

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-102

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: (505) 334-1283 Fax: (505) 334-6170
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

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

Revised August 1, 2011
Submit one copy to appropriate
District Office

RECEIVED

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30.015.43265	² Pool Code 96641	³ Pool Name Paduca; Bone Spring (O)
⁴ Property Code 300635	⁵ Property Name COTTON DRAW UNIT	
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	
		⁶ Well Number 290H
		⁹ Elevation 3514.0

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	36	24 S	31 E		200	NORTH	890	EAST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
4	36	24 S	31 E		330	SOUTH	660	EAST	EDDY

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

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.

N89°39'15"E 2641.23 FT NW CORNER SEC. 36 LAT. = 32.1810840°N LONG. = 103.7400384°W NMSP EAST (FT) N = 436119.23 E = 724890.89		N89°39'28"E 2641.25 FT N/4 CORNER SEC. 36 LAT. = 32.1810875°N LONG. = 103.7315034°W NMSP EAST (FT) N = 430135.17 E = 727531.50		SURFACE LOCATION 890' 200'	
W/4 CORNER SEC. 36 LAT. = 32.1738251°N LONG. = 103.7400606°W NMSP EAST (FT) N = 427478.46 E = 724898.60		COTTON DRAW UNIT 290H ELEV. = 3514.0' LAT. = 32.1805389°N (NAD83) LONG. = 103.7258428°W NMSP EAST (FT) N = 429945.43 E = 729283.92		NE CORNER SEC. 36 LAT. = 32.1810891°N LONG. = 103.7229670°W NMSP EAST (FT) N = 430150.63 E = 730172.53	
NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE.		SE CORNER SEC. 36 LAT. = 32.1665814°N LONG. = 103.7229569°W NMSP EAST (FT) N = 427509.46 E = 730188.85		E/4 CORNER SEC. 36 LAT. = 32.1738289°N LONG. = 103.7229626°W NMSP EAST (FT) N = 427509.46 E = 730188.85	
SW CORNER SEC. 36 LAT. = 32.1666005°N LONG. = 103.7400854°W NMSP EAST (FT) N = 424872.06 E = 724905.29		S/4 CORNER SEC. 36 LAT. = 32.1666197°N LONG. = 103.7315233°W NMSP EAST (FT) N = 424871.91 E = 727554.76		SE CORNER SEC. 36 LAT. = 32.1665814°N LONG. = 103.7229569°W NMSP EAST (FT) N = 424872.91 E = 730205.58	
N89°59'48"W 2650.05 FT		S89°58'42"W 2651.40 FT		39.67 AC. BLM BOTTOM OF HOLE 660'	

¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: Trina C. Couch Date: 7/27/15

Trina C. Couch, Regulatory Analyst

Printed Name

trina.couch@dv.com

E-mail Address

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

JULY 6 2015

Date of Survey

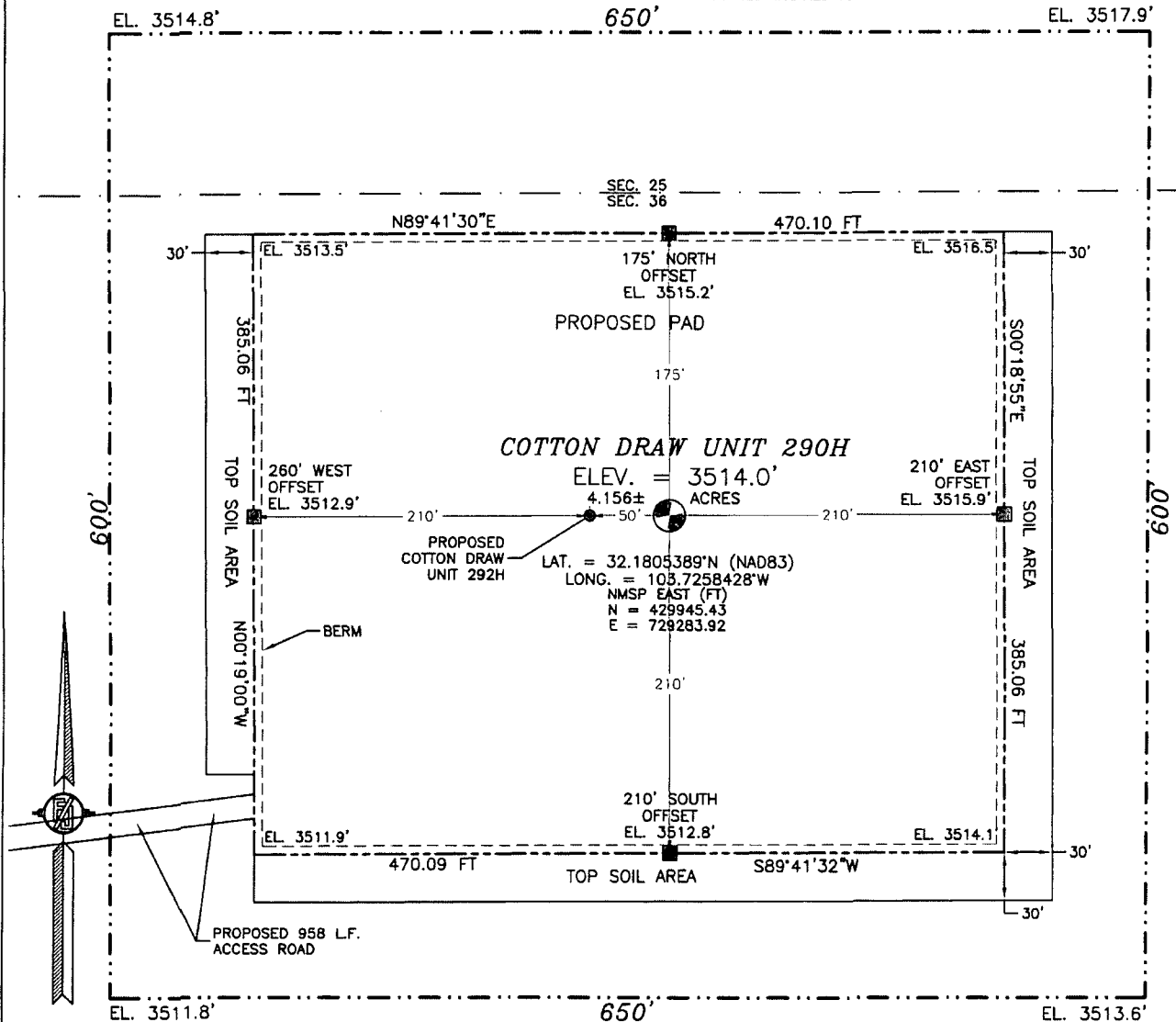
Signature and Seal of Professional Surveyor: [Signature]

Certificate Number: FILMON E. JARAMILLO, PLS 12797

SURVEY NO. 4108

**SECTION 36, TOWNSHIP 24 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP**

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE.



010 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM STATE HWY. 128 AND CR. #1 (ORLA ROAD) GO SOUTH ON CR. #1 6.2 MILES, TURN RIGHT ON CALICHE ROAD (MONSANTO) AND GO WEST 2.1 MILES, TURN RIGHT AND GO NORTH 0.75 MILE, TURN LEFT AND GO WEST 2.0 MILES, TURN RIGHT AND GO NORTH 1.8 MILES, TURN LEFT AND GO WEST 0.3 MILE, TURN RIGHT AND GO NORTH 0.7 MILE, TURN RIGHT AND GO EAST 0.7 MILE, TURN LEFT AND GO NORTH 0.83 MILE, BEND RIGHT AND GO NORTHEAST 730' TO EXISTING COTTON DRAW UNIT 99 WELL PAD, FROM SOUTHEAST CORNER OF PAD FOLLOW PROPOSED ROAD SURVEY FLAGS EAST-NORTHEAST 958' TO SOUTHWEST PAD CORNER FOR THIS LOCATION.

**DEVON ENERGY PRODUCTION COMPANY, L.P.
COTTON DRAW UNIT 290H**

**LOCATED 200 FT. FROM THE NORTH LINE
AND 890 FT. FROM THE EAST LINE OF
SECTION 36, TOWNSHIP 24 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO**

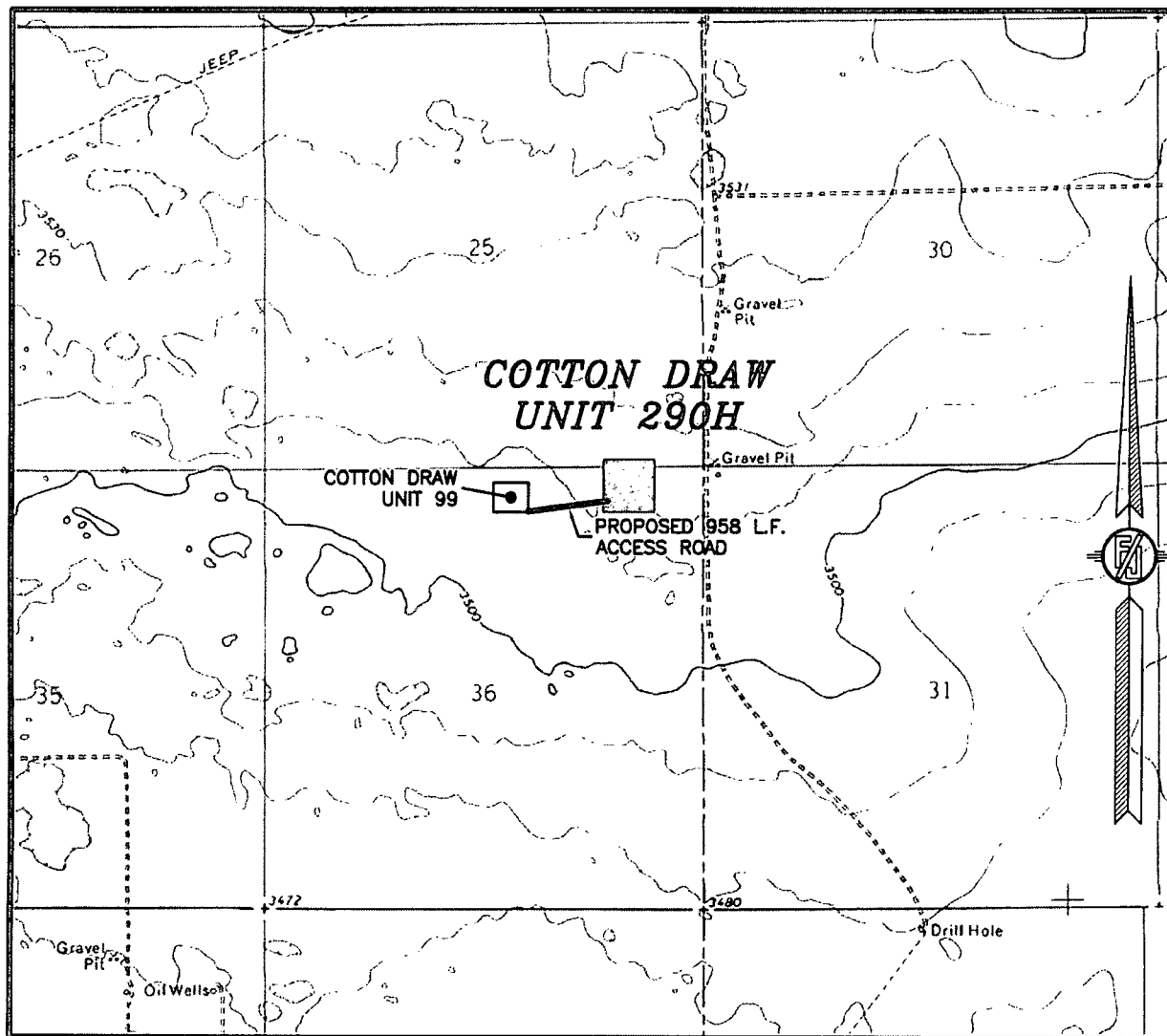
JULY 6, 2015

SURVEY NO. 4108

MADRON SURVEYING, INC. 301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

SECTION 36, TOWNSHIP 24 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
PADUCA BREAKS NW

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.
COTTON DRAW UNIT 290H

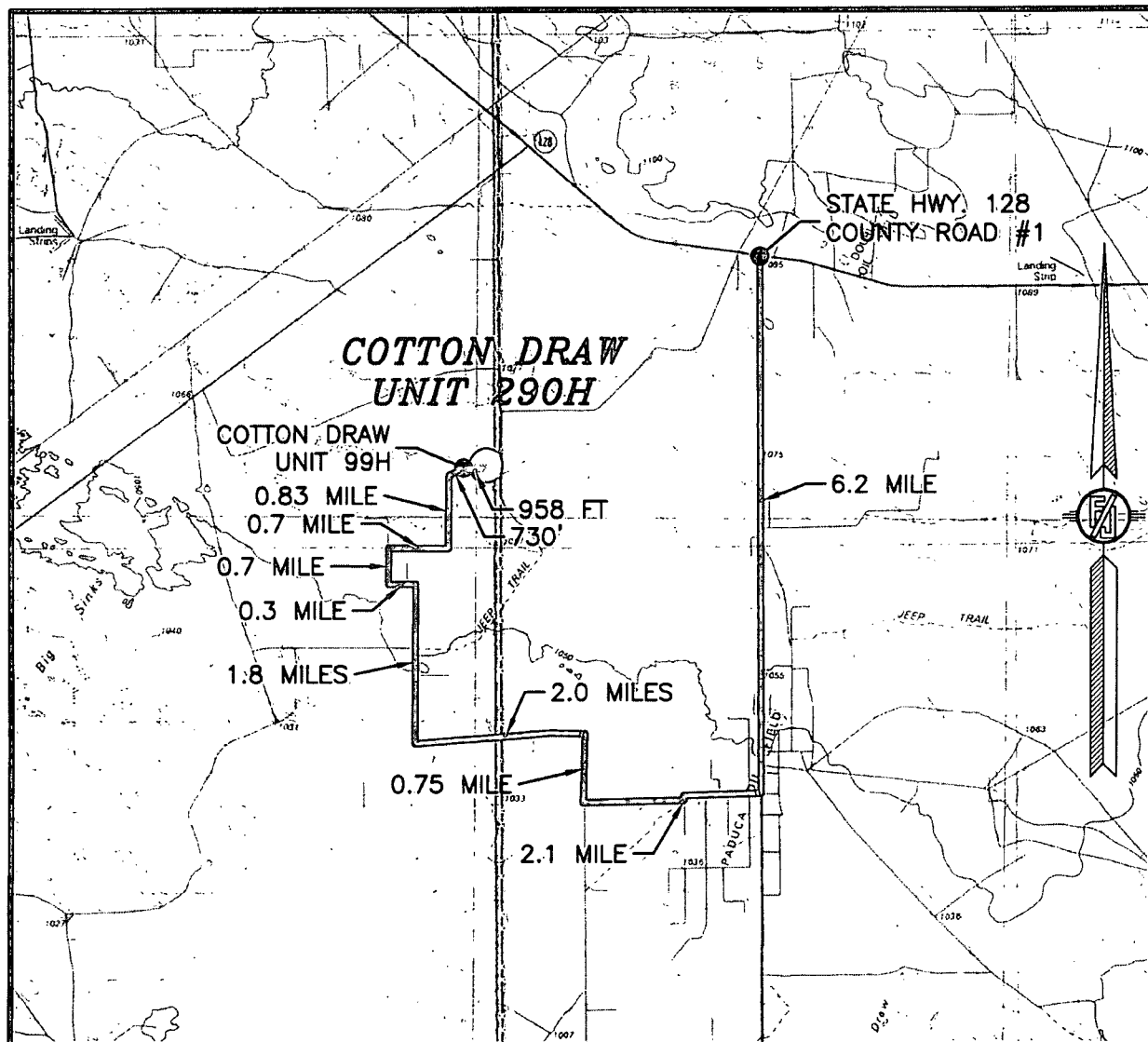
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EDDY COUNTY, STATE OF NEW MEXICO

JULY 6, 2015

MADRON SURVEYING, INC. 301 SOUTH CANAL
(575) 234-3341

SURVEY NO. 4108
CARLSBAD, NEW MEXICO

SECTION 36, TOWNSHIP 24 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION

FROM STATE HWY. 128 AND CR. #1 (ORLA ROAD) GO SOUTH ON CR. #1 8.2 MILES. TURN RIGHT ON CALICHE ROAD (MONSANTO) AND GO WEST 2.1 MILES. TURN RIGHT AND GO NORTH 0.75 MILE. TURN LEFT AND GO WEST 2.0 MILES. TURN RIGHT AND GO NORTH 1.8 MILES. TURN LEFT AND GO WEST 0.3 MILE. TURN RIGHT AND GO NORTH 0.7 MILE. TURN RIGHT AND GO EAST 0.7 MILE. TURN LEFT AND GO NORTH 0.83 MILE. BEND RIGHT AND GO NORTHEAST 730' TO EXISTING COTTON DRAW UNIT 99 WELL PAD. FROM SOUTHEAST CORNER OF PAD FOLLOW PROPOSED ROAD SURVEY FLAGS EAST-NORTHEAST 958' TO SOUTHWEST PAD CORNER FOR THIS LOCATION.

