Additive)

Fluid Weight	13.5lbm/gal
Slurry Yield:	1.72 ft^3/sk
Total Mixing Fluid:	9.08 Gal/sk
Top of Fluid:	0 ft
Calculated Fill:	940 ft
Volume:	232.59 bbl
Calculated Sacks:	758.81 sks
Proposed Sacks:	760 sks

Fluid 4: Tail-in with 555 sks
HalCem System

Fluid Weight	14.80
Slurry Yield:	1.33 ft^3/sk
Total Mixing Fluid:	6.34 Gal/sk
Top of Fluid:	940 ft
Calculated Fill:	500 ft
Volume:	130.00 bbl
Calculated Sacks:	550.46 sks
Proposed Sacks:	555 sks

9-5/8" Intermediate

Fluid 1: Pump 20 bbl
Water Spacer

Fluid Volume:	20 bbl

Fluid 2: Pump 20 bbl
Gel Spacer
2.5 lbm/bbl WG-19 (Gelling Agent)

Fluid Volume:	20 bbl

Fluid 3: Lead with 800 sks
EconoCem System
0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)
5 % Salt (Salt)
0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)
0.4% HR-800 (Retarder)

Fluid Weight	12.90
Slurry Yield:	1.85 ft^3/sk
Total Mixing Fluid:	9.82 Gal/sk
Top of Fluid:	0 ft
Calculated Fill:	3150 ft
Volume:	263.49 bbl
Calculated Sacks:	799.23 sks
Proposed Sacks:	800 sks

Fluid 3: Tail-in with 450 sks
HalCem - C
0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)
0.4% HR-800 (Retarder)

Fluid Weight	14.80 lb/gal
Slurry Yield:	1.33 ft^3/sk
Total Mixing Fluid:	6.32 Gal/sk
Top of Fluid:	3150 ft
Calculated Fill:	1000 ft
Volume:	100.65 bbl
Calculated Sacks:	425.85 sks
Proposed Sacks:	430 sks

5-1/2" Production

Fluid 1: Pump 20 bbl
Fresh Water

Fluid Volume:	20 bbl

Fluid 2: 1st Lead Cement - 465 sks
VERSACEM (TM) SYSTEM
0.5 lbm/sk D-AIR 5000 (Defoamer)
1 lbm/sk Kol-Seal (Lost Circulation Additive)
0.3 % HR-601 (Retarder)

Fluid Weight	11.90 lb/gal
Slurry Yield:	2.26 ft^3/sk
Total Mixing Fluid:	12.89
Top of Fluid:	3600 ft
Calculated Fill:	3397 ft
Volume:	185.65 bbl
Calculated Sacks:	461.21 sks
Proposed Sacks:	465 sks

Fluid 3: 2nd Lead Cement - 325 sks
EconoCem - HLH
0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)
0.25 lbm/sk HR-601 (Retarder)

Fluid Weight	12.50 lb/gal
Slurry Yield:	1.95 ft^3/sk
Total Mixing Fluid:	10.79Gal/sk
Top of Fluid:	6997 ft
Calculated Fill:	2000 ft
Volume:	112.47 bbl
Calculated Sacks:	323.67 sks
Proposed Sacks:	325 sks

Fluid 4: Tail Cement - 1320 sks
VersaCem - H
0.5 % Halad®-344 (Low Fluid Loss Control)
0.4 % CFR-3 (Dispersant)
1 lbm/sk Salt (Salt)
0.2 % HR-601 (Retarder)

Fluid Weight	14.50 lb/gal
Slurry Yield:	1.22 ft^3/sk
Total Mixing Fluid:	5.38 Gal/sk
Top of Fluid:	8997 ft
Calculated Fill:	5707 ft
Volume:	320.94 bbl
Calculated Sacks:	1475.8 sks
Proposed Sacks:	1480 sks

Production Casing 2-Stage Option (Contingency Only)
5-1/2" Production (Contingency Only)

STAGE 1

Fluid 1: Pump 20 bbl
Fresh Water

Fluid Volume:	20 bbl

Fluid 2: 2nd Lead Cement - 405 sks
EconoCem - HLH
0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)
0.25% HR-601 (Retarder)

