

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-102

State of New Mexico

Energy, Minerals & Natural Resources Department

AUG 28 2015

Revised August 1, 2011

OIL CONSERVATION DIVISION

Submit one copy to appropriate

1220 South St. Francis Dr.

District Office

Santa Fe, NM 87505

RECEIVED

AMENDED REPORT

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

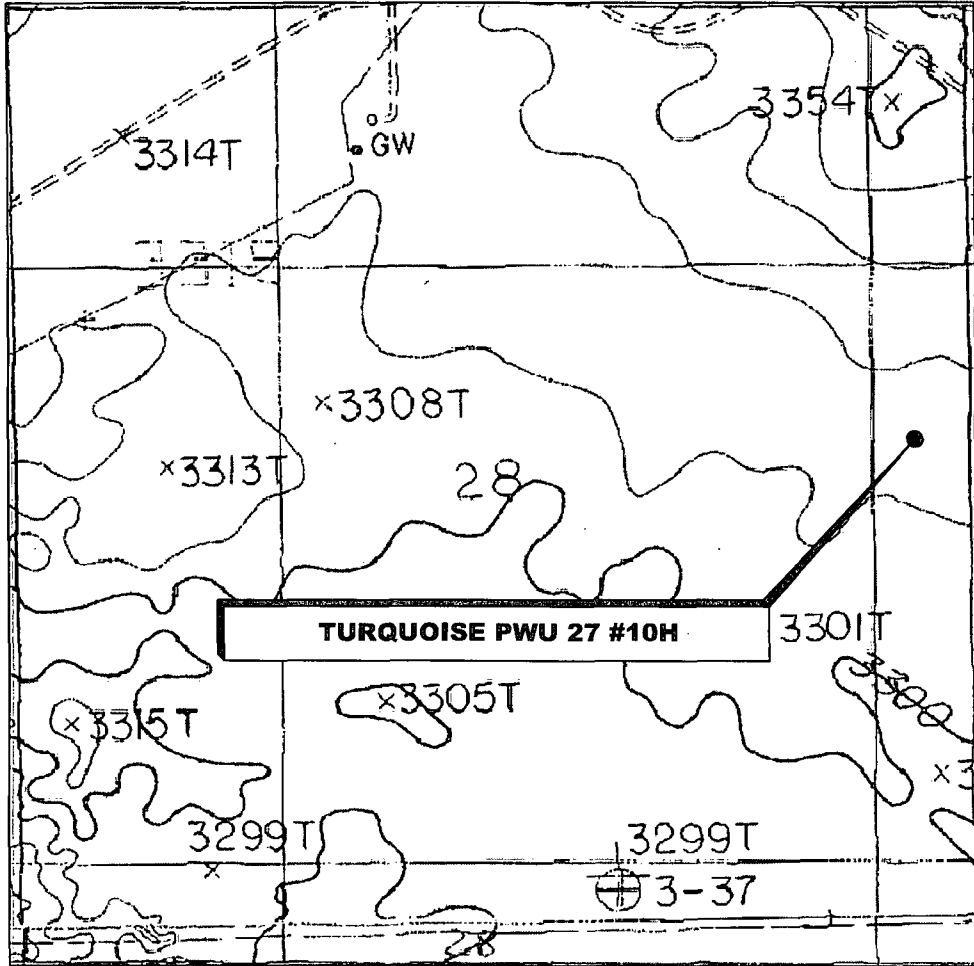
WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-015-43321		2 Pool Code 49622		3 Pool Name Parkway; Bone Spring					
4 Property Code 38434		5 Property Name TURQUOISE PWU 27						6 Well Number 10H	
7 GRID NO. 6137		8 Operator Name DEVON ENERGY PRODUCTION CO., L.P.						9 Elevation 3320'	
10 Surface Location									
UL or lot no. H	Section 28	Township 19S	Range 29E	Lot Idn	Feet from the 2382	North/South line NORTH	Feet From the 274	East/West line EAST	County EDDY
11 Bottom Hole Location If Different From Surface									
UL or lot no. H	Section 27	Township 19S	Range 29E	Lot Idn	Feet from the 2310	North/South line NORTH	Feet from the 270	East/West line EAST	County EDDY
12 Dedicated Acres 160.00		13 Joint or Infill		14 Consolidation Code		15 Order No.			

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

				<p>17 OPERATOR CERTIFICATION</p> <p>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.</p> <p>Signature: <i>Megan Moravec</i> Date: 8/27/2015 Megan Moravec, Regulatory Analyst Printed Name: Megan.Moravec@dvn.com E-mail Address:</p>			
<p>GEODETTIC DATA</p> <p>NAD 83 GRID - NM EAST</p> <p>SURFACE LOCATION N 593930.0 - E 621732.6 LAT: 32.63249121" N LONG: 104.07217593" W</p> <p>BOTTOM LOCATION N 593979.9 - E 627019.3 LAT: 32.63259171" N LONG: 104.05500222" W</p>		<p>CORNER DATA</p> <p>NAD 83 GRID - NM EAST</p> <p>A: FOUND LIMESTONE ROCK 12"X6"X6" N 591028.1 - E 616739.0 B: FOUND LIMESTONE ROCK 14"X4"X3" N 593669.6 - E 616739.5 C: FOUND RAILROAD SPIKE N 596311.3 - E 616734.9 D: FOUND 100D NAIL N 596305.2 - E 619374.0 E: FOUND 1/2" REBAR N 596312.1 - E 622012.7 F: FOUND LIMESTONE ROCK 12"X6"X5" N 596283.3 - E 624645.2</p>		<p>Project Area</p> <p>G: FOUND 5/8" REBAR N 596290.1 - E 627280.8 H: FOUND LIMESTONE ROCK 12"X3"X7" N 593650.3 - E 627290.5 I: FOUND LIMESTONE ROCK 12"X6"X6" N 591005.2 - E 627296.1 J: FOUND LIMESTONE ROCK 12"X6"X3" N 591014.1 - E 622006.7 K: FOUND 60D NAIL N 593660.5 - E 622005.9</p>		<p>18 SURVEYOR CERTIFICATION</p> <p>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>7-23-2015 Date of Survey Signature and Seal of Professional Surveyor 20451 Certificate Number</p>	

LOCATION VERIFICATION MAP



**SECTION 28, TWP. 19 SOUTH, RGE. 29 EAST,
N. M. P. M., EDDY CO., NEW MEXICO**

OPERATOR: Devon Energy Production
Company, L. P.

LOCATION: 2382' FNL & 274' FEL.
CONTOUR INTERVAL: 10'

LEASE: Turquoise PWU 27

USGS TOPO: SOURCE MAP:

WELL NO.: 10H

Ironhouse Well, NM (P. E. 1984)

ELEVATION: 3320'

Firm No.: TX 10193838 NM 4655451

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NO.	REVISION	DATE
JOB NO.: LS1507385		
DWG. NO.: 1507385LVM		