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EDDY COUNTY, STATE OF NEW MEXICO

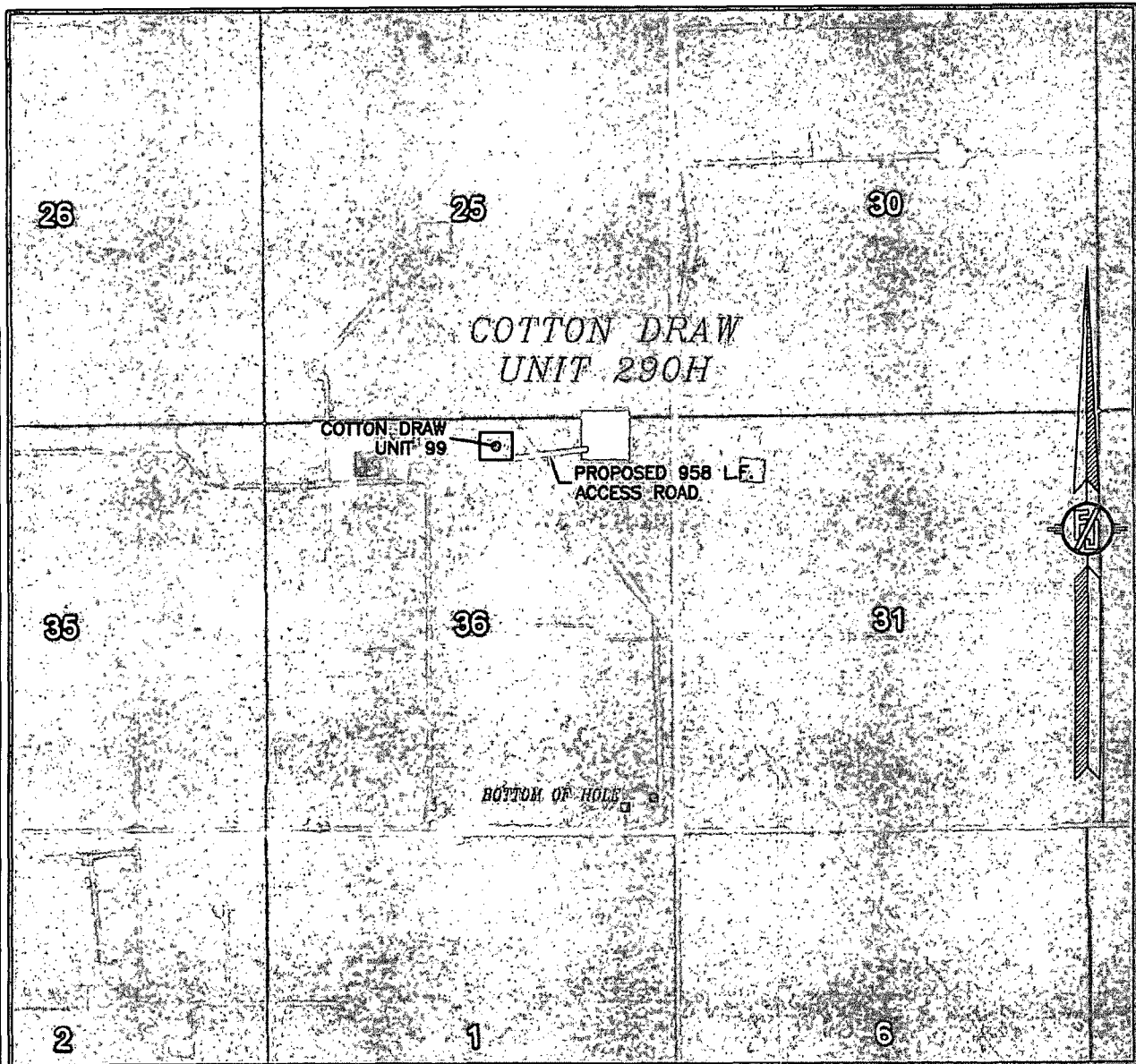
JULY 6, 2015

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MADRON SURVEYING, INC. 301 SOUTH CANAL
(575) 234-3341

CARLSBAD, NEW MEXICO

SECTION 36, TOWNSHIP 24 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
FEB. 2014

DEVON ENERGY PRODUCTION COMPANY, L.P.
COTTON DRAW UNIT 290H

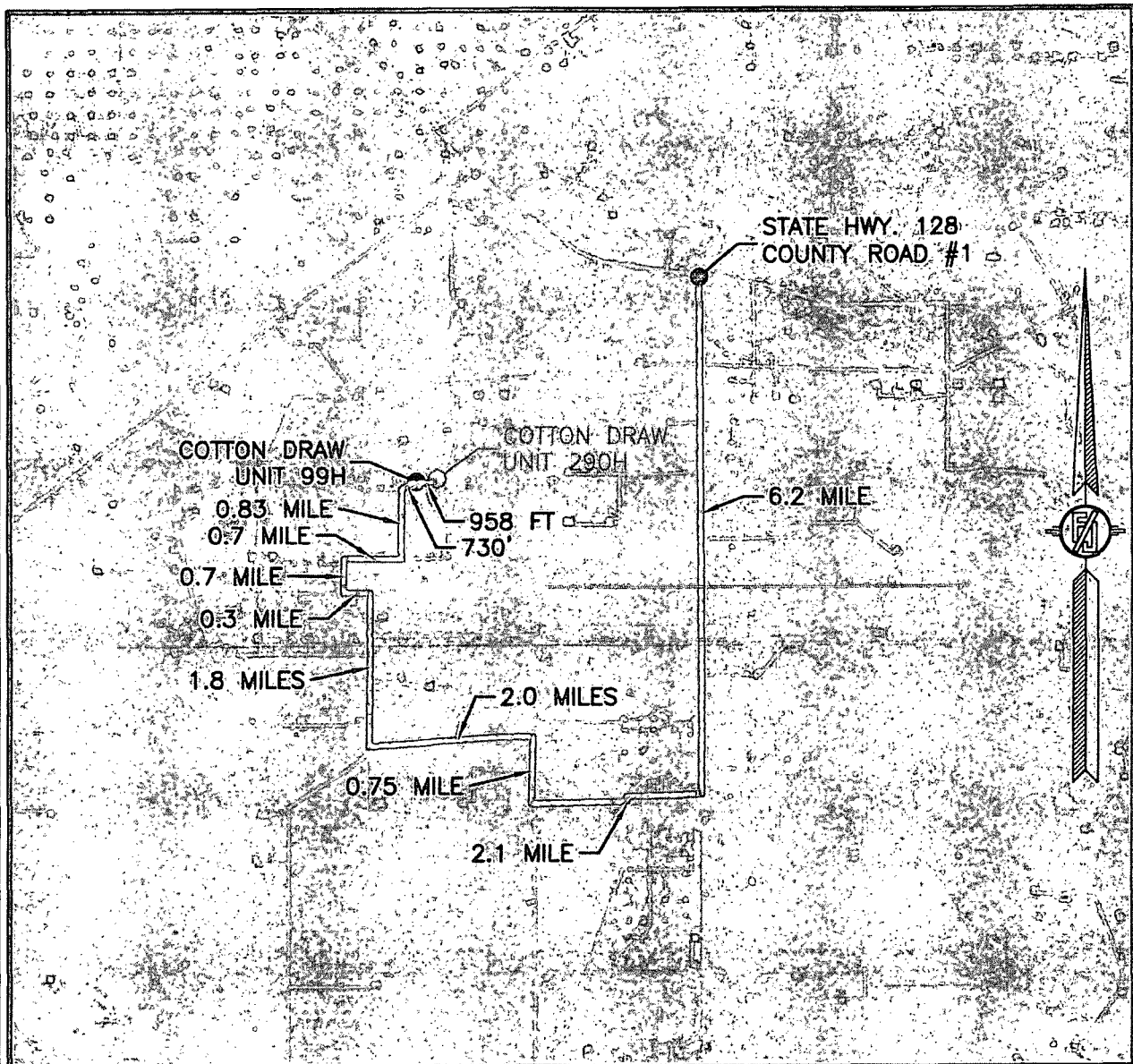
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JULY 6, 2015

SURVEY NO. 4108

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3341

SECTION 36, TOWNSHIP 24 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
FEB. 2014

DEVON ENERGY PRODUCTION COMPANY, L.P.
COTTON DRAW UNIT 290H

LOCATED 200 FT. FROM THE NORTH LINE
AND 890 FT. FROM THE EAST LINE OF
SECTION 36, TOWNSHIP 24 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

JULY 6, 2015

SURVEY NO. 4108

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3341

Devon Energy, Cotton Draw Unit 290H

1. Geologic Formations

TVD of target	10,536'	Pilot hole depth	N/A
MD at TD:	15,066'	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	675		
Top of Salt	1,100		
Base of Salt	4,210		
Bell Canyon	4,515		
Cherry Canyon	5,430		
Brushy Canyon	6,785		
Bone Spring	8,375		
1 st Bone Spring Sand	9,380		
2 nd Bone Spring Lime	9,673		
2 nd Bone Spring Sand	10,060		
2 nd Bone Spring Lower Top	10,500		
2 nd Bone Spring Lower Base	10,574		
3 rd Bone Spring Lime	10,597		

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

Devon Energy, Cotton Draw Unit 290H

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	800'	13.375"	48	H-40	STC	1.40	3.15	14.09
12.25"	0	4,350'	9.625"	40	J-55	LTC	1.14	1.75	2.99
8.75"	0	15,066'	5.5"	17	P-110	LTC	1.45	2.07	2.48
7" x 5.5" Option									
8.75"	0	9,965'	7"	29	P-110	LTC	1.28	2.04	2.67
8.75"	9,965'	15,066'	5.5"	17	P-110	LTC	1.45	2.07	2.48
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?	N
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, Cotton Draw Unit 290H

3. Cementing Program

Casing	# Sk	Wt. lb/ gal	H ₂ O gal/sk	Yld ft ³ / sack	500# Comp. Strength (hours)	Slurry Description
13-3/8" Surface	860	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
9-5/8" Inter.	910	12.9	9.81	1.85	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	430	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
7 x 5-1/2" Combo Prod.	350	10.4	16.9	3.17	16	Lead: Tuned Light [®] + 0.125 lb/sk Pol-E-Flake
	1340	14.5	5.31	1.2	25	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
7 x 5-1/2" Combo Prod. Two Stage	310	10.4	16.9	3.17	16	1 st Stage Lead: Tuned Light [®] + 0.125 lb/sk Pol-E-Flake
	1340	14.5	5.31	1.2	25	1 st Stage Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
	DV Tool = 5000ft					
	50	10.4	16.9	3.17	16	2 nd Stage Lead: Tuned Light [®] + 0.125 lb/sk Pol-E-Flake
	20	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 Two Stage	690	11.9	12.89	2.31	n/a	1 st Stage Lead: (50:50) Class H Cement: Poz (Fly Ash) + 10% BWOC Bentonite + 1 lb/sk of Kol-Seal + 0.3% BWOC HR-601 + 0.5lb/sk D-Air 5000
	1340	14.5	5.31	1.2	25	1 st Stage Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
	DV Tool = 5000ft					
	90	11	14.81	2.55	22	2 nd Stage Lead: Tuned Light [®] Cement + 0.125 lb/sk Pol-E-Flake
	30	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	530	11.9	12.89	2.31	n/a	1 st Lead: (50:50) Class H Cement: Poz (Fly Ash) + 10% BWOC Bentonite + 1 lb/sk of Kol-Seal + 0.3% BWOC HR-601 + 0.5lb/sk D-Air 5000
	330	12.5	10.86	1.96	30	2 nd Lead: (65:35) Class H Cement: Poz (Fly Ash) + 6% BWOC Bentonite + 0.25% BWOC HR-601 + 0.125 lbs/sack Poly-E-Flake
	1340	14.5	5.31	1.2	25	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite

Devon Energy, Cotton Draw Unit 290H

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%
7 x 5-1/2" Production Casing	4150'	25%
7 x 5-1/2" Production Casing Two Stage Option	1 st Stage = 5000ft / 2 nd Stage = 4150'	25%
5-1/2" Production Casing Two Stage Option	1 st Stage = 5000ft / 2 nd Stage = 4150'	25%
5-1/2" Production Casing Single Stage Option	4150'	25%

4. Pressure Control Equipment

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

*Specify if additional ram is utilized.

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

Devon Energy, Cotton Draw Unit 290H

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	Formation integrity test will be performed per Onshore Order #2. 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.
Y	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.
Y	Are anchors required by manufacturer?
Y	A multibowl wellhead may be 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. Devon proposes the option of 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. - Wellhead will be installed by vendor's representatives. - If the welding is performed by a third party, the vendor'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. 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 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.