Fluid Weight	12.50 lb/gal
Slurry Yield:	1.96 ft^3/sk
Total Mixing Fluid:	10.86Gal/sk
Top of Fluid:	6500 ft
Calculated Fill:	2497 ft
Volume:	140.42 bbl
Calculated Sacks:	402.25 sks
Proposed Sacks:	405 sks

Fluid 3: Tail Cement – 1480 sks
VersaCem – H

0.5 %	Halad®-344 (Low Fluid Loss Control)
0.4 %	CFR-3 (Dispersant)
1 lbm/sk	Salt (Salt)
0.2 %	HR-601 (Retarder)

Fluid Weight	14.50 lb/gal
Slurry Yield:	1.22 ft^3/sk
Total Mixing Fluid:	5.38 Gal/sk
Top of Fluid:	8997 ft
Calculated Fill:	5707 ft
Volume:	320.94 bbl
Calculated Sacks:	1475.8 sks
Proposed Sacks:	1480 sks

See COA

STAGE 2
DV TOOL: 6500'

Fluid 1: Pump 20 bbl
Fresh Water

Fluid Volume:	20 bbl

Fluid 2: Lead Cement - 375 sks
EconoCem System
0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)
0.25% HR-601 (Retarder)

Fluid Weight	12.50 lb/gal
Slurry Yield:	1.96 ft^3/sk
Total Mixing Fluid:	10.86Gal/sk
Top of Fluid:	3600 ft
Calculated Fill:	2400 ft
Volume:	129.58 bbl
Calculated Sacks:	371.19 sks
Proposed Sacks:	375 sks

Fluid 3: Tail Cement - 120 sks
HALCEM SYSTEM
0.2% HR-800 (Low Fluid Loss Control)

Fluid Weight	14.80 lb/gal
Slurry Yield:	1.33 ft^3/sk
Total Mixing Fluid:	6.34Gal/sk
Top of Fluid:	6000 ft
Calculated Fill:	500 ft
Volume:	28.12 bbl
Calculated Sacks:	118.88 sks
Proposed Sacks:	120 sks

TOC for All Strings:

Surface:	0'
Intermediate:	0'
Production:	3,650'

ACTUAL CEMENT VOLUMES WILL BE ADJUSTED BASED ON FLUID CALIPER AND CALIPER LOG DATA.

Weatherford®

Drilling Services

Proposal

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devon

SNAPPING 10 FEDERAL 5H

EDDY COUNTY, NM

WELL FILE: **PLAN 2**

NOVEMBER 11, 2013

Weatherford International, Ltd.
P.O. Box 61028
Midland, TX 79711 USA
+1.432.561.8892 Main
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devon

Snapping 10 Federal 5H
Eddy Co., New Mexico

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	9497.04	0.00	0.00	9497.04	0.00	0.00	0.00	0.00	0.00	
3	10397.04	90.00	336.80	10070.00	526.63	-225.71	10.00	336.80	538.47	
4	10629.08	90.00	0.00	10070.00	752.38	-272.04	10.00	90.00	766.47	
5	14703.87	90.00	0.00	10070.00	4827.17	-271.75	0.00	0.00	4834.81	PBHL

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Snapping 10 Federal 5H	0.00	0.00	382631.68	719606.88	32°03'02.255N	103°45'28.588W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL	10070.00	4827.17	-271.75	387458.85	719335.13	Rectangle (4101x50)