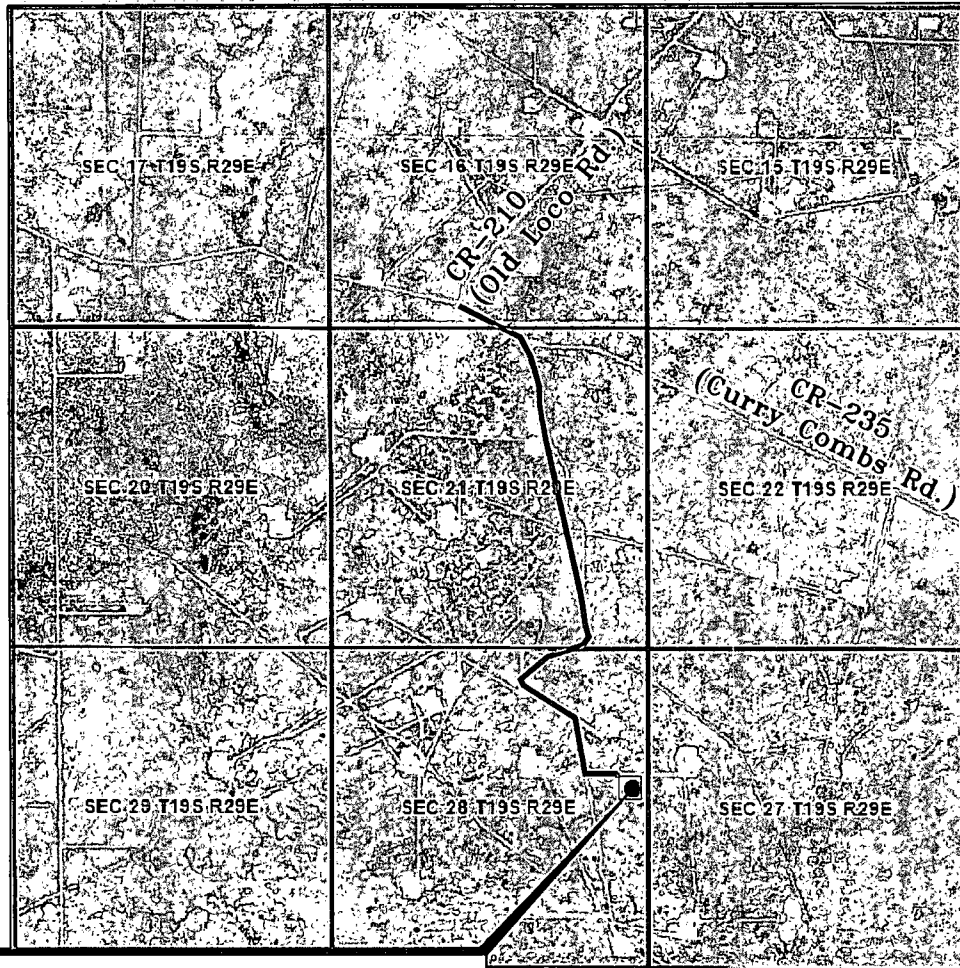
RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1"=1000'
DATE: 7-29-2015
SURVEYED BY: BC/CG
DRAWN BY: PDJ
APPROVED BY: REB
SHEET : 1 OF 5

VICINITY MAP

NOT TO SCALE



TURQUOISE PWU 27 #10H

*SECTION 28, TWP. 19 SOUTH, RGE. 29 EAST,
N. M. P. M., EDDY CO., NEW MEXICO*

OPERATOR: Devon Energy Production
Company, L. P.

LOCATION: 2382' FNL & 274' FEL
ELEVATION: 3320'

LEASE: Turquoise PWU 27
WELL NO.: 10H

Firm No.: TX 10193838 NM 4655451

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NO.	REVISION	DATE
JOB NO.: LS1507385		
DWG. NO.: 1507385VM		

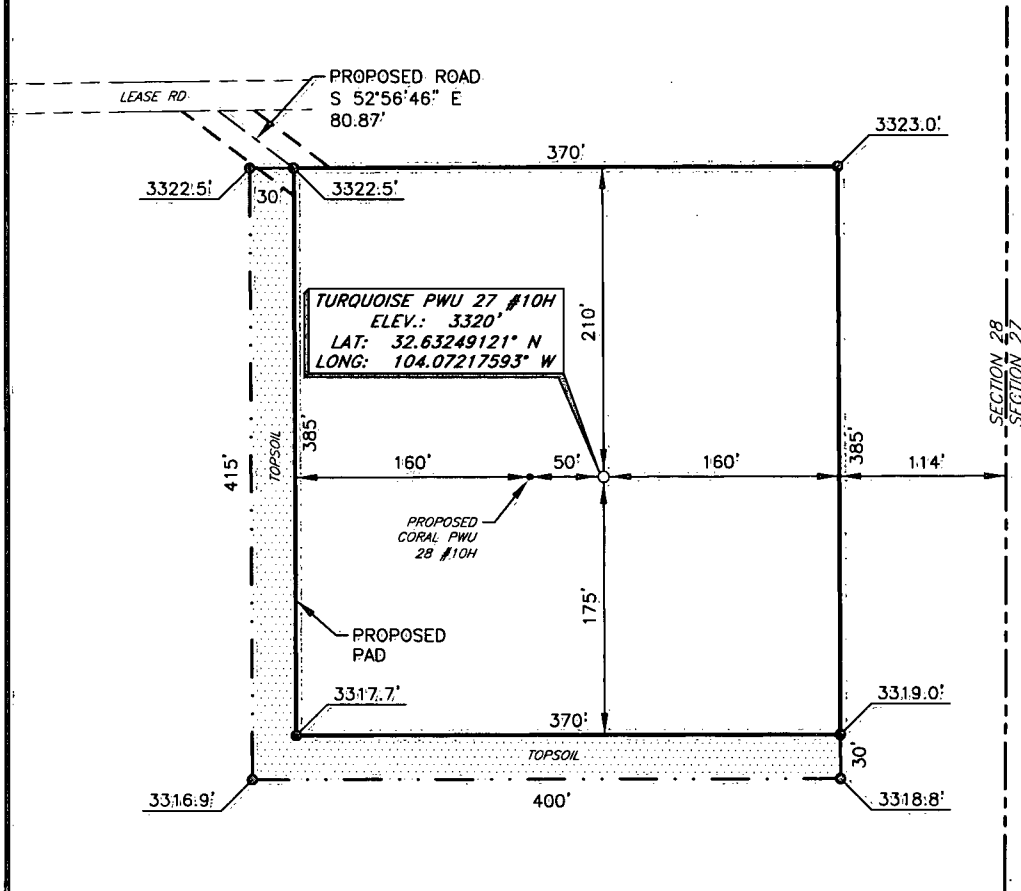
RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: NTS
DATE: 7-29-2015
SURVEYED BY: BC/CG
DRAWN BY: RMH
APPROVED BY: REB
SHEET : 2 OF 5

DEVON ENERGY PRODUCTION CO., LP.

TURQUOISE PWU 27 #10H
 (2382' FNL & 274' FEL)
 SECTION 28; T19S, R29E,
 N. M. P. M., EDDY COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

From the intersection of CR-235 (Curry Combs Rd.) and CR-210 (Old Loco Rd.)
 Go Southeast on CR-235 approx. 0.2 miles to a lease road on the right;
 Turn right and go South approx. 1.0 miles to a lease road on the right;
 Turn right and go West staying left at a "Y" approx. 0.3 miles to a lease road on the left;
 Turn left and go South approx. 0.4 miles to a lease road on the left;
 Turn left and go East approx. 0.1 miles to a proposed road on the right;
 Turn right and go Southeast approx. 291 feet.
 Location is on the left.