Devon Energy, Cotton Draw Unit 290H

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. 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. The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP. Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns. See attached schematic.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	800'	FW Gel	8.6-8.8	28-34	N/C
800'	4,350'	Saturated Brine	10.0-10.2	28-34	N/C
4,350'	15,066'	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/Pason/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

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	

Devon Energy, Cotton Draw Unit 290H

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	5095 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions: 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

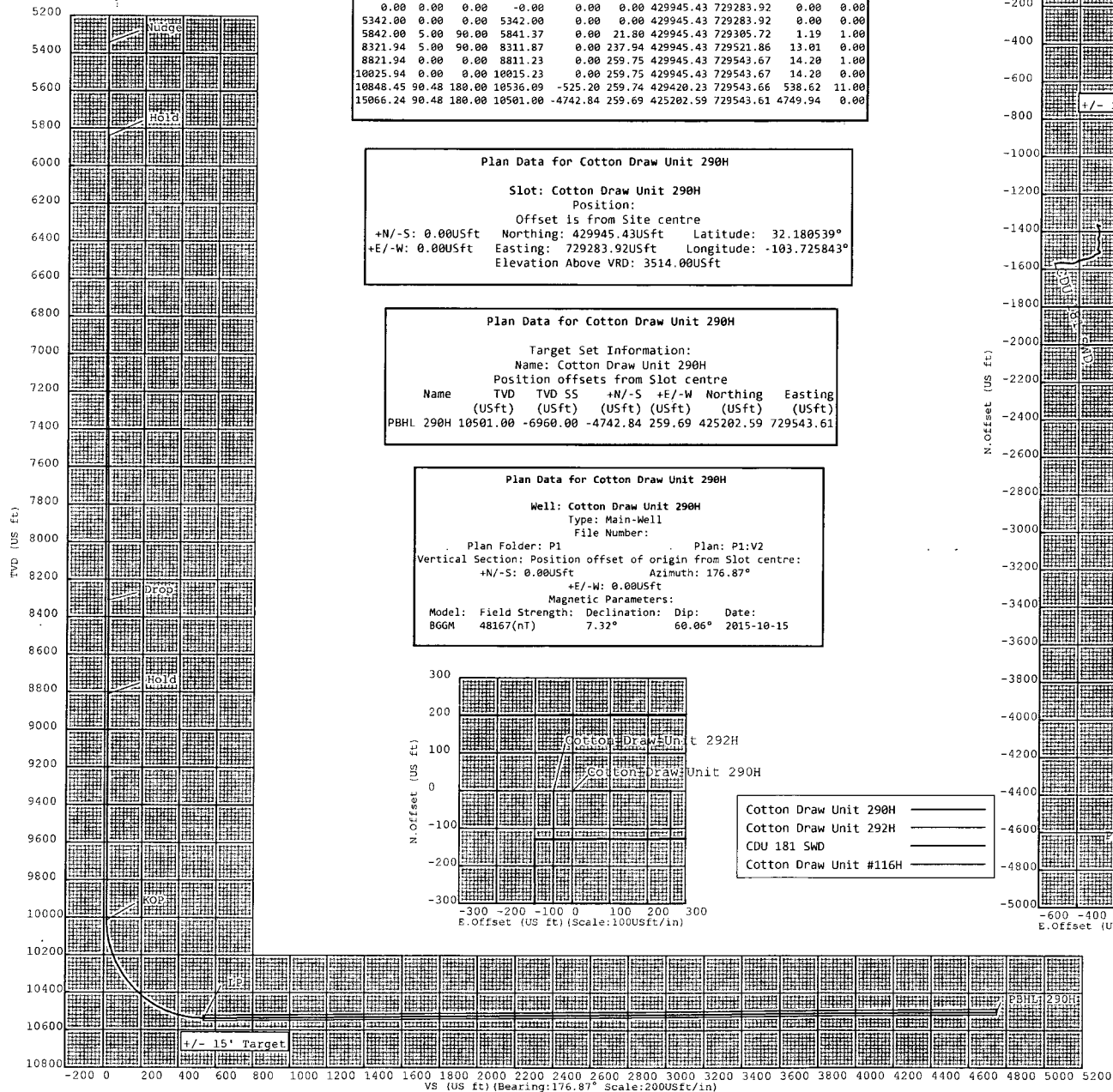
☐ Other, describe

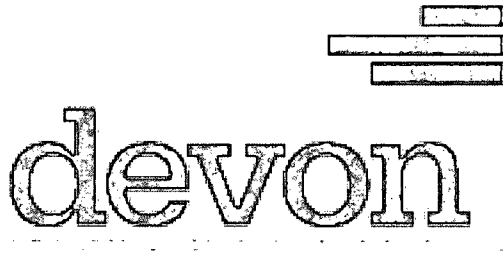


Cotton Draw Unit 290H
Eddy Co, NM



KB:3541
GL:3514



**5D Plan Report****Devon Energy**

Field Name: *Eddy Co, NM (Nad 83 NME)*
Site Name: *Cotton Draw Unit 290H,292H Pad*
Well Name: *Cotton Draw Unit 290H*
Plan: *P1:V2*

24 July 2015





Weatherford®

Cotton Draw Unit 290H

Field Names: 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: Cotton Draw Unit 290H-292H Pad	Units: US ft	North Reference: Grid	Convergence Angle: 0.32	
	Position:	Northing: 429945.43US ft	Latitude: 32° 10' 49.94"	
		Easting: 729283.92US ft	Longitude: -103° 43' 33.03"	
Elevation above MSL: 3514.00 US ft				
Comment:				
Slot: Cotton Draw Unit 290H	Position (Relative to Site Centre)			
	+N/-S: 0.00US ft	Northing: 429945.43US ft	Latitude: 32°10'49.94"	
	+E/-W: 0.00US ft	Easting: 729283.92US ft	Longitude: -103°43'33.03"	
	Slot TVD Reference: Ground Elevation			
Elevation above MSL: 3514.00US ft				
Comment:				
Well: Cotton Draw Unit 290H	Type: Main well		UWI:	Plan: P1:V2
	File Number:	Comment:		
	Closure Distance: 4749.94US ft		Closure Azimuth: 176.87°	
	Vertical Section: Position of Origin (Relative to Slot centre)			
	+N/-S: 0.00US ft		+E/-W: 0.00US ft	Az: 176.87°
	Magnetic Parameters:			
	Model: BGGM	Field Strength: 48167.7nT	Declination: 7.32°	Dip: 60.06°

Drill floor: Plan P1-V2			
Rig Height (Kelly Bushing):		Elevation above MSL:	Inclination: 0.00°
27.00us ft		3541.00us ft	Azimuth: 0.00°

Target Name:	Shape:	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (USFt)	Easting (USFt)	Comment
PBHL 290H	Cuboid	10501.00	-4742.84	259.69	425202.59	729543.61	

Wellpath created using minimum curvature.

Life Point:					
MD: 0.00USFt	Inclination: 0.00°	Azimuth: 0.00°	TVD: - 0.00USFt	North Offset: 0.00USFt	East Offset: 0.00USFt

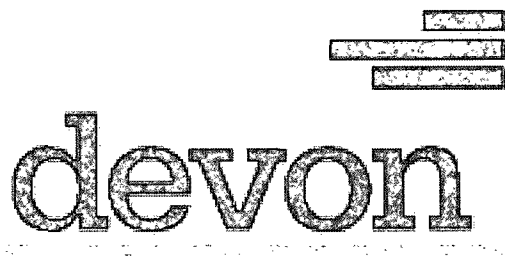
5D Plan Report

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	
5342.00	0.00	0.00	5342.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00	Nudge
5842.00	5.00	90.00	5841.37	0.00	21.80	1.19	1.00	1.00	0.00	90.00	Hold
8321.94	5.00	90.00	8311.87	0.00	237.94	13.01	0.00	0.00	0.00	0.00	Drop
8821.94	0.00	0.00	8811.23	0.00	259.75	14.20	1.00	-1.00	0.00	180.00	Hold
10025.94	0.00	0.00	10015.23	0.00	259.75	14.20	0.00	0.00	0.00	0.00	KOP
10848.45	90.48	180.00	10536.09	-525.20	259.74	538.62	11.00	11.00	0.00	180.00	LP
15066.24	90.48	180.00	10501.00	-4742.84	259.69	4749.94	0.00	0.00	0.00	0.00	PBHL 290H

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
5300.00	0.00	0.00	5300.00	0.00	0.00	-0.00	0.00	429945.43	729283.92		
5342.00	0.00	0.00	5342.00	0.00	0.00	-0.00	0.00	429945.43	729283.92		Nudge
5400.00	0.58	90.00	5400.00	0.00	0.29	0.02	1.00	429945.43	729284.21		
5500.00	1.58	90.00	5499.98	0.00	2.18	0.12	1.00	429945.43	729286.10		
5600.00	2.58	90.00	5599.91	0.00	5.81	0.32	1.00	429945.43	729289.73		
5700.00	3.58	90.00	5699.77	0.00	11.18	0.61	1.00	429945.43	729295.10		
5800.00	4.58	90.00	5799.51	0.00	18.30	1.00	1.00	429945.43	729302.22		
5842.00	5.00	90.00	5841.37	0.00	21.80	1.19	1.00	429945.43	729305.72		Hold
5900.00	5.00	90.00	5899.14	0.00	26.86	1.47	0.00	429945.43	729310.78		
6000.00	5.00	90.00	5998.76	0.00	35.57	1.94	0.00	429945.43	729319.49		
6100.00	5.00	90.00	6098.38	0.00	44.29	2.42	0.00	429945.43	729328.21		
6200.00	5.00	90.00	6198.00	0.00	53.00	2.90	0.00	429945.43	729336.92		
6300.00	5.00	90.00	6297.62	0.00	61.72	3.37	0.00	429945.43	729345.64		
6400.00	5.00	90.00	6397.24	0.00	70.44	3.85	0.00	429945.43	729354.36		
6500.00	5.00	90.00	6496.86	0.00	79.15	4.33	0.00	429945.43	729363.07		
6600.00	5.00	90.00	6596.48	0.00	87.87	4.80	0.00	429945.43	729371.79		
6700.00	5.00	90.00	6696.10	0.00	96.58	5.28	0.00	429945.43	729380.50		
6800.00	5.00	90.00	6795.72	0.00	105.30	5.76	0.00	429945.43	729389.22		
6900.00	5.00	90.00	6895.34	0.00	114.01	6.23	0.00	429945.43	729397.93		
7000.00	5.00	90.00	6994.96	0.00	122.73	6.71	0.00	429945.43	729406.65		
7100.00	5.00	90.00	7094.58	0.00	131.44	7.19	0.00	429945.43	729415.36		
7200.00	5.00	90.00	7194.20	0.00	140.16	7.66	0.00	429945.43	729424.08		
7300.00	5.00	90.00	7293.82	0.00	148.88	8.14	0.00	429945.43	729432.80		
7400.00	5.00	90.00	7393.44	0.00	157.59	8.62	0.00	429945.43	729441.51		
7500.00	5.00	90.00	7493.06	0.00	166.31	9.09	0.00	429945.43	729450.23		
7600.00	5.00	90.00	7592.68	0.00	175.02	9.57	0.00	429945.43	729458.94		
7700.00	5.00	90.00	7692.30	0.00	183.74	10.05	0.00	429945.43	729467.66		
7800.00	5.00	90.00	7791.91	0.00	192.45	10.52	0.00	429945.43	729476.37		
7900.00	5.00	90.00	7891.53	0.00	201.17	11.00	0.00	429945.43	729485.09		
8000.00	5.00	90.00	7991.15	0.00	209.88	11.47	0.00	429945.43	729493.80		
8100.00	5.00	90.00	8090.77	0.00	218.60	11.95	0.00	429945.43	729502.52		
8200.00	5.00	90.00	8190.39	0.00	227.32	12.43	0.00	429945.43	729511.24		
8300.00	5.00	90.00	8290.01	0.00	236.03	12.90	0.00	429945.43	729519.95		
8321.94	5.00	90.00	8311.87	0.00	237.94	13.01	0.00	429945.43	729521.86		Drop
8400.00	4.22	90.00	8389.68	0.00	244.22	13.35	1.00	429945.43	729528.14		
8500.00	3.22	90.00	8489.46	0.00	250.70	13.71	1.00	429945.43	729534.62		
8600.00	2.22	90.00	8589.35	0.00	255.45	13.97	1.00	429945.43	729539.37		
8700.00	1.22	90.00	8689.30	0.00	258.45	14.13	1.00	429945.43	729542.37		
8800.00	0.22	90.00	8789.29	0.00	259.70	14.20	1.00	429945.43	729543.62		
8821.94	0.00	0.00	8811.23	0.00	259.75	14.20	1.00	429945.43	729543.67		Hold
8900.00	0.00	0.00	8889.29	0.00	259.75	14.20	0.00	429945.43	729543.67		
9000.00	0.00	0.00	8989.29	0.00	259.75	14.20	0.00	429945.43	729543.67		
9100.00	0.00	0.00	9089.29	0.00	259.75	14.20	0.00	429945.43	729543.67		
9200.00	0.00	0.00	9189.29	0.00	259.75	14.20	0.00	429945.43	729543.67		
9300.00	0.00	0.00	9289.29	0.00	259.75	14.20	0.00	429945.43	729543.67		
9400.00	0.00	0.00	9389.29	0.00	259.75	14.20	0.00	429945.43	729543.67		
9500.00	0.00	0.00	9489.29	0.00	259.75	14.20	0.00	429945.43	729543.67		