LEGEND

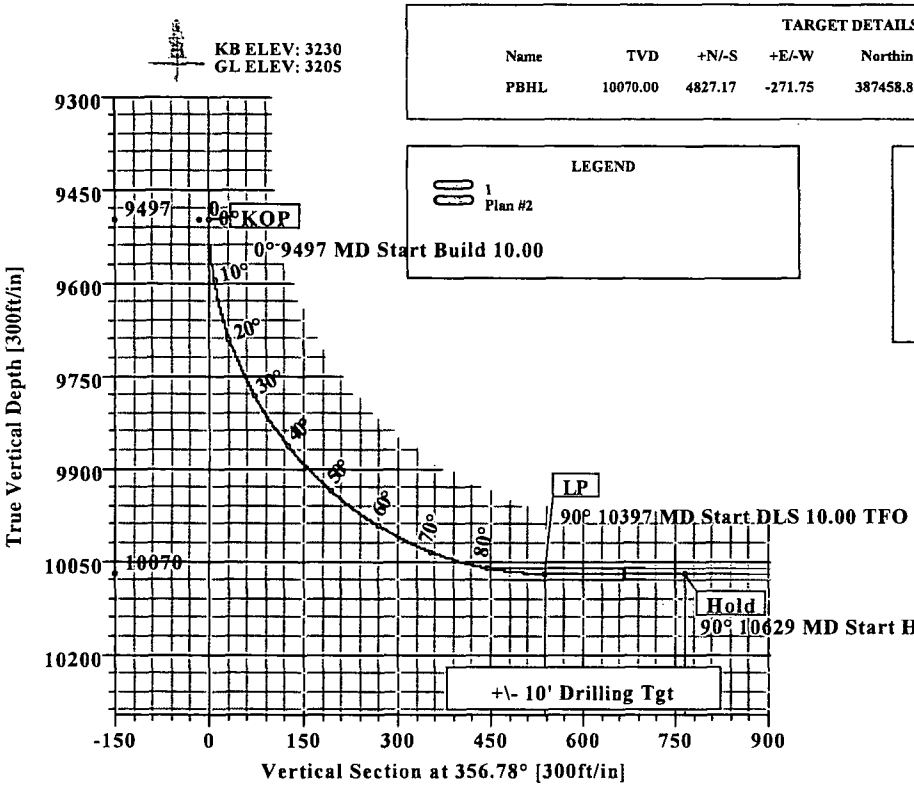
1
Plan #2

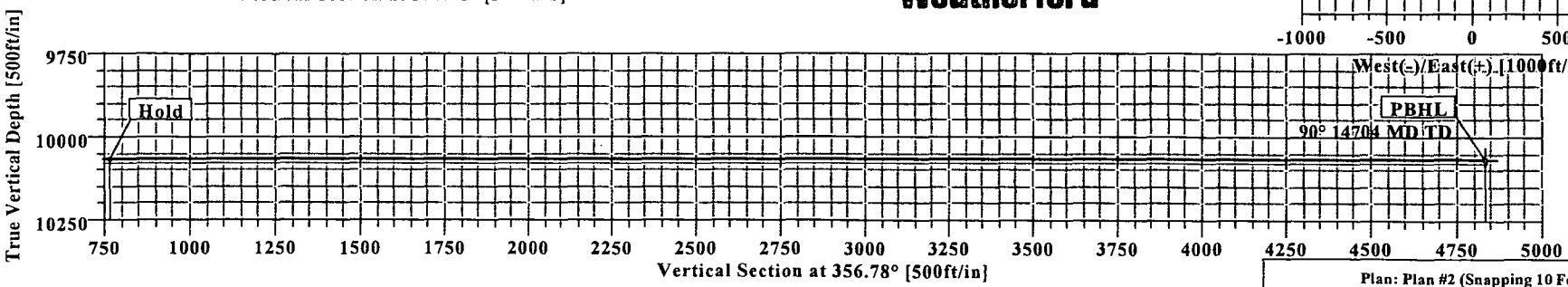
SITE DETAILS

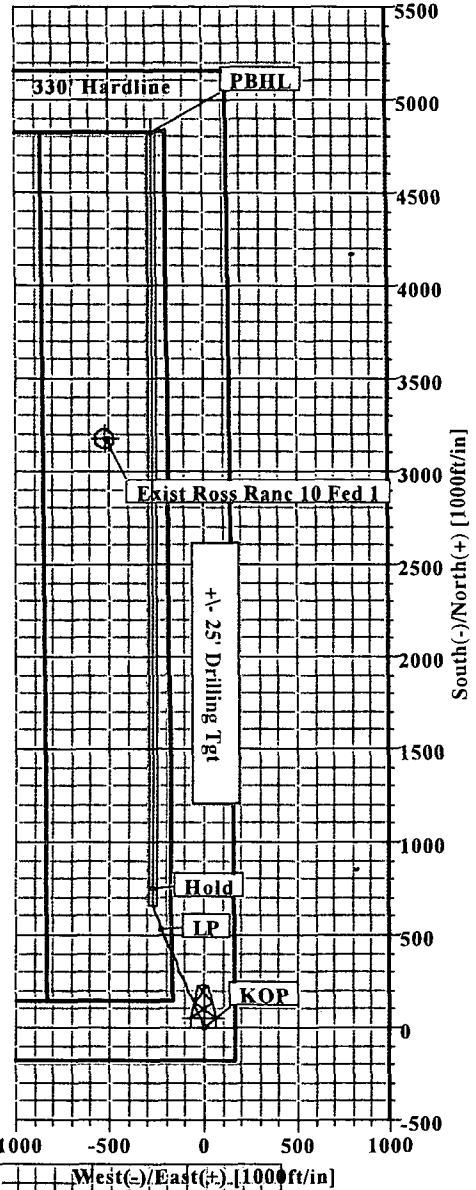
Snapping 10 Federal 5H

Site Centre Northing: 382631.68
Easting: 719606.88

Ground Level: 3205.00
Positional Uncertainty: 0.00
Convergence: 0.31







Weatherford

Plan: Plan #2 (Snapping 10 Federal 5H/1)

Created By: Russell W. Joyner Date: 11/12/2013

Weatherford
Wft Plan Report X Y's.

Company:	Devon Energy	Date: 11/12/2013 Time: 14:03:45	Page: 1
Field:	Eddy Co., NM (NAD 83)	Co-ordinate(NE) Reference:	Well: Snapping 10 Federal 5H, Grid North
Site:	Snapping 10 Federal 5H	Vertical (TVD) Reference:	SITE 3230.0
Well:	Snapping 10 Federal 5H	Section (VS) Reference:	Well (0.00N,0.00E,356.78Azi)
Wellpath:	1	Survey Calculation Method:	Minimum Curvature Db: Sybase

Plan:	Plan #2	Date Composed:	5/10/2013
		Version:	1
Principal:	Yes	Tied-to:	From Surface

Site: Snapping 10 Federal 5H

Site Position:		Northing:	382631.68 ft	Latitude:	32 3 2.255	N