SCALE: 1" = 100'
 0 50 100
 BEARINGS ARE
 NAD 27 GRID - NM: EAST
 DISTANCES ARE GROUND

Firm No.: TX 10193838 NM 4655451

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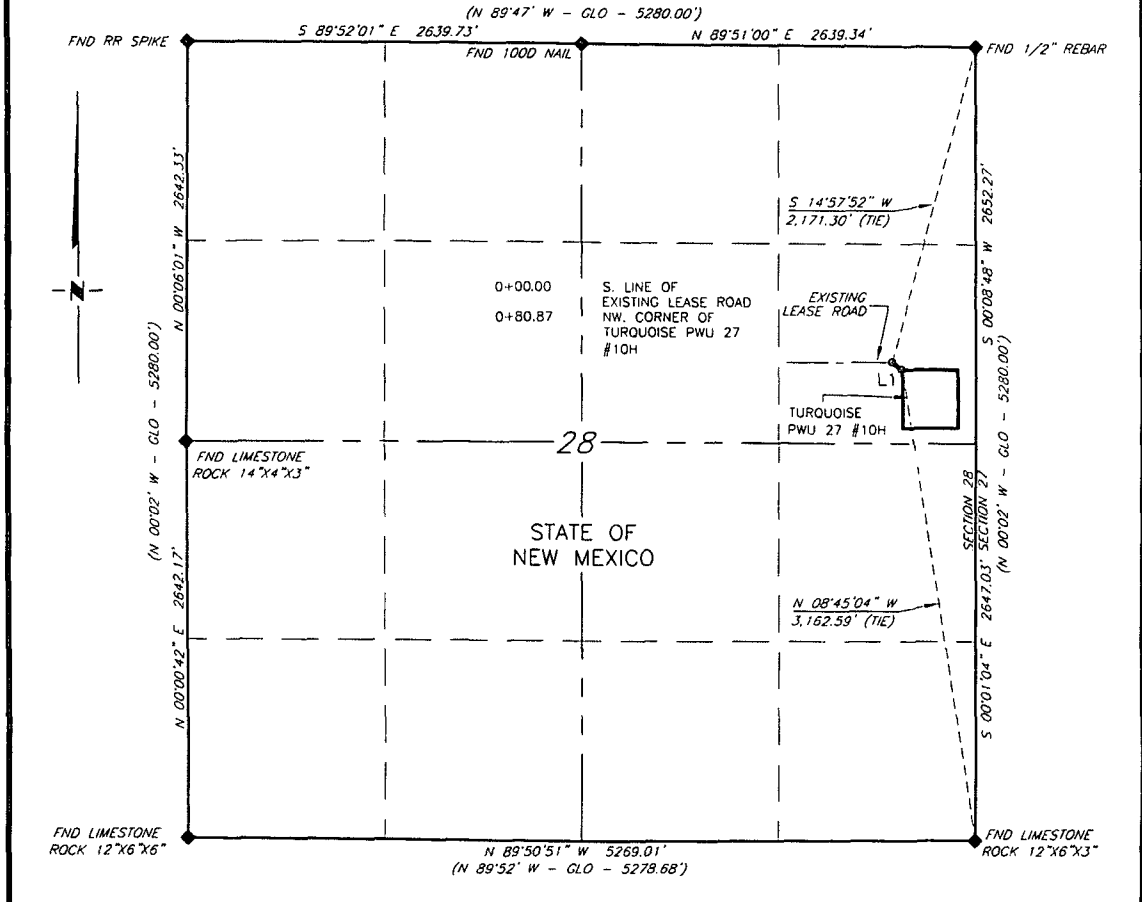
NO.	REVISION	DATE
JOB NO.: LS1507385		
DWG. NO.: 1507385PAD		



308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 100'
DATE: 7-29-2015
SURVEYED BY: BC/CG
DRAWN BY: CMJ
APPROVED BY: REB
SHEET: 3 OF 5

DEVON ENERGY PRODUCTION COMPANY, L. P.
PROPOSED ROAD
FROM AN EXISTING LEASE ROAD
TO TURQUOISE PWU #10H
SECTION 28, T19S, R29E, NMPM,
EDDY CO., NEW MEXICO



LINE TABLE		
LINE	BEARING	LENGTH
L1	S 52°56'46\" E	80.87'

SCALE: 1" = 1000'
 0 500' 1000'

BEARINGS ARE NAD 83
 NM EAST & DISTANCES ARE
 HORIZ. GROUND.

- LEGEND**
- () RECORD DATA - GLO
 - ◆ FOUND MONUMENT AS NOTED
 - PROPOSED EASEMENT

I, Richard E Brooks, a New Mexico Professional Surveyor, do hereby certify that the plat shown hereon accurately depicts the conditions on the ground at the time of the survey; that all work was done under my direct supervision and meets the State of New Mexico minimum standards for land surveying to the best of my knowledge.

Richard E Brooks
 Richard E Brooks NM PS 20451



Firm No.: TX 10193838 NM 4655451

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NO.	REVISION	DATE
JOB NO.: LS1507385		
DWG. NO.: 1507385RD1		



308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 1000'
DATE: 7-29-15
SURVEYED BY: BC/CG
DRAWN BY: PDJ
APPROVED BY: REB
SHEET : 4 OF 5

DEVON ENERGY PRODUCTION CO., L.P.
PROPOSED LEASE ROAD
FROM AN EXISTING LEASE ROAD
TO THE TURQUOISE PWU 27 #10H
SECTIONS 28, T19S, R29E, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

DESCRIPTION:

A strip of land 30 feet in width, being 80.87 feet or 4.962 rods in length lying within the Northeast Quarter of Section 28, Township 19 South, Range 29 East, N.M.P.M., Eddy County, State of New Mexico, being 15 feet on each side of the centerline described herein; with the sidelines being shortened or extended to intersect the South Line of an existing lease road and North and West Lines of the Turquoise PWU 27 #10H, across State of New Mexico land and being more particularly described as follows:

Beginning, at a point on the South Line of an existing lease road which bears S 14°57'52" W, a distance of 2,171.30 feet from the Northeast Corner of Section 28, a 1/2" Rebar;

Thence S 52°56'46" E, a distance of 80.87 feet to the intersect with the North and West Lines of Turquoise PWU 27 #10H and the Point of Terminus which bears N 08°45'04" W; a distance of 3,162.59 feet from the Southeast Corner of Section 28, a Limestone Rock 12"x6"x3".

Said strip of land contains 0.066 acres, more or less, and is allocated by Quarter-Quarter (forties) as follows:

SE 1/4 NE 1/4 4.962 Rods 0.066 Acres+-

Firm No.: TX 10193838 NM 4555451

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NO.	REVISION	DATE
JOB NO.: LS1507385		
DWG. NO.: 1507385LEG		



308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: NA
DATE: 7-29-2015
SURVEYED BY: BC/CG
DRAWN BY: PDJ.
APPROVED BY: REB
SHEET : 5 OF 5

Devon Energy, Turquoise PWU 27 10H

1. Geologic Formations

TVD of target	9,170'	Pilot hole depth	N/A
MD at TD:	14,131'	Deepest expected fresh water:	60'

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
RUSTLER	0	Water	
TOP SALT	330	Barren	
BASE SALT	1215	Barren	
TANSILL	1295	Barren	
YATES	1420	Oil	
SEVEN RIVERS	1700	Oil	
DELAWARE	3375	Oil	
LOWER BRUSHY	5060	Oil	
1ST BONE LIME	5225	Oil	
1ST BONE SAND	6965	Oil	
2ND BONE LIME	7150	Oil	
2ND BONE SAND	7800	Oil	
3RD BONE LIME	8075	Oil	
3RD BONE SAND	8685	Oil	
WOLFCAMP	9220	Oil	

*H2S, water flows, loss of circulation, abnormal pressures, etc.