5D Plan Report

Interpolated Points (Relative to Slot centre) (NVD 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
9600.00	0.00	0.00	9589.29	0.00	259.75	14.20	0.00	429945.43	729543.67	
9700.00	0.00	0.00	9689.29	0.00	259.75	14.20	0.00	429945.43	729543.67	
9800.00	0.00	0.00	9789.29	0.00	259.75	14.20	0.00	429945.43	729543.67	
9900.00	0.00	0.00	9889.29	0.00	259.75	14.20	0.00	429945.43	729543.67	
10000.00	0.00	0.00	9989.29	0.00	259.75	14.20	0.00	429945.43	729543.67	
10025.94	0.00	0.00	10015.23	0.00	259.75	14.20	0.00	429945.43	729543.67	KOP
10100.00	8.15	180.00	10089.05	-5.26	259.75	19.45	11.00	429940.17	729543.67	
10200.00	19.15	180.00	10186.07	-28.81	259.75	42.97	11.00	429916.62	729543.67	
10300.00	30.15	180.00	10276.82	-70.45	259.75	84.55	11.00	429874.98	729543.67	
10400.00	41.15	180.00	10357.96	-128.64	259.75	142.65	11.00	429816.79	729543.67	
10500.00	52.15	180.00	10426.51	-201.24	259.74	215.14	11.00	429744.19	729543.66	
10600.00	63.15	180.00	10479.94	-285.59	259.74	299.36	11.00	429659.84	729543.66	
10700.00	74.15	180.00	10516.29	-378.58	259.74	392.22	11.00	429566.85	729543.66	
10800.00	85.15	180.00	10534.24	-476.80	259.74	490.29	11.00	429468.63	729543.66	
10848.45	90.48	180.00	10536.09	-525.20	259.74	538.62	11.00	429420.23	729543.66	LP
10900.00	90.48	180.00	10535.66	-576.75	259.74	590.09	0.00	429368.68	729543.66	
11000.00	90.48	180.00	10534.83	-676.74	259.74	689.93	0.00	429268.69	729543.66	
11100.00	90.48	180.00	10533.99	-776.74	259.74	789.78	0.00	429168.69	729543.66	
11200.00	90.48	180.00	10533.16	-876.74	259.74	889.63	0.00	429068.69	729543.66	
11300.00	90.48	180.00	10532.33	-976.73	259.73	989.47	0.00	428968.70	729543.65	
11400.00	90.48	180.00	10531.50	-1076.73	259.73	1089.32	0.00	428868.70	729543.65	
11500.00	90.48	180.00	10530.67	-1176.73	259.73	1189.17	0.00	428768.70	729543.65	
11600.00	90.48	180.00	10529.84	-1276.72	259.73	1289.01	0.00	428668.71	729543.65	
11700.00	90.48	180.00	10529.00	-1376.72	259.73	1388.86	0.00	428568.71	729543.65	
11800.00	90.48	180.00	10528.17	-1476.72	259.73	1488.71	0.00	428468.71	729543.65	
11900.00	90.48	180.00	10527.34	-1576.71	259.73	1588.55	0.00	428368.72	729543.65	
12000.00	90.48	180.00	10526.51	-1676.71	259.73	1688.40	0.00	428268.72	729543.65	
12100.00	90.48	180.00	10525.68	-1776.71	259.73	1788.25	0.00	428168.72	729543.65	
12200.00	90.48	180.00	10524.84	-1876.70	259.72	1888.09	0.00	428068.73	729543.64	
12300.00	90.48	180.00	10524.01	-1976.70	259.72	1987.94	0.00	427968.73	729543.64	
12400.00	90.48	180.00	10523.18	-2076.70	259.72	2087.79	0.00	427868.73	729543.64	
12500.00	90.48	180.00	10522.35	-2176.69	259.72	2187.64	0.00	427768.74	729543.64	
12600.00	90.48	180.00	10521.52	-2276.69	259.72	2287.48	0.00	427668.74	729543.64	
12700.00	90.48	180.00	10520.68	-2376.68	259.72	2387.33	0.00	427568.75	729543.64	
12800.00	90.48	180.00	10519.85	-2476.68	259.72	2487.18	0.00	427468.75	729543.64	
12900.00	90.48	180.00	10519.02	-2576.68	259.72	2587.02	0.00	427368.75	729543.64	
13000.00	90.48	180.00	10518.19	-2676.67	259.71	2686.87	0.00	427268.76	729543.63	
13100.00	90.48	180.00	10517.36	-2776.67	259.71	2786.72	0.00	427168.76	729543.63	
13200.00	90.48	180.00	10516.52	-2876.67	259.71	2886.56	0.00	427068.76	729543.63	
13300.00	90.48	180.00	10515.69	-2976.66	259.71	2986.41	0.00	426968.77	729543.63	
13400.00	90.48	180.00	10514.86	-3076.66	259.71	3086.26	0.00	426868.77	729543.63	
13500.00	90.48	180.00	10514.03	-3176.66	259.71	3186.10	0.00	426768.77	729543.63	
13600.00	90.48	180.00	10513.20	-3276.65	259.71	3285.95	0.00	426668.78	729543.63	
13700.00	90.48	180.00	10512.37	-3376.65	259.71	3385.80	0.00	426568.78	729543.63	
13800.00	90.48	180.00	10511.53	-3476.65	259.71	3485.65	0.00	426468.78	729543.63	
13900.00	90.48	180.00	10510.70	-3576.64	259.70	3585.49	0.00	426368.79	729543.62	
14000.00	90.48	180.00	10509.87	-3676.64	259.70	3685.34	0.00	426268.79	729543.62	
14100.00	90.48	180.00	10509.04	-3776.64	259.70	3785.19	0.00	426168.79	729543.62	
14200.00	90.48	180.00	10508.21	-3876.63	259.70	3885.03	0.00	426068.80	729543.62	
14300.00	90.48	180.00	10507.37	-3976.63	259.70	3984.88	0.00	425968.80	729543.62	
14400.00	90.48	180.00	10506.54	-4076.63	259.70	4084.73	0.00	425868.80	729543.62	
14500.00	90.48	180.00	10505.71	-4176.62	259.70	4184.57	0.00	425768.81	729543.62	
14600.00	90.48	180.00	10504.88	-4276.62	259.70	4284.42	0.00	425668.81	729543.62	
14700.00	90.48	180.00	10504.05	-4376.62	259.69	4384.27	0.00	425568.81	729543.61	
14800.00	90.48	180.00	10503.21	-4476.61	259.69	4484.11	0.00	425468.82	729543.61	
14900.00	90.48	180.00	10502.38	-4576.61	259.69	4583.96	0.00	425368.82	729543.61	
15000.00	90.48	180.00	10501.55	-4676.61	259.69	4683.81	0.00	425268.82	729543.61	
15066.24	90.48	180.00	10501.00	-4742.84	259.69	4749.94	0.00	425202.59	729543.61	PBHL 290H

**5D Anti-Collision Report****Devon Energy**

Field Name: *Eddy Co, NM (Nad 83 NME)*
Site Name: *Cotton Draw Unit 290H,292H Pad*
Well Name: *Cotton Draw Unit 290H*

24 July 2015





Cotton Draw Unit 290H

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: Cotton Draw Unit 290H, 292H Pad	Units: US ft	North Reference: Grid	Convergence Angle: 0.32	
	Position:	Northing: 429945.43US ft	Latitude: 32° 10' 49.94"	
		Easting: 729283.92US ft	Longitude: -103° 43' 33.03"	
Elevation above MSL: 3514.00 US ft				
Comment:				
Slot: Cotton Draw Unit 290H	Position (Relative to Site Centre)			
	+N/-S: 0.00US ft	Northing: 429945.43US ft	Latitude: 32° 10' 49.94"	
	+E/-W: 0.00US ft	Easting: 729283.92US ft	Longitude: -103° 43' 33.03"	
Slot TVD Reference: Ground Elevation				
Elevation above MSL: 3514.00US ft				
Comment:				
Well: Cotton Draw Unit 290H	Type: Main well		UWI:	Plan: Working Plan
	File Number:	Comment:		
	Closure Distance: 4749.94US ft		Closure Azimuth: 176.87°	
	Vertical Section: Position of Origin (Relative to Slot centre)			
	+N/-S: 0.00US ft		+E/-W: 0.00US ft	Az: 176.87°
	Magnetic Parameters:			
Model: BGGM	Field Strength: 48167.7nT	Declination: 7.32°	Dip: 60.06°	Date: 15/Oct/2015

Drill floor: Plan: Working Plan		
Rig Height (Kelly Bushing): 27.00us ft	Elevation above MSL: 3541.00us 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
Cotton Draw Unit 290H (p)	0.00	15066.24	100.00	2

Secondary Well Names:
Cotton Draw Unit #116H (p)
CDU 181 SWD (s)
Cotton Draw Unit 292H (p)

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.

AC Filter Info: No filter has been applied.

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
Cotton Draw Unit 292H (p)	5392.77	5392.77	5391.77	25.69	50.23	2.05	
Cotton Draw Unit #116H (p)	8346.29	8336.13	12790.23	113.16	220.76	2.05	
CDU 181 SWD (s)	11851.95	10527.74	10524.10	412.51	562.31	3.75	

Primary Well: Cotton Draw Unit 292H (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)	Nearest Well	ES (US ft)	CC (US ft)	SF	Risk
0.00	-0.00	269.68	0.00	0.00	0.00	Cotton Draw Unit 292H (p)	49.44	50.01	88.26	
100.00	100.00	269.68	0.11	0.11	4.60	Cotton Draw Unit 292H (p)	49.21	50.00	63.60	
200.00	200.00	269.68	0.34	0.34	4.62	Cotton Draw Unit 292H (p)	48.77	50.00	40.50	
300.00	300.00	269.68	0.56	0.56	4.65	Cotton Draw Unit 292H (p)	48.32	50.00	29.69	
400.00	400.00	269.68	0.79	0.79	4.70	Cotton Draw Unit 292H (p)	47.87	50.00	23.43	
500.00	500.00	269.68	1.01	1.01	4.75	Cotton Draw Unit 292H (p)	47.42	50.00	19.36	
600.00	600.00	269.68	1.24	1.24	4.82	Cotton Draw Unit 292H (p)	46.97	50.00	16.49	
700.00	700.00	269.68	1.46	1.46	4.89	Cotton Draw Unit 292H (p)	46.52	50.00	14.36	
800.00	800.00	269.68	1.69	1.69	4.98	Cotton Draw Unit 292H (p)	46.07	50.00	12.72	
900.00	900.00	269.68	1.91	1.91	5.07	Cotton Draw Unit 292H (p)	45.62	50.00	11.41	
1000.00	1000.00	269.68	2.14	2.14	5.17	Cotton Draw Unit 292H (p)	45.17	50.00	10.35	
1100.00	1100.00	269.68	2.36	2.36	5.28	Cotton Draw Unit 292H (p)	44.72	50.00	9.47	
1200.00	1200.00	269.68	2.59	2.59	5.39	Cotton Draw Unit 292H (p)	44.27	50.00	8.73	
1300.00	1300.00	269.68	2.81	2.81	5.51	Cotton Draw Unit 292H (p)	43.82	50.00	8.09	
1400.00	1400.00	269.68	3.03	3.03	5.64	Cotton Draw Unit 292H (p)	43.37	50.00	7.54	
1500.00	1500.00	269.68	3.26	3.26	5.77	Cotton Draw Unit 292H (p)	42.92	50.00	7.06	
1600.00	1600.00	269.68	3.48	3.48	5.90	Cotton Draw Unit 292H (p)	42.47	50.00	6.64	
1700.00	1700.00	269.68	3.71	3.71	6.04	Cotton Draw Unit 292H (p)	42.02	50.00	6.27	
1800.00	1800.00	269.68	3.93	3.93	6.19	Cotton Draw Unit 292H (p)	41.57	50.00	5.93	

5D Anti-Collision Report

Primary Well: Cotton Draw Unit 292H (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)	Nearest Well	ES (US ft)	CC (US ft)	SF	Risk
1900.00	1900.00	269.68	4.16	4.16	6.33	Cotton Draw Unit 292H (p)	41.12	50.00	5.63	
2000.00	2000.00	269.68	4.38	4.38	6.48	Cotton Draw Unit 292H (p)	40.67	50.00	5.36	
2100.00	2100.00	269.68	4.61	4.61	6.64	Cotton Draw Unit 292H (p)	40.22	50.00	5.11	
2200.00	2200.00	269.68	4.83	4.83	6.80	Cotton Draw Unit 292H (p)	39.77	50.00	4.89	
2300.00	2300.00	269.68	5.06	5.06	6.96	Cotton Draw Unit 292H (p)	39.33	50.00	4.68	
2400.00	2400.00	269.68	5.28	5.28	7.12	Cotton Draw Unit 292H (p)	38.88	50.00	4.49	
2500.00	2500.00	269.68	5.51	5.51	7.29	Cotton Draw Unit 292H (p)	38.43	50.00	4.32	
2600.00	2600.00	269.68	5.73	5.73	7.45	Cotton Draw Unit 292H (p)	37.98	50.00	4.16	
2700.00	2700.00	269.68	5.96	5.96	7.63	Cotton Draw Unit 292H (p)	37.53	50.00	4.01	
2800.00	2800.00	269.68	6.18	6.18	7.80	Cotton Draw Unit 292H (p)	37.08	50.00	3.87	
2900.00	2900.00	269.68	6.41	6.41	7.98	Cotton Draw Unit 292H (p)	36.63	50.00	3.74	
3000.00	3000.00	269.68	6.63	6.63	8.15	Cotton Draw Unit 292H (p)	36.18	50.00	3.62	
3100.00	3100.00	269.68	6.86	6.86	8.34	Cotton Draw Unit 292H (p)	35.73	50.00	3.50	
3200.00	3200.00	269.68	7.08	7.08	8.52	Cotton Draw Unit 292H (p)	35.28	50.00	3.40	
3300.00	3300.00	269.68	7.31	7.31	8.71	Cotton Draw Unit 292H (p)	34.83	50.00	3.30	
3400.00	3400.00	269.68	7.53	7.53	8.90	Cotton Draw Unit 292H (p)	34.38	50.00	3.20	
3500.00	3500.00	269.68	7.76	7.76	9.09	Cotton Draw Unit 292H (p)	33.93	50.00	3.11	
3600.00	3600.00	269.68	7.98	7.98	9.28	Cotton Draw Unit 292H (p)	33.48	50.00	3.03	
3700.00	3700.00	269.68	8.20	8.20	9.48	Cotton Draw Unit 292H (p)	33.03	50.00	2.95	
3800.00	3800.00	269.68	8.43	8.43	9.68	Cotton Draw Unit 292H (p)	32.58	50.00	2.87	
3900.00	3900.00	269.68	8.65	8.65	9.88	Cotton Draw Unit 292H (p)	32.13	50.00	2.80	
4000.00	4000.00	269.68	8.88	8.88	10.08	Cotton Draw Unit 292H (p)	31.68	50.00	2.73	
4100.00	4100.00	269.68	9.10	9.10	10.29	Cotton Draw Unit 292H (p)	31.23	50.00	2.66	
4200.00	4200.00	269.68	9.33	9.33	10.50	Cotton Draw Unit 292H (p)	30.78	50.00	2.60	
4300.00	4300.00	269.68	9.55	9.55	10.72	Cotton Draw Unit 292H (p)	30.33	50.00	2.54	
4400.00	4400.00	269.68	9.78	9.78	10.93	Cotton Draw Unit 292H (p)	29.88	50.00	2.49	

5D Anti-Collision Report

Primary Well Cotton Draw Unit 290H (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)	Nearest Well	ES (US ft)	CC (US ft)	SF	Risk
4500.00	4500.00	269.68	10.00	10.00	11.15	Cotton Draw Unit 292H (p)	29.43	50.00	2.43	
4600.00	4600.00	269.68	10.23	10.23	11.38	Cotton Draw Unit 292H (p)	28.99	50.00	2.38	
4700.00	4700.00	269.68	10.45	10.45	11.61	Cotton Draw Unit 292H (p)	28.54	50.00	2.33	
4800.00	4800.00	269.68	10.68	10.68	11.84	Cotton Draw Unit 292H (p)	28.09	50.00	2.28	
4900.00	4900.00	269.68	10.90	10.90	12.07	Cotton Draw Unit 292H (p)	27.64	50.00	2.24	
5000.00	5000.00	269.68	11.13	11.13	12.31	Cotton Draw Unit 292H (p)	27.19	50.00	2.19	
5100.00	5100.00	269.68	11.35	11.35	12.55	Cotton Draw Unit 292H (p)	26.74	50.00	2.15	
5200.00	5200.00	269.68	11.58	11.58	12.79	Cotton Draw Unit 292H (p)	26.29	50.00	2.11	
5300.00	5300.00	269.68	11.80	11.80	13.04	Cotton Draw Unit 292H (p)	25.84	50.00	2.07	
5400.00	5400.00	179.68	12.02	12.02	13.30	Cotton Draw Unit 292H (p)	25.72	50.29	2.05	
5500.00	5499.98	179.69	12.21	12.21	13.55	Cotton Draw Unit 292H (p)	27.19	52.18	2.09	
5600.00	5599.91	179.71	12.41	12.40	13.81	Cotton Draw Unit 292H (p)	30.40	55.81	2.20	
5700.00	5699.77	179.74	12.61	12.59	14.08	Cotton Draw Unit 292H (p)	35.35	61.18	2.37	
5800.00	5799.51	179.76	12.82	12.78	14.34	Cotton Draw Unit 292H (p)	42.04	68.30	2.60	
5900.00	5899.14	179.79	13.03	12.97	14.61	Cotton Draw Unit 292H (p)	50.18	76.86	2.88	
6000.00	5998.76	179.81	13.24	13.17	14.89	Cotton Draw Unit 292H (p)	58.47	85.57	3.16	
6100.00	6098.38	179.83	13.45	13.37	15.17	Cotton Draw Unit 292H (p)	66.76	94.29	3.42	
6200.00	6198.00	179.84	13.66	13.58	15.46	Cotton Draw Unit 292H (p)	75.05	103.00	3.68	
6300.00	6297.62	179.86	13.88	13.78	15.75	Cotton Draw Unit 292H (p)	83.33	111.72	3.94	
6400.00	6397.24	179.87	14.10	13.98	16.04	Cotton Draw Unit 292H (p)	91.62	120.44	4.18	
6500.00	6496.86	179.88	14.32	14.19	16.34	Cotton Draw Unit 292H (p)	99.91	129.15	4.42	
6600.00	6596.48	179.88	14.54	14.40	16.65	Cotton Draw Unit 292H (p)	108.19	137.87	4.65	
6700.00	6696.10	179.89	14.76	14.60	16.96	Cotton Draw Unit 292H (p)	116.48	146.58	4.87	
6800.00	6795.72	179.90	14.99	14.81	17.27	Cotton Draw Unit 292H (p)	124.76	155.30	5.09	
6900.00	6895.34	179.90	15.22	15.02	17.59	Cotton Draw Unit 292H (p)	133.05	164.01	5.30	
7000.00	6994.96	179.91	15.45	15.23	17.91	Cotton Draw Unit 292H (p)	141.33	172.73	5.50	