From:	Map	Easting:	719606.88 ft	Longitude:	103 45 28.588	W
Position Uncertainty:	0.00 ft			North Reference:	Grid	
Ground Level:	3205.00 ft			Grid Convergence:	0.31	deg

Well: Snapping 10 Federal 5H — **Slot Name:**

Well Position:	+N/-S 0.00 ft	Northing:	382631.68 ft	Latitude:	32 3 2.255	N
	+E/-W 0.00 ft	Easting :	719606.88 ft	Longitude:	103 45 28.588	W
Position Uncertainty:	0.00 ft					

Wellpath: 1

				Drilled From:	Surface
				Tie-on Depth:	0.00 ft
Current Datum:	SITE	Height	3230.00 ft	Above System Datum:	Mean Sea Level
Magnetic Data:	10/15/2013			Declination:	7.37 deg
Field Strength:	48283 nT			Mag Dip Angle:	59.94 deg

Vertical Section: Depth From (TVD) ft	+N/-S ft	+E/-W ft	Direction deg
0.00	0.00	0.00	356.78

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9497.04	0.00	0.00	9497.04	0.00	0.00	0.00	0.00	0.00	0.00	
10397.04	90.00	336.80	10070.00	526.63	-225.71	10.00	10.00	0.00	336.80	
10629.08	90.00	0.00	10070.00	752.38	-272.04	10.00	0.00	10.00	90.00	
14703.87	90.00	0.00	10070.00	4827.17	-271.75	0.00	0.00	0.00	0.00	PBHL