Devon Energy, Turquoise PWU 27 10H

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	300'	13.375"	48	H-40	STC	5.74	12.90	22.36
12.25"	0'	3,350'	9.625"	40	J-55	LTC	1.34	2.06	3.88
8.75"	0'	14,131'	5.5"	17	L-80	BTC	1.32	1.62	1.65
KOP = 8,523' DV Tool = 1,250' DV Tool = 3,400'			BLM Minimum Safety Factor				1.125	1.00	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Devon Energy, Turquoise PWU 27 10H

3. Cementing Program

Casing	# Sks	Wt. lb/gal	H ₂ O gal/sk	Yld ft ³ /sack	500# Comp. Strength (hours)	Slurry Description
13-3/8" Surface	340	14.8	6.43	1.34	6	Primary: Class C Cement + 1% Calcium Chloride
9-5/8" Inter.	780	12.9	10.06	1.87	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	265	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
9-5/8" Inter. Two Stage	780	12.9	10.06	1.87	14	1 st Stage Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	265	14.8	6.32	1.33	6	1 st Stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
	DV Tool = 1250ft					
	195	12.9	10.06	1.87	14	2 nd Stage Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	205	14.8	6.43	1.34	6	2 nd Stage Tail: Class C Cement + 1% Calcium Chloride
5-1/2" Prod Two Stage	705	11.9	13.27	2.30	n/a	1 st Stage Lead: (50:50) Class H Cement: Poz (Fly Ash) + 10% BWOC Bentonite + 1 lb/sk of Kol-Seal + 0.6% BWOC HR-601 + 0.5lb/sk D-Air 5000
	1460	14.5	5.58	1.22	25	1 st Stage Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.25% bwoc CFR-3 + 2% bwoc Bentonite
	DV Tool = 3400ft					
	50	11	14.81	2.55	22	2 nd Stage Lead: Tuned Light [®] Cement + 0.125 lb/sk Pol-E-Flake
	25	14.8	6.32	1.33	6	2 nd Stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
5-1/2" Prod Single Stage	495	11.9	13.27	2.30	n/a	1 st Lead: (50:50) Class H Cement: Poz (Fly Ash) + 10% BWOC Bentonite + 1 lb/sk of Kol-Seal + 0.6% BWOC HR-601 + 0.5lb/sk D-Air 5000
	320	12.5	11.08	1.98	30	2 nd Lead: (65:35) Class H Cement: Poz (Fly Ash) + 6% BWOC Bentonite + 0.4% BWOC HR-601 + 0.125 lbs/sack Poly-E-Flake + 0.25 lb/sk D-Air 5000
	1460	14.5	5.58	1.22	25	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.25% bwoc CFR-3 + 2% bwoc Bentonite

Devon Energy, Turquoise PWU 27 10H

DV tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
13-3/8" Surface	0'	100%
9-5/8" Intermediate	0'	75%
9-5/8" Intermediate Two Stage Option	1 st Stage = 0ft / 2 nd Stage = 0'	75%
5-1/2" Production Casing Two Stage Option	1 st Stage = 3400ft / 2 nd Stage = 2850'	25%
5-1/2" Production Casing Single Stage Option	2850'	25%

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
---	--

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12-1/4"	13-5/8"	3M	Annular	x	50% of working pressure 3M
			Blind Ram		
			Pipe Ram		
			Double Ram	x	
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% testing pressure 3M
			Blind Ram		
			Pipe Ram		
			Double Ram	x	
			Other*		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		

*Specify if additional ram is utilized.

Devon Energy, Turquoise PWU 27 10H

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	<p>Formation integrity test will be performed per Onshore Order #2.</p> <p>On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.</p>
Y	<p>A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.</p>
Y	<p>Are anchors required by manufacturer?</p>
Y	<p>A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.</p> <p>Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. 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.</p> <ul style="list-style-type: none"> • Wellhead will be installed by vendor's representatives. • If the welding is performed by a third party, vendors's representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. • Vendor representative will install the test plug for the initial BOP test. • Vendor will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. • If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. • Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. • Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2. <p>After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system and will undergo a 250 psi low</p>

Devon Energy, Turquoise PWU 27 10H

	<p>pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2.</p> <p>After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the wellhead.</p> <p>The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.</p> <p>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.</p> <p>See attached schematic.</p>
Y	<p>During the course of conducting offset research, should it be determined that the 12-1/4" section will suffer from losses while drilling, a variance is requested to replace the multibowl wellhead system with a conventional wellhead assembly (e.g. conventional casing slips).</p>

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	300'	FW	8.3-8.8	28-34	N/C
300'	3,350'	Saturated Brine	10.0-10.2	28-34	N/C
3,350'	14,131'	Cut Brine	8.5-9.3	28-34	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Totco/Visual Monitoring
---	-----------------------------

6. Logging and Testing Procedures

Logging, Coring and Testing.	
x	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Devon Energy, Turquoise PWU 27 10H

Additional logs planned		Interval
	Resistivity	Int. shoe to KOP
	Density	Int. shoe to KOP
X	CBL	Production casing
X	Mud log	Intermediate shoe to TD
	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4434 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H₂S) monitors will be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

N	H ₂ S is present
Y	H ₂ S Plan attached

8. Other facets of operation

Is this a walking operation? No.

Will be pre-setting casing? No.

Attachments

Directional Plan

Other, describe



Turquoise PWU 27 10H
Eddy Co, NM



Plan Data for Turquoise PWU 27 #10H

Plan Point Information:
DogLeg Severity Unit: °/100.00ft Position offsets from Slot centre

MD (USft)	Inc (°)	Az (°)	TVD (USft)	+N/-S (USft)	+E/-W (USft)	Northing (USft)	Easting (USft)	VSec (USft)	DLS (DLSU)
0.00	0.00	0.00	-0.00	-0.00	-0.00	593930.00	621732.60	0.00	0.00
8523.00	0.00	0.00	8523.00	-0.00	-0.00	593930.00	621732.60	0.00	0.00
9123.00	60.00	75.15	9019.20	73.42	276.91	594003.42	622009.51	276.60	10.00
9450.03	89.38	90.24	9105.05	110.03	585.73	594040.03	622318.33	585.26	10.00
12238.82	89.38	90.24	9135.00	98.28	3374.33	594028.28	625106.93	3373.89	0.00
12243.27	88.94	90.24	9135.07	98.26	3378.78	594028.26	625111.38	3378.34	10.00
14131.09	88.94	90.24	9170.00	90.38	5266.25	594020.38	626998.85	5265.83	0.00

Plan Data for Turquoise PWU 27 #10H

Target Set Information:
Name: Turquoise PWU 27 #10H
Position offsets from Slot centre

Name	TVD (USft)	+N/-S (USft)	+E/-W (USft)	Northing (USft)	Easting (USft)	Shape	Comment
LP Target	9105.00	109.86	604.35	594039.86	622336.95	Cuboid	
Midpoint	9135.00	98.28	3374.33	594028.28	625106.93	Cuboid	
PBHL 10H	9170.00	90.38	5266.25	594020.38	626998.85	Cuboid	