5D Anti-Collision Report

Primary Well: Cotton Draw Unit 290H (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)	Nearest Well	ES (US ft)	CC (US ft)	SF	Risk
7100.00	7094.58	179.91	15.68	15.44	18.24	Cotton Draw Unit 292H (p)	149.61	181.44	5.70	
7200.00	7194.20	179.92	15.91	15.65	18.58	Cotton Draw Unit 292H (p)	157.89	190.16	5.89	
7300.00	7293.82	179.92	16.14	15.86	18.92	Cotton Draw Unit 292H (p)	166.18	198.88	6.08	
7400.00	7393.44	179.92	16.37	16.07	19.26	Cotton Draw Unit 292H (p)	174.46	207.59	6.27	
7500.00	7493.06	179.93	16.61	16.28	19.61	Cotton Draw Unit 292H (p)	182.74	216.31	6.44	
7600.00	7592.68	179.93	16.85	16.50	19.96	Cotton Draw Unit 292H (p)	191.02	225.02	6.62	
7700.00	7692.30	179.93	17.08	16.71	20.32	Cotton Draw Unit 292H (p)	199.30	233.74	6.79	
7800.00	7791.91	179.93	17.32	16.92	20.69	Cotton Draw Unit 292H (p)	207.57	242.45	6.95	
7900.00	7891.53	179.94	17.56	17.14	21.06	Cotton Draw Unit 292H (p)	215.85	251.17	7.11	
8000.00	7991.15	359.60	17.80	17.35	21.44	Cotton Draw Unit #116H (p)	343.43	418.27	5.59	
8100.00	8090.77	359.61	18.05	17.57	21.82	Cotton Draw Unit #116H (p)	253.52	337.44	4.02	
8200.00	8190.39	359.63	18.29	17.78	22.20	Cotton Draw Unit #116H (p)	173.93	269.79	2.81	
8300.00	8290.01	359.64	18.53	18.00	22.60	Cotton Draw Unit #116H (p)	121.10	227.38	2.14	
8400.00	8389.68	359.65	18.76	18.22	22.99	Cotton Draw Unit #116H (p)	121.19	225.50	2.16	
8500.00	8489.46	359.66	18.97	18.42	23.40	Cotton Draw Unit #116H (p)	175.39	266.00	2.94	
8600.00	8589.35	359.66	19.17	18.62	23.81	Cotton Draw Unit #116H (p)	256.38	333.79	4.31	
8700.00	8689.30	359.66	19.36	18.82	24.22	Cotton Draw Unit #116H (p)	347.25	415.73	6.07	
8800.00	8789.29	179.95	19.55	19.01	24.64	Cotton Draw Unit 292H (p)	270.52	309.70	7.90	
8900.00	8889.29	269.95	19.75	19.21	25.07	Cotton Draw Unit 292H (p)	270.13	309.75	7.82	
9000.00	8989.29	269.95	19.97	19.43	25.50	Cotton Draw Unit 292H (p)	269.68	309.75	7.73	
9100.00	9089.29	269.95	20.18	19.65	25.94	Cotton Draw Unit 292H (p)	269.24	309.75	7.65	
9200.00	9189.29	269.95	20.40	19.87	26.38	Cotton Draw Unit 292H (p)	268.79	309.75	7.56	
9300.00	9289.29	269.95	20.62	20.09	26.83	Cotton Draw Unit 292H (p)	268.35	309.75	7.48	
9400.00	9389.29	269.95	20.83	20.31	27.28	Cotton Draw Unit 292H (p)	267.90	309.75	7.40	
9500.00	9489.29	269.95	21.05	20.53	27.75	Cotton Draw Unit 292H (p)	267.46	309.75	7.32	
9600.00	9589.29	269.95	21.27	20.75	28.21	Cotton Draw Unit 292H (p)	267.01	309.75	7.25	

5D Anti-Collision Report

Primary Well: Cotton Draw Unit 290H (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)	Nearest Well	ES (US ft)	CC (US ft)	SF	Risk
9700.00	9689.29	269.95	21.48	20.97	28.68	Cotton Draw Unit 292H (p)	266.57	309.75	7.17	
9800.00	9789.29	268.41	21.70	21.19	29.16	Cotton Draw Unit 292H (p)	266.42	309.86	7.13	
9900.00	9889.29	263.90	21.92	21.42	29.65	Cotton Draw Unit 292H (p)	267.81	311.72	7.10	
10000.00	9989.29	257.68	22.13	21.64	30.14	Cotton Draw Unit 292H (p)	275.36	319.24	7.28	
10100.00	10089.05	70.12	22.21	21.84	30.63	Cotton Draw Unit 292H (p)	291.12	335.13	7.62	
10200.00	10186.07	63.09	22.02	21.84	31.09	Cotton Draw Unit 292H (p)	311.90	355.34	8.18	
10300.00	10276.82	57.23	22.20	21.09	31.50	Cotton Draw Unit 292H (p)	334.01	376.88	8.79	
10400.00	10357.96	52.56	22.42	20.05	31.85	Cotton Draw Unit 292H (p)	355.49	397.50	9.46	
10500.00	10426.51	49.00	22.70	18.88	32.14	Cotton Draw Unit 292H (p)	374.15	415.57	10.03	
10600.00	10479.94	45.39	23.07	17.75	32.40	CDU 181 SWD (s)	1199.01	1335.57	9.78	
10700.00	10516.29	61.00	23.54	16.89	32.65	CDU 181 SWD (s)	1114.80	1251.99	9.13	
10800.00	10534.24	80.80	24.13	16.50	32.91	CDU 181 SWD (s)	1027.56	1165.11	8.47	
10900.00	10535.66	90.39	24.83	16.59	33.19	CDU 181 SWD (s)	940.59	1078.62	7.81	
11000.00	10534.83	90.37	25.63	16.76	33.54	CDU 181 SWD (s)	855.80	994.60	7.17	
11100.00	10533.99	90.35	26.53	16.96	33.94	CDU 181 SWD (s)	774.42	913.80	6.56	
11200.00	10533.16	90.34	27.53	17.19	34.40	CDU 181 SWD (s)	696.86	837.16	5.97	
11300.00	10532.33	90.32	28.60	17.44	34.92	CDU 181 SWD (s)	624.46	765.93	5.41	
11400.00	10531.50	90.30	29.75	17.73	35.49	CDU 181 SWD (s)	558.77	701.75	4.91	
11500.00	10530.67	90.28	30.97	18.04	36.11	CDU 181 SWD (s)	502.47	646.73	4.48	
11600.00	10529.84	90.26	32.24	18.37	36.78	CDU 181 SWD (s)	457.14	603.38	4.13	
11700.00	10529.00	90.25	33.57	18.73	37.49	CDU 181 SWD (s)	426.33	574.34	3.88	
11800.00	10528.17	90.23	34.93	19.11	38.25	CDU 181 SWD (s)	412.63	561.85	3.77	
11900.00	10527.34	90.21	36.34	19.51	39.05	CDU 181 SWD (s)	417.02	566.99	3.78	
12000.00	10526.51	90.19	37.79	19.93	39.88	CDU 181 SWD (s)	439.40	589.31	3.93	
12100.00	10525.68	90.17	39.27	20.36	40.75	CDU 181 SWD (s)	477.46	626.97	4.19	
12200.00	10524.84	90.16	40.77	20.82	41.66	CDU 181 SWD (s)	528.89	677.42	4.56	
12300.00	10524.01	90.14	42.30	21.28	42.59	CDU 181 SWD (s)	590.84	738.04	5.01	
12400.00	10523.18	90.12	43.86	21.77	43.56	CDU 181 SWD (s)	659.93	806.54	5.50	
12500.00	10522.35	90.10	45.43	22.26	44.55	CDU 181 SWD (s)	735.82	881.09	6.07	
12600.00	10521.52	44.22	47.02	22.77	45.57	Cotton Draw Unit 292H (p)	367.97	440.80	6.05	
12700.00	10520.68	44.23	48.63	23.30	46.61	Cotton Draw Unit 292H (p)	365.55	440.56	5.87	

5D Anti-Collision Report

Primary Well: Cotton Draw Unit 290H (p) (TVD relative to Kelly Bushing) (All Azimuth Relative to GRID NORTH)										
MD (US ft)	TVD (US ft)	T ₂ Face to Sec (°)	S. Major (US ft)	S. Minor (US ft)	TVD Spread (US ft)	Nearest Well	ES (US ft)	CG (US ft)	SF	Risk
12800.00	10519.85	44.25	50.26	23.83	47.68	Cotton Draw Unit 292H (p)	362.91	440.32	5.69	
12900.00	10519.02	44.26	51.89	24.37	48.76	Cotton Draw Unit 292H (p)	360.29	440.08	5.52	
13000.00	10518.19	44.27	53.54	24.92	49.87	Cotton Draw Unit 292H (p)	357.69	439.83	5.35	
13100.00	10517.36	44.28	55.20	25.49	50.99	Cotton Draw Unit 292H (p)	355.07	439.59	5.20	
13200.00	10516.52	44.30	56.87	26.06	52.13	Cotton Draw Unit 292H (p)	352.31	439.35	5.05	
13300.00	10515.69	44.31	58.55	26.64	53.29	Cotton Draw Unit 292H (p)	349.55	439.11	4.90	
13400.00	10514.86	44.32	60.24	27.22	54.46	Cotton Draw Unit 292H (p)	346.78	438.87	4.77	
13500.00	10514.03	44.33	61.94	27.82	55.64	Cotton Draw Unit 292H (p)	344.01	438.62	4.64	
13600.00	10513.20	44.35	63.64	28.41	56.84	Cotton Draw Unit 292H (p)	341.23	438.38	4.51	
13700.00	10512.37	44.36	65.35	29.02	58.05	Cotton Draw Unit 292H (p)	338.45	438.14	4.39	
13800.00	10511.53	44.37	67.07	29.63	59.27	Cotton Draw Unit 292H (p)	335.65	437.90	4.28	
13900.00	10510.70	44.38	68.79	30.25	60.51	Cotton Draw Unit 292H (p)	332.82	437.65	4.17	
14000.00	10509.87	44.40	70.52	30.87	61.75	Cotton Draw Unit 292H (p)	329.98	437.41	4.07	
14100.00	10509.04	44.41	72.25	31.50	63.00	Cotton Draw Unit 292H (p)	327.14	437.17	3.97	
14200.00	10508.21	44.42	73.99	32.13	64.26	Cotton Draw Unit 292H (p)	324.28	436.93	3.88	
14300.00	10507.37	44.43	75.73	32.76	65.54	Cotton Draw Unit 292H (p)	321.41	436.69	3.79	
14400.00	10506.54	44.44	77.48	33.40	66.81	Cotton Draw Unit 292H (p)	318.54	436.45	3.70	
14500.00	10505.71	44.46	79.23	34.05	68.10	Cotton Draw Unit 292H (p)	315.66	436.20	3.62	
14600.00	10504.88	44.47	80.98	34.69	69.39	Cotton Draw Unit 292H (p)	312.78	435.96	3.54	
14700.00	10504.05	44.48	82.73	35.35	70.69	Cotton Draw Unit 292H (p)	309.88	435.72	3.46	
14800.00	10503.21	44.49	84.49	36.00	72.00	Cotton Draw Unit 292H (p)	306.98	435.48	3.39	
14900.00	10502.38	44.51	86.25	36.66	73.31	Cotton Draw Unit 292H (p)	304.08	435.24	3.32	
15000.00	10501.55	44.52	88.02	37.31	74.63	Cotton Draw Unit 292H (p)	301.16	434.99	3.25	
15066.24	10501.00	44.53	89.19	37.75	75.51	Cotton Draw Unit 292H (p)	299.23	434.83	3.21	