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
9400.00	0.00	0.00	9400.00	0.00	0.00	0.00	0.00	382631.68	719606.88	
9497.04	0.00	0.00	9497.04	0.00	0.00	0.00	0.00	382631.68	719606.88	KOP
9500.00	0.30	336.80	9500.00	0.01	0.00	0.01	10.00	382631.69	719606.88	
9600.00	10.30	336.80	9599.45	8.48	-3.63	8.67	10.00	382640.16	719603.25	
9700.00	20.30	336.80	9695.78	32.70	-14.01	33.43	10.00	382664.38	719592.87	
9800.00	30.30	336.80	9786.08	71.92	-30.83	73.54	10.00	382703.60	719576.05	
9900.00	40.30	336.80	9867.59	124.96	-53.56	127.77	10.00	382756.64	719553.32	
10000.00	50.30	336.80	9937.85	190.21	-81.52	194.48	10.00	382821.89	719525.36	
10100.00	60.30	336.80	9994.71	265.67	-113.87	271.65	10.00	382897.35	719493.01	
10200.00	70.30	336.80	10036.45	349.07	-149.61	356.92	10.00	382980.75	719457.27	
10300.00	80.30	336.80	10061.80	437.86	-187.67	447.71	10.00	383069.54	719419.21	
10397.04	90.00	336.80	10070.00	526.63	-225.71	538.47	10.00	383158.31	719381.17	LP
10400.00	90.00	337.10	10070.00	529.35	-226.87	541.26	10.00	383161.03	719380.01	
10500.00	90.00	347.10	10070.00	624.39	-257.57	637.87	10.00	383256.07	719349.31	
10600.00	90.00	357.10	10070.00	723.31	-271.31	737.41	10.00	383354.99	719335.57	
10629.08	90.00	0.00	10070.00	752.38	-272.04	766.47	10.00	383384.06	719334.84	Hold
10700.00	90.00	0.00	10070.00	823.30	-272.04	837.28	0.00	383454.98	719334.84	
10800.00	90.00	0.00	10070.00	923.30	-272.03	937.12	0.00	383554.98	719334.85	
10900.00	90.00	0.00	10070.00	1023.30	-272.02	1036.96	0.00	383654.98	719334.86	
11000.00	90.00	0.00	10070.00	1123.30	-272.02	1136.80	0.00	383754.98	719334.86	
11100.00	90.00	0.00	10070.00	1223.30	-272.01	1236.65	0.00	383854.98	719334.87	
11200.00	90.00	0.00	10070.00	1323.30	-272.00	1336.49	0.00	383954.98	719334.88	

Weatherford
Wft Plan Report X Y's.