Plan Data for Turquoise PWU 27 #10H

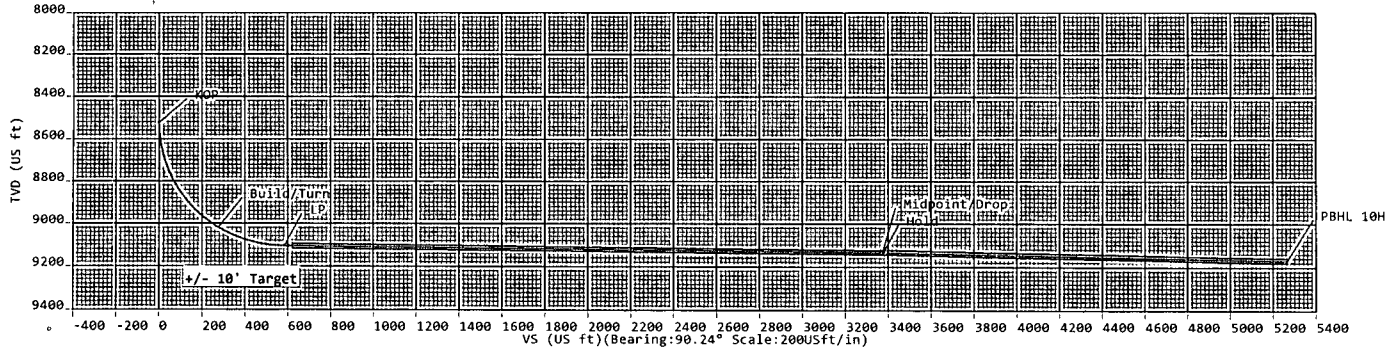
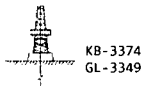
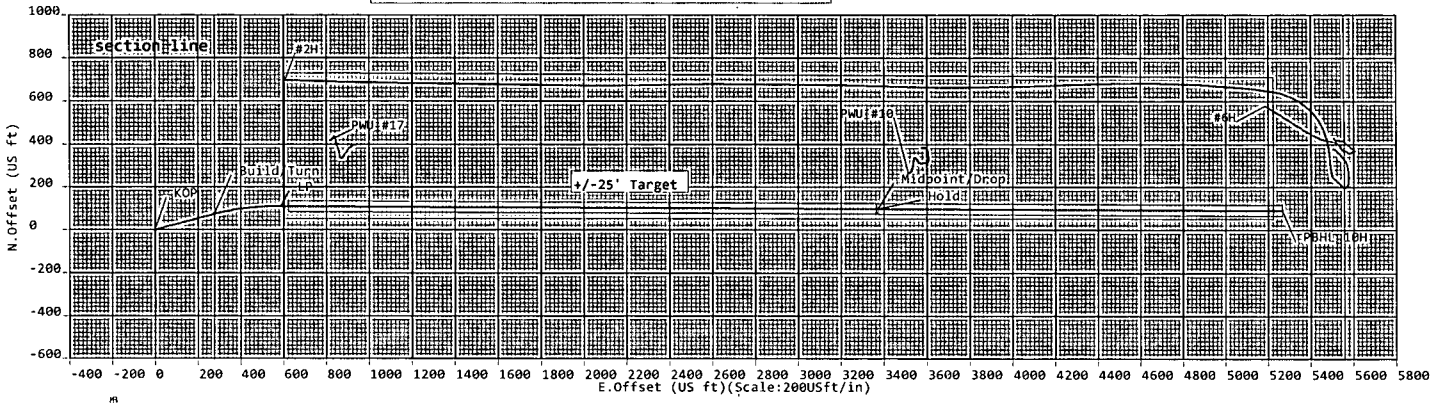
Well: Turquoise PWU 27 #10H
Type: Main-Well
File Number:

Plan Folder: P1 Plan: P1.V1
Vertical Section: Position offset of origin from Slot centre:
+N/-S: -0.00USft Azimuth: 90.24°
+E/-W: -0.00USft
Magnetic Parameters:
Model: Field Strength: Declination: Dip: Date:
BGM 48395(NT) 7.51° 60.41° 2015-10-30

Plan Data for Turquoise PWU 27 #10H

Slot: Turquoise PWU 27 10H
Position:
Offset is from Site centre

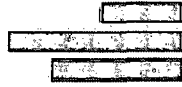
+N/-S: 0.00USft Northing: 593930.00USft Latitude: 32°37'57.0"
+E/-W: 0.00USft Easting: 621732.60USft Longitude: -104°4'19.8"
Elevation Above VRD: 3320.00USft



AUG 28 2015

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5D Plan Report



devon



Devon Energy

Field Name: *Eddy Co, NM (Nad 83 NME)*
Site Name: *Turquoise PWU 27 10H*
Well Name: *Turquoise PWU 27 #10H*
Plan: *P1:V1*



24 August 2015



Weatherford®



Turquoise PWU 27 #10H

Field Name:
Eddy Co, NM
(Nad 83 NME)

Map Units: US ft **Company Name:** Devon Energy
Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: NAD83 / New Mexico East (ftUS)
Comment:

Site:
Turquoise PWU
27 #10H

Units: US ft **North Reference:** Grid **Convergence Angle:** 0.14
Position: **Northing:** 593930.00US ft **Latitude:** 32° 37' 56.97"
 Easting: 621732.60US ft **Longitude:** -104° 4' 19.83"
Elevation above MSL: 3320.00 US ft
Comment:

Slot:
Turquoise PWU
27 #10H

Position (Relative to Site Centre)

+N/-S: 0.00US ft **Northing:** 593930.00US ft **Latitude:** 32°37'56.97"
 +E/-W: 0.00US ft **Easting:** 621732.60US ft **Longitude:** -104°4'19.83"
Slot TVD Reference: Ground Elevation
Elevation above MSL: 3320.00US ft
Comment:

Well:
Turquoise PWU
27 #10H

Type: Main well **UWI:** **Plan:** P1:V1
File Number: **Comment:**
Closure Distance: 5267.03US ft **Closure Azimuth:** 89.02°
Vertical Section: Position of Origin (Relative to Slot centre)
 +N/-S: -0.00US ft +E/-W: -0.00US ft **Az:** 90.24°
Magnetic Parameters:
Model: BGGM **Field Strength:** **Declination:** 7.51° **Dip:** 60.41° **Date:** 30/Oct/2015
 48395.0nT

Drill floor: Plan: P1:V1

Rig Height (Kelly Bushing): Elevation above MSL: **Inclination:** 0.00° **Azimuth:** 0.00°
 25.00us ft 3345.00us ft

Target set: Turquoise PWU 27 #10H Comment:

Target Name:	Shape:	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (USFt)	Easting (USFt)	Comment
LP Target	Cuboid	9105.00	109.86	604.35	594039.86	622336.95	
Midpoint	Cuboid	9135.00	98.28	3374.33	594028.28	625106.93	
PBHL 10H	Cuboid	9170.00	90.38	5266.25	594020.38	626998.85	

Wellpath created using minimum curvature:

5D Plan Report

Well Point:	MD: 0.00USFt	Inclination: 0.00°	Azimuth: 0.00°	TVD: - 0.00USFt	North Offset: - 0.00USFt	East Offset: - 0.00USFt
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Salient Points (Relative to Slot centre) (TVD relative to Kelly Bushing)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (°/100US ft)	B. Rate (°/100US ft)	T. Rate (°/100US ft)	T. Face (°)	Comment
0.00	0.00	0.00	-0.00	-0.00	-0.00	-0.00	0.00	0.00	0.00	0.00	
8523.00	0.00	0.00	8523.00	-0.00	-0.00	-0.00	0.00	0.00	0.00	0.00	KOP
9123.00	60.00	75.15	9019.20	73.42	276.91	276.60	10.00	10.00	0.00	75.15	Build/Turn
9450.03	89.38	90.24	9105.05	110.03	585.73	585.26	10.00	8.99	4.61	28.81	LP
12238.82	89.38	90.24	9135.00	98.28	3374.33	3373.89	0.00	0.00	0.00	0.00	Midpoint/Dr op
12243.27	88.94	90.24	9135.07	98.26	3378.78	3378.34	10.00	-10.00	-0.04	180.25	Hold
14131.09	88.94	90.24	9170.00	90.38	5266.25	5265.83	0.00	0.00	0.00	0.00	PBHL 10H