5D Anti-Collision Report

Secondary Well: Cotton Draw Unit # 116H (p) (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
0.00	34.00	0.00	174.10	0.00	0.00	0.00	4766.51	4768.05	3105.44
100.00	100.00	66.00	174.10	0.07	0.07	3.04	4766.21	4767.93	2775.20
200.00	200.00	166.00	174.10	0.26	0.26	4.61	4765.80	4767.93	2240.94
300.00	300.00	266.00	174.10	0.49	0.49	4.64	4765.35	4767.93	1850.86
400.00	400.00	366.00	174.10	0.71	0.71	4.68	4764.90	4767.93	1576.44
500.00	500.00	466.00	174.10	0.94	0.94	4.73	4764.45	4767.93	1372.89
600.00	600.00	566.00	174.10	1.16	1.16	4.79	4764.00	4767.93	1215.90
700.00	700.00	666.00	174.10	1.38	1.38	4.86	4763.56	4767.93	1091.12
800.00	800.00	766.00	174.10	1.61	1.61	4.95	4763.11	4767.93	989.57
900.00	900.00	866.00	174.10	1.83	1.83	5.04	4762.66	4767.93	905.32
1000.00	1000.00	966.00	174.10	2.06	2.06	5.13	4762.21	4767.93	834.28
1100.00	1100.00	1066.00	174.10	2.28	2.28	5.24	4761.76	4767.93	773.58
1200.00	1200.00	1166.00	174.10	2.51	2.51	5.35	4761.31	4767.93	721.12
1300.00	1300.00	1266.00	174.10	2.73	2.73	5.47	4760.87	4767.93	675.32
1400.00	1400.00	1366.00	174.10	2.96	2.96	5.59	4760.42	4767.93	634.99
1500.00	1500.00	1466.00	174.10	3.18	3.18	5.72	4759.97	4767.93	599.20
1600.00	1600.00	1566.00	174.10	3.41	3.41	5.85	4759.52	4767.93	567.24
1700.00	1700.00	1666.00	174.10	3.63	3.63	5.99	4759.07	4767.93	538.51
1800.00	1800.00	1766.00	174.10	3.86	3.86	6.13	4758.62	4767.93	512.55
1900.00	1900.00	1866.00	174.10	4.08	4.08	6.28	4758.18	4767.93	488.98
2000.00	2000.00	1966.00	174.10	4.31	4.31	6.43	4757.73	4767.93	467.48
2100.00	2100.00	2066.00	174.10	4.53	4.53	6.58	4757.28	4767.93	447.79
2200.00	2200.00	2166.00	174.10	4.76	4.76	6.74	4756.83	4767.93	429.70
2300.00	2300.00	2266.00	174.10	4.98	4.98	6.90	4756.38	4767.93	413.01
2400.00	2400.00	2366.00	174.10	5.21	5.21	7.06	4755.93	4767.93	397.56
2500.00	2500.00	2466.00	174.10	5.43	5.43	7.23	4755.48	4767.93	383.23
2600.00	2600.00	2566.00	174.10	5.66	5.66	7.39	4755.04	4767.93	369.90
2700.00	2700.00	2666.00	174.10	5.88	5.88	7.57	4754.59	4767.93	357.47
2800.00	2800.00	2766.00	174.10	6.11	6.11	7.74	4754.14	4767.93	345.84
2900.00	2900.00	2866.00	174.10	6.33	6.33	7.91	4753.69	4767.93	334.94
3000.00	3000.00	2966.00	174.10	6.55	6.55	8.09	4753.24	4767.93	324.72
3100.00	3100.00	3066.00	174.10	6.78	6.78	8.27	4752.79	4767.93	315.09
3200.00	3200.00	3166.00	174.10	7.00	7.00	8.46	4752.35	4767.93	306.02
3300.00	3300.00	3266.00	174.10	7.23	7.23	8.64	4751.90	4767.93	297.46
3400.00	3400.00	3366.00	174.10	7.45	7.45	8.83	4751.45	4767.93	289.37
3500.00	3500.00	3466.00	174.10	7.68	7.68	9.02	4751.00	4767.93	281.70
3600.00	8326.00	12791.71	89.65	88.11	35.66	71.32	4705.74	4748.39	111.35
3700.00	8326.00	12791.71	89.65	88.11	35.66	71.32	4606.10	4648.87	108.70
3800.00	8326.00	12791.71	89.65	88.11	35.66	71.32	4506.47	4549.37	106.05
3900.00	8326.00	12791.71	89.65	88.11	35.66	71.32	4406.86	4449.89	103.41
4000.00	8326.00	12791.71	89.65	88.11	35.66	71.32	4307.28	4350.44	100.79
4100.00	8326.00	12791.71	89.65	88.11	35.66	71.32	4207.72	4251.02	98.17
4200.00	8326.00	12791.71	89.65	88.11	35.66	71.32	4108.14	4151.62	95.48
4300.00	8326.00	12791.71	89.65	88.11	35.66	71.32	4008.59	4052.25	92.80
4400.00	8326.00	12791.71	89.65	88.11	35.66	71.32	3909.07	3952.92	90.14
4500.00	8326.00	12791.71	89.65	88.11	35.66	71.32	3809.57	3853.62	87.49
4600.00	8326.00	12791.71	89.65	88.11	35.66	71.32	3710.11	3754.35	84.85
4700.00	8326.00	12791.71	89.65	88.11	35.66	71.32	3610.68	3655.13	82.22
4800.00	8326.00	12791.71	89.65	88.11	35.66	71.32	3511.28	3555.95	79.61
4900.00	8326.00	12791.71	89.65	88.11	35.66	71.32	3411.93	3456.81	77.02
5000.00	8326.00	12791.71	89.65	88.11	35.66	71.32	3312.62	3357.73	74.43
5100.00	8326.00	12791.71	89.65	88.11	35.66	71.32	3213.36	3258.71	71.87
5200.00	8326.00	12791.71	89.65	88.11	35.66	71.32	3114.16	3159.74	69.31
5300.00	8326.00	12791.71	89.65	88.11	35.66	71.32	3015.00	3060.84	66.77
5400.00	8326.00	12791.71	359.62	88.11	35.66	71.32	2915.87	2961.98	64.24
5500.00	8326.00	12791.70	359.57	88.11	35.66	71.32	2816.58	2862.95	61.74
5600.00	8326.00	12791.68	359.52	88.11	35.66	71.32	2717.13	2763.75	59.27
5700.00	8326.00	12791.65	359.44	88.11	35.66	71.32	2617.52	2664.40	56.84

5D Anti-Collision Report

Secondary Well: Cotton Draw Unit #116H (p)(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
5800.00	8326.00	12791.60	359.35	88.10	35.66	71.32	2517.79	2564.90	54.44	
5900.00	8326.00	12791.55	359.30	88.10	35.66	71.31	2417.96	2465.30	52.07	
6000.00	8326.00	12791.49	359.32	88.10	35.66	71.31	2318.14	2365.72	49.72	
6100.00	8326.00	12791.44	359.33	88.10	35.66	71.31	2218.34	2266.17	47.38	
6200.00	8326.00	12791.39	359.35	88.10	35.66	71.31	2118.55	2166.67	45.03	
6300.00	8326.00	12791.33	359.36	88.10	35.66	71.31	2018.75	2067.21	42.66	
6400.00	8326.00	12791.28	359.37	88.10	35.66	71.31	1918.98	1967.81	40.30	
6500.00	8326.00	12791.23	359.39	88.10	35.66	71.31	1819.26	1868.48	37.96	
6600.00	8326.00	12791.17	359.40	88.10	35.65	71.31	1719.58	1769.21	35.65	
6700.00	8326.00	12791.12	359.42	88.10	35.65	71.31	1619.96	1670.04	33.35	
6800.00	8326.00	12791.06	359.43	88.09	35.65	71.31	1520.40	1570.97	31.07	
6900.00	8326.00	12791.01	359.44	88.09	35.65	71.31	1420.93	1472.03	28.81	
7000.00	8326.00	12790.96	359.46	88.09	35.65	71.31	1321.56	1373.24	26.57	
7100.00	8326.00	12790.90	359.47	88.09	35.65	71.31	1222.32	1274.64	24.36	
7200.00	8326.00	12790.85	359.49	88.09	35.65	71.31	1123.24	1176.27	22.18	
7300.00	8326.00	12790.80	359.50	88.09	35.65	71.30	1024.13	1078.21	19.94	
7400.00	8326.00	12790.74	359.51	88.09	35.65	71.30	925.22	980.54	17.73	
7500.00	8326.00	12790.69	359.53	88.09	35.65	71.30	826.63	883.38	15.56	
7600.00	8326.00	12790.63	359.54	88.09	35.65	71.30	728.48	786.95	13.46	
7700.00	8326.00	12790.58	359.56	88.09	35.65	71.30	630.67	691.52	11.36	
7800.00	8326.00	12790.53	359.57	88.09	35.65	71.30	533.49	597.59	9.32	
7900.00	8326.00	12790.47	359.58	88.08	35.65	71.30	437.62	506.00	7.40	
8000.00	8326.00	12790.42	359.60	88.08	35.65	71.30	343.43	418.27	5.59	
8100.00	8326.00	12790.37	359.61	88.08	35.65	71.30	253.52	337.44	4.02	
8200.00	8326.00	12790.31	359.63	88.08	35.65	71.30	173.93	269.79	2.81	
8300.00	8326.00	12790.26	359.64	88.08	35.65	71.30	121.10	227.38	2.14	
8400.00	8326.00	12790.21	359.65	88.08	35.65	71.30	121.19	225.50	2.16	
8500.00	8326.00	12790.17	359.66	88.08	35.65	71.30	175.39	266.00	2.94	
8600.00	8326.00	12790.14	359.66	88.08	35.65	71.30	256.38	333.79	4.31	
8700.00	8326.00	12790.12	359.66	88.08	35.65	71.30	347.25	415.73	6.07	
8800.00	8326.00	12790.11	359.65	88.08	35.65	71.29	441.86	504.96	8.00	
8900.00	8326.00	12790.11	89.65	88.08	35.65	71.29	538.17	598.01	9.99	
9000.00	8326.00	12790.11	89.65	88.08	35.65	71.29	635.42	693.02	12.03	
9100.00	8326.00	12790.11	89.65	88.08	35.65	71.29	733.10	789.27	14.05	
9200.00	8326.00	12790.11	89.65	88.08	35.65	71.29	831.06	886.34	16.03	
9300.00	8326.00	12790.11	89.65	88.08	35.65	71.29	929.42	984.00	18.03	
9400.00	8326.00	12790.11	89.65	88.08	35.65	71.29	1028.06	1082.09	20.03	
9500.00	8326.00	12790.11	89.65	88.08	35.65	71.29	1126.69	1180.50	21.94	
9600.00	8326.00	12790.11	89.65	88.08	35.65	71.29	1225.49	1279.15	23.84	
9700.00	8326.00	12790.11	89.65	88.08	35.65	71.29	1324.40	1378.00	25.71	
9800.00	8326.00	12790.11	89.65	88.08	35.65	71.29	1423.43	1477.01	27.57	
9900.00	8326.00	12790.11	89.65	88.08	35.65	71.29	1522.55	1576.14	29.41	
10000.00	8326.00	12790.11	89.65	88.08	35.65	71.29	1621.75	1675.37	31.24	
10100.00	8326.00	12784.86	321.07	87.98	35.61	71.22	1720.81	1774.45	33.08	
10200.00	8326.00	12761.30	341.73	87.56	35.45	70.89	1817.36	1870.90	34.94	
10300.00	8326.00	12719.66	348.38	86.82	35.16	70.31	1907.79	1961.18	36.74	
10400.00	8326.00	12661.47	351.42	85.78	34.75	69.50	1988.84	2041.94	38.46	
10500.00	8326.00	12588.87	353.05	84.49	34.25	68.49	2057.51	2110.20	40.05	
10600.00	8326.00	12504.53	353.98	82.98	33.66	67.32	2111.23	2163.44	41.44	
10700.00	8326.00	12411.54	354.49	81.33	33.02	66.04	2148.03	2199.69	42.57	
10800.00	8326.00	12313.32	354.71	79.58	32.34	64.68	2166.51	2217.62	43.39	
10900.00	8326.00	12213.38	354.72	77.80	31.65	63.31	2168.53	2219.09	43.89	
11000.00	8326.00	12113.38	354.70	76.03	30.97	61.93	2168.27	2218.32	44.32	
11100.00	8326.00	12013.39	354.68	74.26	30.28	60.57	2167.98	2217.55	44.73	
11200.00	8326.00	11913.39	354.66	72.49	29.60	59.20	2167.65	2216.78	45.13	
11300.00	8326.00	11813.40	354.64	70.73	28.92	57.84	2167.30	2216.01	45.50	
11400.00	8326.00	11713.40	354.63	68.96	28.25	56.49	2166.92	2215.24	45.85	
11500.00	8326.00	11613.41	354.61	67.21	27.57	55.14	2166.51	2214.47	46.18	

5D Anti-Collision Report

Secondary Well: Cotton Draw Unit #116H (p)(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
11600.00	8326.00	11513.41	354.59	65.45	26.90	53.80	2166.07	2213.70	46.48	
11700.00	8326.00	11413.42	354.57	63.70	26.24	52.47	2165.61	2212.93	46.77	
11800.00	8326.00	11313.42	354.55	61.95	25.57	51.14	2165.12	2212.16	47.03	
11900.00	8326.00	11213.43	354.54	60.21	24.91	49.82	2164.62	2211.39	47.28	
12000.00	8326.00	11113.43	354.52	58.48	24.26	48.51	2164.09	2210.62	47.51	
12100.00	8326.00	11013.44	354.50	56.75	23.61	47.21	2163.55	2209.85	47.73	
12200.00	8326.00	10913.45	354.48	55.02	22.96	45.92	2162.97	2209.08	47.91	
12300.00	8326.00	10813.45	354.46	53.30	22.32	44.64	2162.35	2208.31	48.04	
12400.00	8326.00	10713.46	354.45	51.59	21.69	43.37	2161.72	2207.54	48.17	
12500.00	8326.00	10613.46	354.43	49.89	21.06	42.12	2161.14	2206.77	48.36	
12600.00	8326.00	10513.47	354.41	48.20	20.44	40.88	2160.39	2206.01	48.36	
12700.00	8326.00	10413.47	354.39	46.52	19.83	39.65	2159.75	2205.24	48.48	
12800.00	8326.00	10313.48	354.37	44.85	19.22	38.44	2159.13	2204.47	48.62	
12900.00	8326.00	10213.48	354.36	43.19	18.63	37.25	2158.32	2203.70	48.56	
13000.00	8326.00	10113.49	354.34	41.55	18.04	36.08	2157.60	2202.94	48.59	
13100.00	8326.00	10013.49	354.32	39.92	17.47	34.93	2156.80	2202.17	48.54	
13200.00	8326.00	9913.50	354.30	38.31	16.91	33.81	2156.06	2201.40	48.55	
13300.00	8326.00	9813.50	354.28	36.72	16.36	32.71	2155.27	2200.64	48.51	
13400.00	8326.00	9713.51	354.27	35.16	15.82	31.65	2154.46	2199.87	48.44	
13500.00	8326.00	9613.52	354.25	33.62	15.31	30.62	2153.63	2199.11	48.36	
13600.00	8326.00	9513.52	354.23	32.11	14.81	29.62	2152.78	2198.34	48.25	
13700.00	8326.00	9413.53	354.21	30.63	14.33	28.66	2151.90	2197.58	48.11	
13800.00	8326.00	9313.53	354.19	29.20	13.88	27.75	2150.95	2196.81	47.90	
13900.00	8326.00	9213.54	354.17	27.81	13.45	26.89	2149.98	2196.05	47.67	
14000.00	8326.00	9113.54	354.16	26.48	13.04	26.08	2148.98	2195.28	47.41	
14100.00	8326.00	9013.55	354.14	25.20	12.67	25.34	2147.94	2194.52	47.12	
14200.00	8326.00	8913.55	354.12	24.00	12.33	24.65	2146.86	2193.75	46.79	
14300.00	8326.00	8813.56	354.10	22.88	12.02	24.04	2145.75	2192.99	46.43	
14400.00	8326.00	8713.56	354.08	21.86	11.75	23.50	2144.60	2192.22	46.03	
14500.00	8326.00	8617.90	354.07	20.98	11.53	23.06	2143.39	2191.47	45.58	
14600.00	8325.58	8597.09	354.06	20.80	11.53	22.97	2143.87	2192.71	44.90	
14700.00	8324.41	8576.33	354.06	20.64	11.55	22.90	2148.00	2197.55	44.35	
14800.00	8322.50	8555.66	354.06	20.48	11.59	22.82	2155.70	2205.99	43.87	
14900.00	8319.87	8535.15	354.07	20.32	11.66	22.74	2167.00	2217.98	43.50	
15000.00	8316.55	8514.84	354.07	20.16	11.74	22.67	2181.86	2233.48	43.26	
15066.24	8313.99	8501.52	354.08	20.05	11.81	22.62	2193.64	2245.66	43.17	

Secondary Well: CPU 131 SWD (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
0.00	8.00	0.00	191.97	0.00	0.00	0.00	1399.48	1400.12	2189.18	
100.00	98.12	90.12	191.99	0.49	0.49	2.85	1398.92	1400.16	1129.10	
200.00	199.15	191.16	192.04	1.29	1.28	4.62	1398.06	1400.32	619.69	
300.00	304.63	296.65	192.10	2.44	2.42	4.65	1396.55	1400.19	384.92	
400.00	407.66	399.70	192.16	3.57	3.54	4.70	1394.71	1399.68	281.37	
500.00	502.99	495.03	192.22	4.61	4.57	4.75	1393.02	1399.27	223.97	
600.00	594.98	587.03	192.26	5.61	5.56	4.81	1391.85	1399.31	187.44	
700.00	688.86	680.92	192.31	6.63	6.58	4.88	1391.26	1399.98	160.52	
800.00	790.57	782.63	192.35	7.74	7.68	4.97	1390.67	1400.72	139.42	
900.00	890.57	882.64	192.39	8.82	8.76	5.06	1390.01	1401.36	123.48	
1000.00	989.14	981.22	192.42	9.89	9.83	5.16	1389.43	1402.09	110.78	
1100.00	1089.10	1081.18	192.43	10.97	10.91	5.26	1388.94	1402.88	100.59	
1200.00	1189.96	1182.04	192.44	12.06	12.00	5.38	1388.38	1403.63	92.02	
1300.00	1290.81	1282.90	192.45	13.15	13.09	5.50	1387.73	1404.31	84.67	
1400.00	1391.67	1383.77	192.45	14.24	14.18	5.62	1387.04	1404.94	78.51	
1500.00	1492.54	1484.63	192.46	15.33	15.28	5.75	1386.32	1405.50	73.29	
1600.00	1595.09	1587.18	192.46	16.44	16.39	5.89	1385.45	1405.95	68.60	
1700.00	1697.87	1689.97	192.46	17.55	17.50	6.03	1384.35	1406.20	64.36	
1800.00	1800.66	1792.75	192.46	18.66	18.61	6.18	1383.07	1406.25	60.66	