Company:	Devon Energy	Date: 11/12/2013 Time: 14:03:45	Page: 2
Field:	Eddy Co., NM (NAD 83)	Co-ordinate(NE) Reference:	Well: Snapping 10 Federal 5H, Grid North
Site:	Snapping 10 Federal 5H	Vertical (TVD) Reference:	SITE 3230.0
Well:	Snapping 10 Federal 5H	Section (VS) Reference:	Well (0.00N,0.00E,356.78Azi)
Wellpath:	1	Survey Calculation Method:	Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
11300.00	90.00	0.00	10070.00	1423.30	-272.00	1436.33	0.00	384054.98	719334.88	
11400.00	90.00	0.00	10070.00	1523.30	-271.99	1536.17	0.00	384154.98	719334.89	
11500.00	90.00	0.00	10070.00	1623.30	-271.98	1636.01	0.00	384254.98	719334.90	
11600.00	90.00	0.00	10070.00	1723.30	-271.97	1735.85	0.00	384354.98	719334.91	
11700.00	90.00	0.00	10070.00	1823.30	-271.97	1835.70	0.00	384454.98	719334.91	
11800.00	90.00	0.00	10070.00	1923.30	-271.96	1935.54	0.00	384554.98	719334.92	
11900.00	90.00	0.00	10070.00	2023.30	-271.95	2035.38	0.00	384654.98	719334.93	
12000.00	90.00	0.00	10070.00	2123.30	-271.95	2135.22	0.00	384754.98	719334.93	
12100.00	90.00	0.00	10070.00	2223.30	-271.94	2235.06	0.00	384854.98	719334.94	
12200.00	90.00	0.00	10070.00	2323.30	-271.93	2334.90	0.00	384954.98	719334.95	
12300.00	90.00	0.00	10070.00	2423.30	-271.92	2434.75	0.00	385054.98	719334.96	
12400.00	90.00	0.00	10070.00	2523.30	-271.92	2534.59	0.00	385154.98	719334.96	
12500.00	90.00	0.00	10070.00	2623.30	-271.91	2634.43	0.00	385254.98	719334.97	
12600.00	90.00	0.00	10070.00	2723.30	-271.90	2734.27	0.00	385354.98	719334.98	
12700.00	90.00	0.00	10070.00	2823.30	-271.89	2834.11	0.00	385454.98	719334.99	
12800.00	90.00	0.00	10070.00	2923.30	-271.89	2933.95	0.00	385554.98	719334.99	
12900.00	90.00	0.00	10070.00	3023.30	-271.88	3033.80	0.00	385654.98	719335.00	
13000.00	90.00	0.00	10070.00	3123.30	-271.87	3133.64	0.00	385754.98	719335.01	
13100.00	90.00	0.00	10070.00	3223.30	-271.87	3233.48	0.00	385854.98	719335.01	
13200.00	90.00	0.00	10070.00	3323.30	-271.86	3333.32	0.00	385954.98	719335.02	
13300.00	90.00	0.00	10070.00	3423.30	-271.85	3433.16	0.00	386054.98	719335.03	
13400.00	90.00	0.00	10070.00	3523.30	-271.84	3533.00	0.00	386154.98	719335.04	
13500.00	90.00	0.00	10070.00	3623.30	-271.84	3632.85	0.00	386254.98	719335.04	
13600.00	90.00	0.00	10070.00	3723.30	-271.83	3732.69	0.00	386354.98	719335.05	
13700.00	90.00	0.00	10070.00	3823.30	-271.82	3832.53	0.00	386454.98	719335.06	
13800.00	90.00	0.00	10070.00	3923.30	-271.82	3932.37	0.00	386554.98	719335.06	
13900.00	90.00	0.00	10070.00	4023.30	-271.81	4032.21	0.00	386654.98	719335.07	
14000.00	90.00	0.00	10070.00	4123.30	-271.80	4132.06	0.00	386754.98	719335.08	
14100.00	90.00	0.00	10070.00	4223.30	-271.79	4231.90	0.00	386854.98	719335.09	
14200.00	90.00	0.00	10070.00	4323.30	-271.79	4331.74	0.00	386954.98	719335.09	
14300.00	90.00	0.00	10070.00	4423.30	-271.78	4431.58	0.00	387054.98	719335.10	
14400.00	90.00	0.00	10070.00	4523.30	-271.77	4531.42	0.00	387154.98	719335.11	
14500.00	90.00	0.00	10070.00	4623.30	-271.76	4631.26	0.00	387254.98	719335.12	
14600.00	90.00	0.00	10070.00	4723.30	-271.76	4731.11	0.00	387354.98	719335.12	
14700.00	90.00	0.00	10070.00	4823.30	-271.75	4830.95	0.00	387454.98	719335.13	
14703.87	90.00	0.00	10070.00	4827.17	-271.75	4834.81	0.00	387458.85	719335.13	PBHL

Targets

Name	Description Dip:	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude ---> Deg	Min	Sec	<--- Longitude ---> Deg	Min	Sec
Exist Ross Ranc 10 Fed 1 -Circle (Radius: 50)			0.00	3175.52	-525.95	385807.20	719080.93	32	3	33.707 N	103	45	34.503 W
PBHL -Rectangle (4175x50)			10070.00	4827.17	-271.75	387458.85	719335.13	32	3	50.038 N	103	45	31.447 W

Weatherford
Wft Plan Report X Y's.

Company:	Devon Energy	Date: 11/12/2013 Time: 14:03:45	Page: 3
Field:	Eddy Co., NM (NAD 83)	Co-ordinate(NE) Reference:	Well: Snapping 10 Federal 5H, Grid North
Site:	Snapping 10 Federal 5H	Vertical (TVD) Reference:	SITE 3230.0
Well:	Snapping 10 Federal 5H	Section (VS) Reference:	Well (0.00N,0.00E,356.78Azi)
Wellpath:	1	Survey Calculation Method:	Minimum Curvature Db: Sybase

Casing Points

MD	TVD	Diameter	Hole Size	Name

Formations

MD	TVD	Formations	Lithology	Dip Angle	Dip Direction

Annotation

MD ft	TVD ft	
9497.04	9497.04	KOP
10397.04	10070.00	LP
10629.08	10070.00	Hold
14703.87	10070.00	PBHL