Interpolated Points (Relative to Slot centre) (TVD relative to Kelly Bushing)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (°/100US ft)	Northing (US ft)	Easting (US ft)	Comment	
0.00	0.00	0.00	-0.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
100.00	0.00	0.00	100.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
200.00	0.00	0.00	200.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
300.00	0.00	0.00	300.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
400.00	0.00	0.00	400.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
500.00	0.00	0.00	500.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
600.00	0.00	0.00	600.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
700.00	0.00	0.00	700.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
800.00	0.00	0.00	800.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
900.00	0.00	0.00	900.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
1000.00	0.00	0.00	1000.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
1100.00	0.00	0.00	1100.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
1200.00	0.00	0.00	1200.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
1300.00	0.00	0.00	1300.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
1400.00	0.00	0.00	1400.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
1500.00	0.00	0.00	1500.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
1600.00	0.00	0.00	1600.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
1700.00	0.00	0.00	1700.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
1800.00	0.00	0.00	1800.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
1900.00	0.00	0.00	1900.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
2000.00	0.00	0.00	2000.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
2100.00	0.00	0.00	2100.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
2200.00	0.00	0.00	2200.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
2300.00	0.00	0.00	2300.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
2400.00	0.00	0.00	2400.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
2500.00	0.00	0.00	2500.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
2600.00	0.00	0.00	2600.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
2700.00	0.00	0.00	2700.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
2800.00	0.00	0.00	2800.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
2900.00	0.00	0.00	2900.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
3000.00	0.00	0.00	3000.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
3100.00	0.00	0.00	3100.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
3200.00	0.00	0.00	3200.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
3300.00	0.00	0.00	3300.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
3400.00	0.00	0.00	3400.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
3500.00	0.00	0.00	3500.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
3600.00	0.00	0.00	3600.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
3700.00	0.00	0.00	3700.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
3800.00	0.00	0.00	3800.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
3900.00	0.00	0.00	3900.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
4000.00	0.00	0.00	4000.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
4100.00	0.00	0.00	4100.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
4200.00	0.00	0.00	4200.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		
4300.00	0.00	0.00	4300.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60		

5D Plan Report

Interpolated Points: (Relative to Slot centre) (TVD Relative to Kelly Bushing)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (°/100US ft)	Northing (US ft)	Easting (US ft)	Comment
4400.00	0.00	0.00	4400.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
4500.00	0.00	0.00	4500.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
4600.00	0.00	0.00	4600.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
4700.00	0.00	0.00	4700.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
4800.00	0.00	0.00	4800.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
4900.00	0.00	0.00	4900.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
5000.00	0.00	0.00	5000.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
5100.00	0.00	0.00	5100.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
5200.00	0.00	0.00	5200.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
5300.00	0.00	0.00	5300.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
5400.00	0.00	0.00	5400.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
5500.00	0.00	0.00	5500.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
5600.00	0.00	0.00	5600.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
5700.00	0.00	0.00	5700.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
5800.00	0.00	0.00	5800.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
5900.00	0.00	0.00	5900.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
6000.00	0.00	0.00	6000.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
6100.00	0.00	0.00	6100.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
6200.00	0.00	0.00	6200.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
6300.00	0.00	0.00	6300.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
6400.00	0.00	0.00	6400.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
6500.00	0.00	0.00	6500.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
6600.00	0.00	0.00	6600.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
6700.00	0.00	0.00	6700.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
6800.00	0.00	0.00	6800.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
6900.00	0.00	0.00	6900.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
7000.00	0.00	0.00	7000.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
7100.00	0.00	0.00	7100.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
7200.00	0.00	0.00	7200.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
7300.00	0.00	0.00	7300.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
7400.00	0.00	0.00	7400.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
7500.00	0.00	0.00	7500.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
7600.00	0.00	0.00	7600.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
7700.00	0.00	0.00	7700.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
7800.00	0.00	0.00	7800.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
7900.00	0.00	0.00	7900.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
8000.00	0.00	0.00	8000.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
8100.00	0.00	0.00	8100.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
8200.00	0.00	0.00	8200.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
8300.00	0.00	0.00	8300.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
8400.00	0.00	0.00	8400.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
8500.00	0.00	0.00	8500.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	
8523.00	0.00	0.00	8523.00	-0.00	-0.00	-0.00	0.00	593930.00	621732.60	KOP
8600.00	7.70	75.15	8599.77	1.32	4.99	4.99	10.00	593931.32	621737.59	
8700.00	17.70	75.15	8697.20	6.95	26.22	26.19	10.00	593936.95	621758.82	
8800.00	27.70	75.15	8789.33	16.83	63.47	63.40	10.00	593946.83	621796.07	
8900.00	37.70	75.15	8873.38	30.66	115.62	115.50	10.00	593960.66	621848.22	
9000.00	47.70	75.15	8946.78	48.02	181.09	180.89	10.00	593978.02	621913.69	
9100.00	57.70	75.15	9007.30	68.38	257.89	257.60	10.00	593998.38	621990.49	
9123.00	60.00	75.15	9019.20	73.42	276.91	276.60	10.00	594003.42	622009.51	Build/Turn
9200.00	66.81	79.18	9053.66	88.63	344.00	343.62	10.00	594018.63	622076.60	
9300.00	75.78	83.84	9085.71	102.50	437.57	437.13	10.00	594032.50	622170.17	
9400.00	84.84	88.15	9102.53	109.32	535.78	535.31	10.00	594039.32	622268.38	
9450.03	89.38	90.24	9105.05	110.03	585.73	585.26	10.00	594040.03	622318.33	LP
9500.00	89.38	90.24	9105.59	109.81	635.69	635.22	0.00	594039.81	622368.29	
9600.00	89.38	90.24	9106.66	109.39	735.68	735.22	0.00	594039.39	622468.28	
9700.00	89.38	90.24	9107.74	108.97	835.68	835.21	0.00	594038.97	622568.28	
9800.00	89.38	90.24	9108.81	108.55	935.67	935.21	0.00	594038.55	622668.27	
9900.00	89.38	90.24	9109.89	108.13	1035.66	1035.20	0.00	594038.13	622768.26	