5D Anti-Collision Report

Secondary Well: CPU 181 SWD (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
1900.00	1903.45	1895.54	192.47	19.77	19.72	6.33	1381.60	1406.10	57.40	
2000.00	2006.23	1998.33	192.47	20.88	20.83	6.49	1379.94	1405.76	54.44	
2100.00	2109.02	2101.11	192.48	21.99	21.95	6.65	1378.01	1405.22	51.65	
2200.00	2210.81	2202.91	192.48	23.08	23.05	6.81	1375.95	1404.49	49.21	
2300.00	2310.90	2303.00	192.49	24.17	24.13	6.97	1373.93	1403.72	47.13	
2400.00	2411.00	2403.10	192.50	25.25	25.21	7.13	1371.80	1402.94	45.06	
2500.00	2511.09	2503.20	192.51	26.33	26.30	7.30	1369.69	1402.15	43.20	
2600.00	2611.18	2603.29	192.51	27.41	27.38	7.47	1367.67	1401.35	41.61	
2700.00	2712.13	2704.25	192.52	28.50	28.47	7.64	1365.46	1400.53	39.93	
2800.00	2813.64	2805.76	192.53	29.60	29.57	7.81	1363.23	1399.61	38.46	
2900.00	2915.15	2907.27	192.54	30.70	30.67	7.99	1360.91	1398.58	37.12	
3000.00	3012.60	3004.73	192.55	31.75	31.72	8.17	1358.55	1397.56	35.82	
3100.00	3108.88	3101.01	192.56	32.80	32.77	8.34	1356.55	1396.79	34.71	
3200.00	3205.17	3197.30	192.57	33.84	33.81	8.52	1354.82	1396.29	33.67	
3300.00	3301.45	3293.59	192.59	34.88	34.85	8.70	1353.36	1396.05	32.70	
3400.00	3397.74	3389.88	192.61	35.93	35.89	8.88	1352.09	1396.08	31.73	
3500.00	3494.03	3486.17	192.63	36.97	36.93	9.07	1351.07	1396.37	30.82	
3600.00	3587.98	3580.12	192.64	37.98	37.95	9.25	1350.42	1397.01	29.99	
3700.00	3681.49	3673.64	192.63	38.99	38.96	9.43	1350.32	1398.10	29.26	
3800.00	3774.99	3767.15	192.61	40.00	39.97	9.62	1350.64	1399.65	28.56	
3900.00	3868.44	3860.63	192.57	41.00	40.98	9.80	1351.51	1401.67	27.94	
4000.00	3961.85	3954.08	192.51	42.00	41.98	9.99	1352.77	1404.16	27.33	
4100.00	4055.20	4047.49	192.43	43.01	42.99	10.19	1354.39	1407.11	26.69	
4200.00	4148.47	4140.85	192.33	44.02	43.98	10.38	1356.58	1410.53	26.15	
4300.00	4241.66	4234.15	192.22	45.03	44.98	10.58	1359.29	1414.41	25.66	
4400.00	4334.76	4327.39	192.09	46.05	45.97	10.78	1362.56	1418.77	25.24	
4500.00	4452.02	4444.79	191.97	47.35	47.27	11.04	1364.94	1422.78	24.60	
4600.00	4559.34	4552.17	191.93	48.52	48.44	11.28	1366.72	1425.83	24.12	
4700.00	4664.90	4657.76	191.89	49.68	49.59	11.52	1367.94	1428.49	23.59	
4800.00	4769.51	4762.40	191.86	50.82	50.73	11.77	1368.79	1430.75	23.09	
4900.00	4868.38	4861.30	191.82	51.91	51.79	12.00	1369.64	1432.92	22.64	
5000.00	4967.25	4960.19	191.79	52.99	52.86	12.24	1370.57	1435.17	22.22	
5100.00	5066.46	5059.44	191.77	54.08	53.94	12.48	1371.58	1437.48	21.81	
5200.00	5166.76	5159.77	191.74	55.18	55.02	12.72	1372.58	1439.80	21.42	
5300.00	5267.07	5260.10	191.73	56.28	56.11	12.98	1373.57	1442.10	21.04	
5400.00	5367.87	5360.93	101.73	57.38	57.20	13.23	1374.60	1444.42	20.69	
5500.00	5469.40	5462.48	101.78	58.49	58.30	13.49	1375.87	1446.98	20.35	
5600.00	5570.88	5563.98	101.89	59.61	59.40	13.76	1377.39	1449.78	20.03	
5700.00	5672.28	5665.40	102.08	60.72	60.50	14.03	1379.16	1452.85	19.72	
5800.00	5773.56	5766.70	102.33	61.82	61.60	14.30	1381.21	1456.20	19.42	
5900.00	5874.18	5867.34	102.65	62.92	62.69	14.58	1383.52	1459.80	19.14	
6000.00	5974.43	5967.60	102.99	64.02	63.77	14.86	1385.86	1463.43	18.87	
6100.00	6074.67	6067.86	103.33	65.11	64.86	15.14	1388.21	1467.07	18.60	
6200.00	6174.91	6168.10	103.68	66.21	65.94	15.43	1390.56	1470.71	18.35	
6300.00	6275.13	6268.34	104.02	67.30	67.03	15.72	1392.92	1474.36	18.11	
6400.00	6375.16	6368.38	104.36	68.39	68.11	16.02	1395.29	1478.01	17.87	
6500.00	6475.19	6468.42	104.70	69.48	69.19	16.32	1397.67	1481.69	17.63	
6600.00	6575.25	6568.49	105.02	70.57	70.28	16.62	1400.05	1485.39	17.41	
6700.00	6675.34	6668.59	105.34	71.67	71.36	16.94	1402.44	1489.09	17.18	
6800.00	6775.30	6768.56	105.66	72.76	72.44	17.25	1404.84	1492.81	16.97	
6900.00	6874.60	6867.87	105.96	73.84	73.52	17.57	1407.28	1496.58	16.76	
7000.00	6973.92	6967.21	106.26	74.92	74.59	17.89	1409.78	1500.40	16.56	
7100.00	7073.28	7066.57	106.54	76.01	75.67	18.22	1412.34	1504.29	16.36	
7200.00	7172.65	7165.97	106.82	77.09	76.74	18.55	1414.97	1508.22	16.17	
7300.00	7271.21	7264.55	107.08	78.17	77.81	18.89	1417.69	1512.22	16.00	
7400.00	7368.31	7361.66	107.34	79.23	78.86	19.22	1420.61	1516.39	15.83	
7500.00	7465.39	7458.77	107.60	80.30	79.91	19.56	1423.76	1520.76	15.68	
7600.00	7562.45	7555.85	107.86	81.36	80.96	19.91	1427.12	1525.33	15.53	

5D Anti-Collision Report

Secondary Well: CDU 181 SWP (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
7700.00	7659.50	7652.93	108.11	82.43	82.01	20.26	1430.69	1530.09	15.39	
7800.00	7756.75	7750.21	108.36	83.50	83.06	20.61	1434.39	1535.06	15.25	
7900.00	7854.32	7847.82	108.63	84.58	84.12	20.98	1438.17	1540.19	15.10	
8000.00	7951.84	7945.37	108.90	85.66	85.17	21.35	1442.14	1545.49	14.95	
8100.00	8048.93	8042.49	109.18	86.73	86.22	21.72	1446.32	1550.97	14.82	
8200.00	8145.90	8139.50	109.45	87.80	87.27	22.09	1450.69	1556.65	14.69	
8300.00	8242.85	8236.49	109.73	88.88	88.32	22.48	1455.27	1562.53	14.57	
8400.00	8339.82	8333.52	110.02	89.96	89.36	22.86	1459.87	1568.42	14.45	
8500.00	8436.91	8430.66	110.26	91.04	90.41	23.26	1464.11	1573.92	14.33	
8600.00	8539.63	8533.43	110.45	92.18	91.53	23.68	1467.77	1578.90	14.21	
8700.00	8647.31	8641.16	110.58	93.38	92.70	24.13	1470.36	1582.86	14.07	
8800.00	8755.09	8748.98	110.63	94.56	93.87	24.58	1471.86	1585.70	13.93	
8900.00	8862.92	8856.83	200.63	95.75	95.05	25.04	1472.44	1587.63	13.78	
9000.00	8970.25	8964.17	200.63	96.92	96.21	25.51	1472.50	1589.04	13.63	
9100.00	9073.26	9067.18	200.64	98.04	97.32	25.96	1472.29	1590.14	13.49	
9200.00	9176.27	9170.19	200.64	99.16	98.44	26.41	1471.90	1591.06	13.35	
9300.00	9279.28	9273.21	200.64	100.27	99.55	26.87	1471.30	1591.78	13.21	
9400.00	9382.91	9376.84	200.63	101.39	100.67	27.34	1470.50	1592.31	13.07	
9500.00	9487.41	9481.34	200.63	102.52	101.80	27.82	1469.42	1592.57	12.93	
9600.00	9586.09	9580.02	200.63	103.58	102.87	28.28	1468.23	1592.65	12.80	
9700.00	9680.59	9674.52	200.63	104.60	103.89	28.73	1467.37	1593.03	12.68	
9800.00	9779.23	9773.16	200.63	105.67	104.96	29.20	1466.74	1593.67	12.56	
9900.00	9881.11	9875.05	200.63	106.77	106.06	29.69	1466.00	1594.24	12.43	
10000.00	9979.12	9973.06	200.62	107.83	107.12	30.17	1465.26	1594.78	12.31	
10100.00	10075.16	10069.10	20.84	108.87	108.16	30.64	1459.86	1590.62	12.16	
10200.00	10168.79	10162.74	22.00	109.89	109.18	31.11	1437.55	1569.56	11.89	
10300.00	10260.84	10254.80	24.37	110.89	110.17	31.58	1398.46	1531.77	11.49	
10400.00	10345.31	10339.27	28.42	111.81	111.09	32.01	1344.00	1478.56	10.99	
10500.00	10416.72	10410.68	34.98	112.58	111.86	32.38	1276.55	1412.20	10.41	
10600.00	10472.44	10466.40	45.39	113.19	112.46	32.67	1199.01	1335.57	9.78	
10700.00	10510.53	10504.49	61.00	113.60	112.87	32.86	1114.80	1251.99	9.13	
10800.00	10529.68	10523.64	80.80	113.80	113.08	32.97	1027.56	1165.11	8.47	
10900.00	10531.82	10525.78	90.39	113.83	113.10	32.98	940.59	1078.62	7.81	
11000.00	10531.64	10525.61	90.37	113.83	113.10	32.98	855.80	994.60	7.17	
11100.00	10531.47	10525.43	90.35	113.82	113.10	32.97	774.42	913.80	6.56	
11200.00	10531.29	10525.25	90.34	113.82	113.10	32.97	696.86	837.16	5.97	
11300.00	10531.11	10525.08	90.32	113.82	113.10	32.97	624.46	765.93	5.41	
11400.00	10530.94	10524.90	90.30	113.82	113.09	32.97	558.77	701.75	4.91	
11500.00	10530.76	10524.72	90.28	113.82	113.09	32.97	502.47	646.73	4.48	
11600.00	10530.58	10524.54	90.26	113.81	113.09	32.97	457.14	603.38	4.13	
11700.00	10530.41	10524.37	90.25	113.81	113.09	32.97	426.33	574.34	3.88	
11800.00	10530.23	10524.19	90.23	113.81	113.09	32.97	412.63	561.85	3.77	
11900.00	10530.05	10524.02	90.21	113.81	113.08	32.97	417.02	566.99	3.78	
12000.00	10529.88	10523.84	90.19	113.81	113.08	32.97	439.40	589.31	3.93	
12100.00	10529.70	10523.66	90.17	113.80	113.08	32.97	477.46	626.97	4.19	
12200.00	10529.52	10523.49	90.16	113.80	113.08	32.96	528.89	677.42	4.56	
12300.00	10529.35	10523.31	90.14	113.80	113.08	32.96	590.84	738.04	5.01	
12400.00	10529.17	10523.14	90.12	113.80	113.07	32.96	659.93	806.54	5.50	
12500.00	10529.00	10522.96	90.10	113.80	113.07	32.96	735.82	881.09	6.07	
12600.00	10528.82	10522.78	90.08	113.80	113.07	32.96	815.41	960.27	6.63	
12700.00	10528.65	10522.61	90.07	113.79	113.07	32.96	898.85	1043.04	7.23	
12800.00	10528.47	10522.43	90.05	113.79	113.07	32.96	985.38	1128.60	7.88	
12900.00	10528.30	10522.26	90.03	113.79	113.06	32.96	1073.40	1216.36	8.51	
13000.00	10528.12	10522.08	90.01	113.79	113.06	32.96	1163.28	1305.89	9.16	
13100.00	10527.95	10521.91	89.99	113.79	113.06	32.96	1254.60	1396.84	9.82	
13200.00	10527.77	10521.73	89.98	113.78	113.06	32.96	1347.11	1488.95	10.50	
13300.00	10527.60	10521.56	89.96	113.78	113.06	32.95	1440.62	1582.01	11.19	
13400.00	10527.42	10521.38	89.94	113.78	113.06	32.95	1534.88	1675.88	11.89	

5D Anti-Collision Report

Secondary Well: CDU-181 SWD (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
13500.00	10527.25	10521.21	89.92	113.78	113.05	32.95	1629.51	1770.42	12.56	
13600.00	10527.07	10521.03	89.91	113.78	113.05	32.95	1724.69	1865.52	13.25	
13700.00	10526.90	10520.86	89.89	113.77	113.05	32.95	1820.35	1961.12	13.93	
13800.00	10526.72	10520.68	89.87	113.77	113.05	32.95	1916.44	2057.13	14.62	
13900.00	10526.55	10520.51	89.85	113.77	113.05	32.95	2012.90	2153.51	15.32	
14000.00	10526.37	10520.34	89.83	113.77	113.04	32.95	2109.69	2250.20	16.01	
14100.00	10526.20	10520.16	89.82	113.77	113.04	32.95	2206.76	2347.17	16.72	
14200.00	10526.03	10519.99	89.80	113.77	113.04	32.95	2304.08	2444.38	17.42	
14300.00	10525.85	10519.81	89.78	113.76	113.04	32.95	2401.61	2541.81	18.13	
14400.00	10525.68	10519.64	89.76	113.76	113.04	32.94	2499.34	2639.44	18.84	
14500.00	10525.50	10519.47	89.75	113.76	113.03	32.94	2597.23	2737.23	19.55	
14600.00	10525.33	10519.29	89.73	113.76	113.03	32.94	2695.27	2835.18	20.26	
14700.00	10525.16	10519.12	89.71	113.76	113.03	32.94	2793.45	2933.26	20.98	
14800.00	10524.98	10518.95	89.69	113.75	113.03	32.94	2891.75	3031.48	21.70	
14900.00	10524.81	10518.77	89.67	113.75	113.03	32.94	2990.15	3129.80	22.41	
15000.00	10524.64	10518.60	89.66	113.75	113.03	32.94	3088.66	3228.23	23.13	
15066.24	10524.52	10518.49	89.65	113.75	113.02	32.94	3153.96	3293.47	23.61	