Weatherford

Weatherford Drilling Services

GeoDec v5.03

Report Date:	May 10, 2013
Job Number:	
Customer:	Devon
Well Name:	Snapping 10 Federal 5H
API Number:	
Rig Name:	
Location:	Eddy Co., NM
Block:	
Engineer:	RWJ

US State Plane 1983	Geodetic Latitude / Longitude
System: New Mexico Eastern Zone	System: Latitude / Longitude
Projection: Transverse Mercator/Gauss Kruger	Projection: Geodetic Latitude and Longitude
Datum: North American Datum 1983	Datum: North American Datum 1983
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
North/South 382631.680 USFT	Latitude 32.0506285 DEG
East/West 719606.880 USFT	Longitude -103.7579365 DEG
Grid Convergence: .31°	
Total Correction: +7.17°	

Geodetic Location WGS84	Elevation =	0.0 Meters
Latitude =	32.05063° N	32° 3 min 2.263 sec
Longitude =	103.75794° W	103° 45 min 28.572 sec

Magnetic Declination =	7.48°	[True North Offset]	
Local Gravity =	.9988 g	CheckSum =	6774
Local Field Strength =	48268 nT	Magnetic Vector X =	23985 nT
Magnetic Dip =	59.92°	Magnetic Vector Y =	3150 nT
Magnetic Model =	bggm2013	Magnetic Vector Z =	41768 nT
Spud Date =	Oct 15, 2013	Magnetic Vector H =	24191 nT

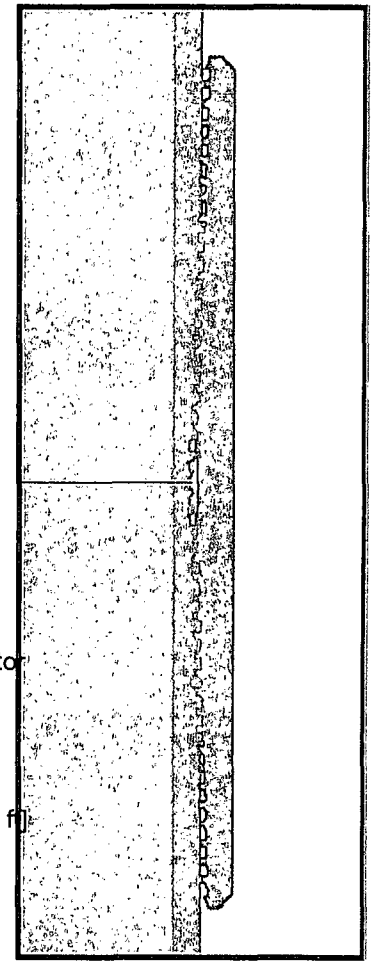
Signed:_____ Date:_____

Technical Specifications

Connection Type:	Size(O.D.):	Weight (Wall):	Grade:
DWC/C Casing	5-1/2 in	17.00 lb/ft (0.304 in)	P110RY
standard			

Material	
P110RY	Grade
110,000	Minimum Yield Strength (psi)
125,000	Minimum Ultimate Strength (psi)
	Pipe Dimensions
5.500	Nominal Pipe Body O.D. (in)
4.892	Nominal Pipe Body I.D.(in)
0.304	Nominal Wall Thickness (in)
17.00	Nominal Weight (lbs/ft)
16.89	Plain End Weight (lbs/ft)
4.962	Nominal Pipe Body Area (sq in)
	Pipe Body Performance Properties
546,000	Minimum Pipe Body Yield Strength (lbs)
7,480	Minimum Collapse Pressure (psi)
10,640	Minimum Internal Yield Pressure (psi)
9,700	Hydrostatic Test Pressure (psi)
	Connection Dimensions
6.050	Connection O.D. (in)
4.892	Connection I.D. (in)
4.767	Connection Drift Diameter (in)
4.13	Make-up Loss (in)
4.962	Critical Area (sq in)
100.0	Joint Efficiency (%)
	Connection Performance Properties
546,000	Joint Strength (lbs)
22,940	Reference String Length (ft) 1.4 Design Factor
568,000	API Joint Strength (lbs)
546,000	Compression Rating (lbs)
7,480	API Collapse Pressure Rating (psi)
10,640	API Internal Pressure Resistance (psi)
91.7	Maximum Uniaxial Bend Rating [degrees/100 ft]
	Appoximated Field End Torque Values
12,000	Minimum Final Torque (ft-lbs)
13,800	Maximum Final Torque (ft-lbs)
15,500	Connection Yield Torque (ft-lbs)