5D Plan Report

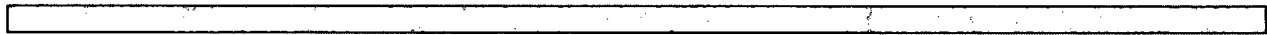
Interpolated Points (Relative to Slot centre) (TVD relative to Kelly Bushing)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (°/100US ft)	Northing (US ft)	Easting (US ft)	Comment
10000.00	89.38	90.24	9110.96	107.71	1135.66	1135.20	0.00	594037.71	622868.26	
10100.00	89.38	90.24	9112.03	107.29	1235.65	1235.19	0.00	594037.29	622968.25	
10200.00	89.38	90.24	9113.11	106.87	1335.64	1335.18	0.00	594036.87	623068.24	
10300.00	89.38	90.24	9114.18	106.45	1435.64	1435.18	0.00	594036.45	623168.24	
10400.00	89.38	90.24	9115.25	106.02	1535.63	1535.17	0.00	594036.02	623268.23	
10500.00	89.38	90.24	9116.33	105.60	1635.62	1635.17	0.00	594035.60	623368.22	
10600.00	89.38	90.24	9117.40	105.18	1735.62	1735.16	0.00	594035.18	623468.22	
10700.00	89.38	90.24	9118.48	104.76	1835.61	1835.15	0.00	594034.76	623568.21	
10800.00	89.38	90.24	9119.55	104.34	1935.60	1935.15	0.00	594034.34	623668.20	
10900.00	89.38	90.24	9120.62	103.92	2035.60	2035.14	0.00	594033.92	623768.20	
11000.00	89.38	90.24	9121.70	103.50	2135.59	2135.14	0.00	594033.50	623868.19	
11100.00	89.38	90.24	9122.77	103.08	2235.58	2235.13	0.00	594033.08	623968.18	
11200.00	89.38	90.24	9123.85	102.66	2335.58	2335.13	0.00	594032.66	624068.18	
11300.00	89.38	90.24	9124.92	102.23	2435.57	2435.12	0.00	594032.23	624168.17	
11400.00	89.38	90.24	9125.99	101.81	2535.56	2535.11	0.00	594031.81	624268.16	
11500.00	89.38	90.24	9127.07	101.39	2635.56	2635.11	0.00	594031.39	624368.16	
11600.00	89.38	90.24	9128.14	100.97	2735.55	2735.10	0.00	594030.97	624468.15	
11700.00	89.38	90.24	9129.21	100.55	2835.54	2835.10	0.00	594030.55	624568.14	
11800.00	89.38	90.24	9130.29	100.13	2935.54	2935.09	0.00	594030.13	624668.14	
11900.00	89.38	90.24	9131.36	99.71	3035.53	3035.09	0.00	594029.71	624768.13	
12000.00	89.38	90.24	9132.44	99.29	3135.52	3135.08	0.00	594029.29	624868.12	
12100.00	89.38	90.24	9133.51	98.86	3235.52	3235.07	0.00	594028.86	624968.12	
12200.00	89.38	90.24	9134.58	98.44	3335.51	3335.07	0.00	594028.44	625068.11	
12238.82	89.38	90.24	9135.00	98.28	3374.33	3373.89	0.00	594028.28	625106.93	Midpoint/Drop
12243.27	88.94	90.24	9135.07	98.26	3378.78	3378.34	10.00	594028.26	625111.38	Hold
12300.00	88.94	90.24	9136.11	98.02	3435.50	3435.06	0.00	594028.02	625168.10	
12400.00	88.94	90.24	9137.97	97.61	3535.48	3535.04	0.00	594027.61	625268.08	
12500.00	88.94	90.24	9139.82	97.19	3635.46	3635.02	0.00	594027.19	625368.06	
12600.00	88.94	90.24	9141.67	96.77	3735.44	3735.00	0.00	594026.77	625468.04	
12700.00	88.94	90.24	9143.52	96.35	3835.42	3834.99	0.00	594026.35	625568.02	
12800.00	88.94	90.24	9145.37	95.94	3935.41	3934.97	0.00	594025.94	625668.01	
12900.00	88.94	90.24	9147.22	95.52	4035.39	4034.95	0.00	594025.52	625767.99	
13000.00	88.94	90.24	9149.07	95.10	4135.37	4134.94	0.00	594025.10	625867.97	
13100.00	88.94	90.24	9150.92	94.68	4235.35	4234.92	0.00	594024.68	625967.95	
13200.00	88.94	90.24	9152.77	94.26	4335.33	4334.90	0.00	594024.26	626067.93	
13300.00	88.94	90.24	9154.62	93.85	4435.32	4434.88	0.00	594023.85	626167.92	
13400.00	88.94	90.24	9156.47	93.43	4535.30	4534.87	0.00	594023.43	626267.90	
13500.00	88.94	90.24	9158.32	93.01	4635.28	4634.85	0.00	594023.01	626367.88	
13600.00	88.94	90.24	9160.17	92.59	4735.26	4734.83	0.00	594022.59	626467.86	
13700.00	88.94	90.24	9162.02	92.18	4835.24	4834.82	0.00	594022.18	626567.84	
13800.00	88.94	90.24	9163.87	91.76	4935.23	4934.80	0.00	594021.76	626667.83	
13900.00	88.94	90.24	9165.72	91.34	5035.21	5034.78	0.00	594021.34	626767.81	
14000.00	88.94	90.24	9167.57	90.92	5135.19	5134.76	0.00	594020.92	626867.79	
14100.00	88.94	90.24	9169.42	90.51	5235.17	5234.75	0.00	594020.51	626967.77	
14131.09	88.94	90.24	9170.00	90.38	5266.25	5265.83	0.00	594020.38	626998.85	PBHL 10H

AUG 28 2015

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5D Anti-Collision Report



Devon Energy

Field Name: *Eddy Co, NM (Nad 83 NME)*

Site Name: *Turquoise PWU 27 10H*

Well Name: *Turquoise PWU 27 #10H*



24 August 2015





Turquoise PWU 27 #10H

Field Name: Eddy Co, NM (Nad 83 NME)	Map Units: US ft	Company Name: Devon Energy
	Vertical Reference Datum (VRD): Mean Sea Level	
	Projected Coordinate System: NAD83 / New Mexico East (ftUS)	
	Comment:	

Site: Turquoise PWU 27 #10H	Units: US ft	North Reference: Grid	Convergence Angle: 0.14
	Position:	Northing: 593930.00US ft	Latitude: 32° 37' 56.97"
		Easting: 621732.60US ft	Longitude: -104° 4' 19.83"
	Elevation above MSL: 3320.00 US ft		
Comment:			

Slot: Turquoise PWU 27 #10H	Position (Relative to Site Centre)		
	+N/-S: 0.00US ft	Northing: 593930.00US ft	Latitude: 32°37'56.97"
	+E/-W: 0.00US ft	Easting: 621732.60US ft	Longitude: -104°4'19.83"
	Slot TVD Reference: Ground Elevation		
Elevation above MSL: 3320.00US ft			
Comment:			

Well: Turquoise PWU 27 #10H	Type: Main well	UWI:	Plan: Working Plan
	File Number:	Comment:	
	Closure Distance: 5267.03US ft	Closure Azimuth: 89.02°	
	Vertical Section: Position of Origin (Relative to Slot centre)		
	+N/-S: -0.00US ft	+E/-W: -0.00US ft	Az: 90.24°
	Magnetic Parameters:		
Model: BGGM	Field Strength: 48395.0nT	Declination: 7.51°	Dip: 60.41° Date: 30/Oct/2015

Drill floor: Plan: Working Plan			
Rig Height (Kelly Bushing): 25.00us ft	Elevation above MSL: 3345.00us ft	Inclination: 0.00°	Azimuth: 0.00°

Collision / Uncertainty Analysis				
Primary Well	Start MD (USFt)	End MD (USFt)	Collision Risk Interval	No. of Std. Deviations in Error Computation
Turquoise PWU 27 #10H (p)	0.00	14131.06	30.00	2

Secondary Well Names:
2H (s)
6H (s)
PWU # 10 (s)
PWU # 17 (s)

Anti-Collision Report Terminology
S.Minor, S.Major: Radii of the ellipse of uncertainty at the current location as seen in the along hole direction.
PHI: Angle between high-side vector and semi-minor axis
TVD Spread: Total TVD range of the ellipsoid of uncertainty at the current location.
ES: Distance between the extremities of the primary and secondary uncertainty ellipsoids in the direction Cr-Cr.

5D Anti-Collision Report

Anti-Collision Report Terminology:
T.Face to Sec: Angle between the Hi-Side vector of the primary well at the current location and line of closest approach between the two wells.

AG Filter Info: the following filter has been applied: **Separation Factor:**

Separation factors calculated using Pedal Curve (Independent Uncertainty). Surface Uncertainty (S.U.) Not Applied. Wellpath created using minimum curvature.

Anti-Collision Summary (TVD relative to Kelly Bushing)

Secondary Well Name	Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	ES (US ft)	CC (US ft)	SF	Risk
PWU #10 (s)	12394.92	9141.93	9152.96	59.31	175.30	1.51	SF(Lo)
PWU #17 (s)	9728.20	9108.40	9115.56	273.67	322.46	6.61	
#2H (s)	8041.87	8041.87	12830.00	805.02	924.62	7.73	
#6H (s)	14131.06	9170.00	7289.00	2072.03	2133.39	34.77	

Primary Well: Turquoise (PWU 27-#10H (p)) (TVD relative to Kelly Bushing) (All Azimuth Relative to GRID NORTH)

MD (US ft)	TVD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	TVD Spread (US ft)	Secondary Well Name	ES (US ft)	CC (US ft)	SF	Risk
12120.00	9137.48	269.86	89.84	26.44	52.88	PWU #10 (s)	252.78	321.72	4.67	
12150.00	9137.97	269.81	90.65	26.63	53.26	PWU #10 (s)	223.91	297.01	4.06	
12180.00	9138.45	269.76	91.45	26.82	53.65	PWU #10 (s)	195.60	273.36	3.52	
12210.00	9138.94	269.72	92.26	27.02	54.04	PWU #10 (s)	167.93	251.07	3.02	
12240.00	9139.42	269.67	93.06	27.21	54.42	PWU #10 (s)	141.18	230.54	2.58	
12270.00	9139.91	269.63	93.87	27.40	54.81	PWU #10 (s)	116.40	212.27	2.21	
12300.00	9140.39	269.58	94.68	27.60	55.20	PWU #10 (s)	94.52	196.90	1.92	SF(Lo)
12330.00	9140.88	269.54	95.49	27.79	55.59	PWU #10 (s)	76.80	185.15	1.71	SF(Lo)
12360.00	9141.36	269.49	96.29	27.99	55.98	PWU #10 (s)	64.46	177.74	1.57	SF(Lo)
12390.00	9141.85	269.45	97.10	28.18	56.37	PWU #10 (s)	59.37	175.22	1.51	SF(Lo)
12394.92	9141.93	269.44	97.23	28.22	56.44	PWU #10 (s)	59.31	175.30	1.51	SF(Lo)
12420.00	9142.33	269.40	97.91	28.38	56.76	PWU #10 (s)	62.18	177.80	1.54	SF(Lo)
12450.00	9142.82	269.36	98.72	28.58	57.16	PWU #10 (s)	72.41	185.27	1.64	SF(Lo)
12480.00	9143.30	269.31	99.53	28.77	57.55	PWU #10 (s)	88.54	197.07	1.82	SF(Lo)
12510.00	9143.79	269.26	100.34	28.97	57.94	PWU #10 (s)	109.01	212.48	2.05	
12540.00	9144.27	269.22	101.15	29.17	58.34	PWU #10 (s)	132.62	230.78	2.35	
12570.00	9144.76	269.17	101.96	29.37	58.73	PWU #10 (s)	158.42	251.33	2.71	
12600.00	9145.24	269.13	102.77	29.56	59.13	PWU #10 (s)	185.60	273.64	3.11	
12630.00	9145.73	269.08	103.58	29.76	59.53	PWU #10 (s)	213.77	297.30	3.56	
12660.00	9146.21	269.03	104.39	29.96	59.92	PWU #10 (s)	242.14	322.02	4.03	
12690.00	9146.70	268.99	105.20	30.16	60.32	PWU #10 (s)	270.99	347.58	4.54	

Secondary Well: PWU #10 (s) (TVD relative to Kelly Bushing) (All Azimuth Relative to GRID NORTH)

Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	TVD Spread (US ft)	ES (US ft)	CC (US ft)	SF	Risk
12120.00	9142.29	9151.68	269.86	18.13	18.11	8.65	252.78	321.72	4.67	
12150.00	9142.42	9151.82	269.81	18.13	18.11	8.65	223.91	297.01	4.06	
12180.00	9142.56	9151.96	269.76	18.13	18.11	8.65	195.60	273.36	3.52	
12210.00	9142.70	9152.10	269.72	18.13	18.11	8.65	167.93	251.07	3.02	
12240.00	9142.84	9152.24	269.67	18.13	18.11	8.65	141.18	230.54	2.58	
12270.00	9142.98	9152.38	269.63	18.13	18.11	8.65	116.40	212.27	2.21	
12300.00	9143.12	9152.51	269.58	18.13	18.11	8.65	94.52	196.90	1.92	SF(Lo)
12330.00	9143.26	9152.65	269.54	18.13	18.11	8.65	76.80	185.15	1.71	SF(Lo)
12360.00	9143.40	9152.79	269.49	18.13	18.11	8.65	64.46	177.74	1.57	SF(Lo)
12390.00	9143.54	9152.93	269.45	18.13	18.11	8.65	59.37	175.22	1.51	SF(Lo)
12394.92	9143.56	9152.96	269.44	18.13	18.11	8.65	59.31	175.30	1.51	SF(Lo)
12420.00	9143.68	9153.07	269.40	18.13	18.11	8.65	62.18	177.80	1.54	SF(Lo)
12450.00	9143.82	9153.21	269.36	18.13	18.11	8.65	72.41	185.27	1.64	SF(Lo)
12480.00	9143.95	9153.35	269.31	18.13	18.11	8.65	88.54	197.07	1.82	SF(Lo)
12510.00	9144.09	9153.49	269.26	18.13	18.11	8.65	109.01	212.48	2.05	
12540.00	9144.23	9153.63	269.22	18.13	18.11	8.65	132.62	230.78	2.35	
12570.00	9144.37	9153.77	269.17	18.13	18.11	8.65	158.42	251.33	2.71	
12600.00	9144.51	9153.91	269.13	18.13	18.11	8.65	185.60	273.64	3.11	
12630.00	9144.66	9154.05	269.08	18.14	18.11	8.65	213.77	297.30	3.56	

5D Anti-Collision Report

Secondary Well: PWU #10 (S) (TVD relative to Kelly Bushing) (All Azimuth Relative to GRID NORTH)										
Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	T. Face to Sec (°)	S. Major (US ft)	S. Minor (US ft)	TVD Spread (US ft)	ES (US ft)	CC (US ft)	SF	Risk
12660.00	9144.80	9154.19	269.03	18.14	18.11	8.65	242.14	322.02	4.03	
12690.00	9144.94	9154.33	268.99	18.14	18.11	8.65	270.99	347.58	4.54	



Weatherford

Weatherford Drilling Services

GeoDec4 v2.1.0.0

Report Date: August 17, 2015
 Job Number: _____
 Customer: Devon Energy
 Well Name: Turquoise PWU 27 10H
 API Number: _____
 Rig Name: _____
 Location: Eddy Co, NM Nad83 NME
 Block: _____
 Engineer: _____

NAD83 / New Mexico East (ftUS)	NAD83 (1986)
Projected Coordinate System	Geodetic Coordinate System
Datum: North American Datum 1983 (1986)	Datum: North American Datum 1983 (1986)
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
EPSG: 2257	EPSG: 4269
North: 593930.0 US Survey Foot	Latitude: 32.632491 Degree
East: 621732.6 US Survey Foot	Longitude: -104.072176 Degree
Convergence: 0.14°	
Declination: 7.51°	
Total Correction: 7.37°	
Datum Transformation: none	

Geodetic Location WGS84
 MSL Elevation = 0 m
 Latitude = 32° 37' 56.97" N
 Longitude = 104° 04' 19.83" W

Magnetic Declination = 7.51 deg	[True North Offset]
Local Gravity = .9988 g	Checksum = 6596
Local Field Strength = 48395 nT	Magnetic Vector X = 23691 nT
Magnetic Dip = 60.41 deg	Magnetic Vector Y = 3124 nT
Magnetic Model = bggm2015.dat	Magnetic Vector Z = 42083 nT
Run Date = October 30, 2015	Magnetic Vector H = 23896 nT

Signed: _____ Date: _____

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