VAM-USA
4424 W. Sam Houston Pkwy. Suite 150
Houston, TX 77041
Phone: 713-479-3200
Fax: 713-479-3234
E-mail: VAMUSAsales@na.vallourec.com



For detailed information on performance properties, refer to DWC Connection Data Notes on following page(s).

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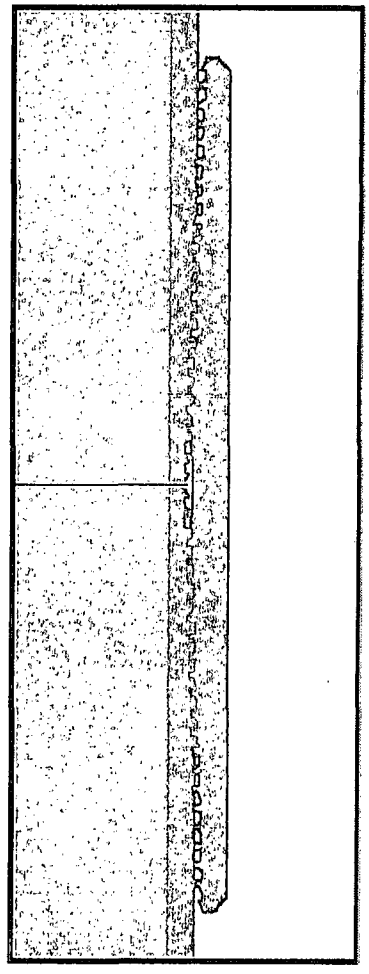
DWC Connection Data Notes:

1. DWC connections are available with a seal ring (SR) option.
2. All standard DWC/C connections are interchangeable for a give pipe OD. DWC connections are interchangeable with DWC/C-SR connections of the same OD and wall.
3. Connection performance properties are based on nominal pipe body and connection dimensions.
4. DWC connection internal and external pressure resistance is calculated using the API rating for buttress connections. API Internal pressure resistance is calculated from formulas 31, 32, and 35 in the API Bulletin 5C3.
5. DWC joint strength is the minimum pipe body yield strength multiplied by the connection critical area.
6. API joint strength is for reference only. It is calculated from formulas 42 and 43 in the API Bulletin 5C3.
7. Bending efficiency is equal to the compression efficiency.
8. The torque values listed are recommended. The actual torque required may be affected by field conditions such as temperature, thread compound, speed of make-up, weather conditions, etc.
9. Connection yield torque is not to be exceeded.
10. Reference string length is calculated by dividing the joint strength by both the nominal weight in air and a design factor (DF) of 1.4. These values are offered for reference only and do not include load factors such as bending, buoyancy, temperature, load dynamics, etc.
11. DWC connections will accommodate API standard drift diameters.



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PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	DEVON ENERGY PRODUCTION CO.
LEASE NO.:	NM89057
WELL NAME & NO.:	5H-SNAPPING 10 FEDERAL
SURFACE HOLE FOOTAGE:	175'/S. & 160'/E.
BOTTOM HOLE FOOTAGE	330'/N. & 400'/E.
LOCATION:	Section 10, T. 26 S., R. 31 E., NMPM
COUNTY:	Eddy County, New Mexico

The original COAs still stand with the following drilling modifications:

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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

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

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

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. See individual casing strings for details regarding lead cement slurry requirements.

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

Production Cement Option #1:

☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Additional cement may be required – excess calculates to 18%.**

Production Cement Option #2:

Operator has proposed DV tool at depth of 6500'. Operator is to submit sundry if DV tool depth varies by more than 100' from approved depth.

a. First stage to DV tool:

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

b. Second stage above DV tool:

☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Additional cement may be required – excess calculates to 24%.**

JAM 112713