Secondary Well: Cotton Draw Unit 292W (P) (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
0.00	1.00	0.00	269.68	0.00	0.00	0.00	49.44	50.01	88.26	
100.00	100.00	99.00	269.68	0.11	0.11	4.55	49.21	50.00	63.60	
200.00	200.00	199.00	269.68	0.33	0.33	4.62	48.77	50.00	40.50	
300.00	300.00	299.00	269.68	0.56	0.56	4.65	48.32	50.00	29.69	
400.00	400.00	399.00	269.68	0.78	0.78	4.69	47.87	50.00	23.43	
500.00	500.00	499.00	269.68	1.01	1.01	4.75	47.42	50.00	19.36	
600.00	600.00	599.00	269.68	1.23	1.23	4.82	46.97	50.00	16.49	
700.00	700.00	699.00	269.68	1.46	1.46	4.89	46.52	50.00	14.36	
800.00	800.00	799.00	269.68	1.68	1.68	4.97	46.07	50.00	12.72	
900.00	900.00	899.00	269.68	1.91	1.91	5.07	45.62	50.00	11.41	
1000.00	1000.00	999.00	269.68	2.13	2.13	5.17	45.17	50.00	10.35	
1100.00	1100.00	1099.00	269.68	2.36	2.36	5.28	44.72	50.00	9.47	
1200.00	1200.00	1199.00	269.68	2.58	2.58	5.39	44.27	50.00	8.73	
1300.00	1300.00	1299.00	269.68	2.81	2.81	5.51	43.82	50.00	8.09	
1400.00	1400.00	1399.00	269.68	3.03	3.03	5.63	43.37	50.00	7.54	
1500.00	1500.00	1499.00	269.68	3.26	3.26	5.77	42.92	50.00	7.06	
1600.00	1600.00	1599.00	269.68	3.48	3.48	5.90	42.47	50.00	6.64	
1700.00	1700.00	1699.00	269.68	3.71	3.71	6.04	42.02	50.00	6.27	
1800.00	1800.00	1799.00	269.68	3.93	3.93	6.18	41.57	50.00	5.93	
1900.00	1900.00	1899.00	269.68	4.16	4.16	6.33	41.12	50.00	5.63	
2000.00	2000.00	1999.00	269.68	4.38	4.38	6.48	40.67	50.00	5.36	
2100.00	2100.00	2099.00	269.68	4.61	4.61	6.64	40.22	50.00	5.11	
2200.00	2200.00	2199.00	269.68	4.83	4.83	6.79	39.77	50.00	4.89	
2300.00	2300.00	2299.00	269.68	5.06	5.06	6.96	39.33	50.00	4.68	
2400.00	2400.00	2399.00	269.68	5.28	5.28	7.12	38.88	50.00	4.49	
2500.00	2500.00	2499.00	269.68	5.51	5.51	7.28	38.43	50.00	4.32	
2600.00	2600.00	2599.00	269.68	5.73	5.73	7.45	37.98	50.00	4.16	
2700.00	2700.00	2699.00	269.68	5.95	5.95	7.62	37.53	50.00	4.01	
2800.00	2800.00	2799.00	269.68	6.18	6.18	7.80	37.08	50.00	3.87	
2900.00	2900.00	2899.00	269.68	6.40	6.40	7.97	36.63	50.00	3.74	
3000.00	3000.00	2999.00	269.68	6.63	6.63	8.15	36.18	50.00	3.62	
3100.00	3100.00	3099.00	269.68	6.85	6.85	8.33	35.73	50.00	3.50	
3200.00	3200.00	3199.00	269.68	7.08	7.08	8.52	35.28	50.00	3.40	
3300.00	3300.00	3299.00	269.68	7.30	7.30	8.70	34.83	50.00	3.30	
3400.00	3400.00	3399.00	269.68	7.53	7.53	8.89	34.38	50.00	3.20	
3500.00	3500.00	3499.00	269.68	7.75	7.75	9.08	33.93	50.00	3.11	
3600.00	3600.00	3599.00	269.68	7.98	7.98	9.28	33.48	50.00	3.03	
3700.00	3700.00	3699.00	269.68	8.20	8.20	9.48	33.03	50.00	2.95	

5D Anti-Collision Report

Secondary Well: Cotton Draw Unit 292H (p)(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
3800.00	3800.00	3799.00	269.68	8.43	8.43	9.67	32.58	50.00	2.87	
3900.00	3900.00	3899.00	269.68	8.65	8.65	9.88	32.13	50.00	2.80	
4000.00	4000.00	3999.00	269.68	8.88	8.88	10.08	31.68	50.00	2.73	
4100.00	4100.00	4099.00	269.68	9.10	9.10	10.29	31.23	50.00	2.66	
4200.00	4200.00	4199.00	269.68	9.33	9.33	10.50	30.78	50.00	2.60	
4300.00	4300.00	4299.00	269.68	9.55	9.55	10.72	30.33	50.00	2.54	
4400.00	4400.00	4399.00	269.68	9.78	9.78	10.93	29.88	50.00	2.49	
4500.00	4500.00	4499.00	269.68	10.00	10.00	11.15	29.43	50.00	2.43	
4600.00	4600.00	4599.00	269.68	10.23	10.23	11.38	28.99	50.00	2.38	
4700.00	4700.00	4699.00	269.68	10.45	10.45	11.60	28.54	50.00	2.33	
4800.00	4800.00	4799.00	269.68	10.68	10.68	11.83	28.09	50.00	2.28	
4900.00	4900.00	4899.00	269.68	10.90	10.90	12.07	27.64	50.00	2.24	
5000.00	5000.00	4999.00	269.68	11.12	11.12	12.31	27.19	50.00	2.19	
5100.00	5100.00	5099.00	269.68	11.35	11.35	12.55	26.74	50.00	2.15	
5200.00	5200.00	5199.00	269.68	11.57	11.57	12.79	26.29	50.00	2.11	
5300.00	5300.00	5299.00	269.68	11.80	11.80	13.04	25.84	50.00	2.07	
5400.00	5400.00	5399.00	179.68	12.02	12.02	13.29	25.72	50.29	2.05	
5500.00	5499.98	5498.98	179.69	12.25	12.25	13.55	27.19	52.18	2.09	
5600.00	5599.91	5598.91	179.71	12.47	12.47	13.81	30.40	55.81	2.20	
5700.00	5699.77	5698.77	179.74	12.70	12.70	14.08	35.35	61.18	2.37	
5800.00	5799.51	5798.51	179.76	12.92	12.92	14.34	42.04	68.30	2.60	
5900.00	5899.14	5898.14	179.79	13.15	13.15	14.62	50.18	76.86	2.88	
6000.00	5998.76	5997.76	179.81	13.37	13.37	14.89	58.47	85.57	3.16	
6100.00	6098.38	6097.38	179.83	13.59	13.59	15.17	66.76	94.29	3.42	
6200.00	6198.00	6197.00	179.84	13.82	13.82	15.46	75.05	103.00	3.68	
6300.00	6297.62	6296.62	179.86	14.04	14.04	15.75	83.33	111.72	3.94	
6400.00	6397.24	6396.24	179.87	14.27	14.27	16.04	91.62	120.44	4.18	
6500.00	6496.86	6495.86	179.88	14.49	14.49	16.34	99.91	129.15	4.42	
6600.00	6596.48	6595.48	179.88	14.71	14.71	16.65	108.19	137.87	4.65	
6700.00	6696.10	6695.10	179.89	14.94	14.94	16.95	116.48	146.58	4.87	
6800.00	6795.72	6794.72	179.90	15.16	15.16	17.27	124.76	155.30	5.09	
6900.00	6895.34	6894.34	179.90	15.39	15.39	17.59	133.05	164.01	5.30	
7000.00	6994.96	6993.96	179.91	15.61	15.61	17.91	141.33	172.73	5.50	
7100.00	7094.58	7093.58	179.91	15.83	15.83	18.24	149.61	181.44	5.70	
7200.00	7194.20	7193.20	179.92	16.06	16.06	18.57	157.89	190.16	5.89	
7300.00	7293.82	7292.82	179.92	16.28	16.28	18.91	166.18	198.88	6.08	
7400.00	7393.44	7392.44	179.92	16.50	16.50	19.25	174.46	207.59	6.27	
7500.00	7493.06	7492.06	179.93	16.73	16.73	19.60	182.74	216.31	6.44	
7600.00	7592.68	7591.68	179.93	16.95	16.95	19.95	191.02	225.02	6.62	
7700.00	7692.30	7691.30	179.93	17.18	17.18	20.31	199.30	233.74	6.79	
7800.00	7791.91	7790.91	179.93	17.40	17.40	20.68	207.57	242.45	6.95	
7900.00	7891.53	7890.53	179.94	17.62	17.62	21.05	215.85	251.17	7.11	
8000.00	7991.15	7990.15	179.94	17.85	17.85	21.42	224.13	259.89	7.27	
8100.00	8090.77	8089.77	179.94	18.07	18.07	21.80	232.41	268.60	7.42	
8200.00	8190.39	8189.39	179.94	18.30	18.30	22.19	240.68	277.32	7.57	
8300.00	8290.01	8289.01	179.94	18.52	18.52	22.58	248.96	286.03	7.72	
8400.00	8389.68	8388.68	179.95	18.74	18.74	22.98	256.71	294.22	7.84	
8500.00	8489.46	8488.46	179.95	18.97	18.97	23.38	262.78	300.70	7.93	
8600.00	8589.35	8588.35	179.95	19.19	19.19	23.79	267.10	305.45	7.96	
8700.00	8689.30	8688.30	179.95	19.42	19.42	24.20	269.68	308.45	7.96	
8800.00	8789.29	8788.29	179.95	19.64	19.64	24.62	270.52	309.70	7.90	
8900.00	8889.29	8888.29	269.95	19.87	19.87	25.05	270.13	309.75	7.82	
9000.00	8989.29	8988.29	269.95	20.09	20.09	25.48	269.68	309.75	7.73	
9100.00	9089.29	9088.29	269.95	20.32	20.32	25.92	269.24	309.75	7.65	
9200.00	9189.29	9188.29	269.95	20.54	20.54	26.36	268.79	309.75	7.56	
9300.00	9289.29	9288.29	269.95	20.77	20.77	26.81	268.35	309.75	7.48	
9400.00	9389.29	9388.29	269.95	20.99	20.99	27.27	267.90	309.75	7.40	
9500.00	9489.29	9488.29	269.95	21.22	21.22	27.73	267.46	309.75	7.32	

5D Anti-Collision Report

Secondary Well: Cotton Draw Unit 292H (p) (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
9600.00	9589.29	9588.29	269.95	21.44	21.44	28.19	267.01	309.75	7.25	
9700.00	9689.29	9688.29	269.95	21.67	21.67	28.67	266.57	309.75	7.17	
9800.00	9787.80	9787.29	268.41	21.83	21.64	29.13	266.42	309.86	7.13	
9900.00	9877.08	9879.99	263.90	21.97	21.22	29.53	267.81	311.72	7.10	
10000.00	9951.28	9961.93	257.68	22.11	20.57	29.84	275.36	319.24	7.28	
10100.00	10011.36	10033.96	70.12	22.25	19.83	30.09	291.12	335.13	7.62	
10200.00	10063.04	10102.65	63.09	22.39	19.02	30.30	311.90	355.34	8.18	
10300.00	10106.99	10169.14	57.23	22.58	18.19	30.48	334.01	376.88	8.79	
10400.00	10143.41	10234.02	52.56	22.80	17.40	30.64	355.49	397.50	9.46	
10500.00	10172.43	10297.73	49.00	23.04	16.70	30.79	374.15	415.57	10.03	
10600.00	10194.08	10360.62	46.47	23.35	16.15	30.94	388.97	429.91	10.50	
10700.00	10208.37	10422.97	44.86	23.68	15.79	31.09	398.99	439.74	10.79	
10800.00	10215.29	10485.01	44.09	24.06	15.65	31.25	403.64	444.58	10.86	
10900.00	10215.70	10566.33	44.02	24.62	15.75	31.49	403.24	444.92	10.67	
11000.00	10215.11	10666.33	44.03	25.41	15.92	31.84	401.97	444.68	10.41	
11100.00	10214.51	10766.33	44.04	26.30	16.13	32.25	400.59	444.44	10.14	
11200.00	10213.92	10866.33	44.05	27.29	16.36	32.72	399.01	444.20	9.83	
11300.00	10213.33	10966.33	44.06	28.35	16.63	33.25	397.27	443.95	9.51	
11400.00	10212.74	11066.33	44.08	29.50	16.92	33.83	395.44	443.71	9.19	
11500.00	10212.14	11166.33	44.09	30.71	17.24	34.47	393.51	443.47	8.88	
11600.00	10211.55	11266.33	44.10	31.97	17.58	35.16	391.50	443.23	8.57	
11700.00	10210.96	11366.33	44.11	33.29	17.95	35.89	389.41	442.98	8.27	
11800.00	10210.37	11466.33	44.13	34.66	18.34	36.67	387.26	442.74	7.98	
11900.00	10209.77	11566.33	44.14	36.07	18.75	37.49	385.03	442.50	7.70	
12000.00	10209.18	11666.33	44.15	37.51	19.17	38.34	382.75	442.26	7.43	
12100.00	10208.59	11766.33	44.16	38.99	19.62	39.24	380.42	442.01	7.18	
12200.00	10208.00	11866.33	44.17	40.49	20.09	40.16	378.05	441.77	6.93	
12300.00	10207.40	11966.33	44.19	42.02	20.56	41.12	375.65	441.53	6.70	
12400.00	10206.81	12066.33	44.20	43.57	21.06	42.11	373.23	441.29	6.48	
12500.00	10206.22	12166.33	44.21	45.15	21.57	43.12	370.79	441.04	6.28	
12600.00	10205.62	12266.33	44.22	46.74	22.09	44.16	367.97	440.80	6.05	
12700.00	10205.03	12366.33	44.23	48.35	22.62	45.23	365.55	440.56	5.87	
12800.00	10204.44	12466.33	44.25	49.97	23.16	46.31	362.91	440.32	5.69	
12900.00	10203.85	12566.33	44.26	51.61	23.72	47.42	360.29	440.08	5.52	
13000.00	10203.25	12666.33	44.27	53.26	24.28	48.55	357.69	439.83	5.35	
13100.00	10202.66	12766.33	44.28	54.92	24.85	49.69	355.07	439.59	5.20	
13200.00	10202.07	12866.33	44.30	56.59	25.43	50.85	352.31	439.35	5.05	
13300.00	10201.48	12966.33	44.31	58.27	26.02	52.03	349.55	439.11	4.90	
13400.00	10200.88	13066.32	44.32	59.96	26.61	53.22	346.78	438.87	4.77	
13500.00	10200.29	13166.32	44.33	61.66	27.22	54.42	344.01	438.62	4.64	
13600.00	10199.70	13266.32	44.35	63.36	27.82	55.64	341.23	438.38	4.51	
13700.00	10199.11	13366.32	44.36	65.07	28.44	56.86	338.45	438.14	4.39	
13800.00	10198.51	13466.32	44.37	66.79	29.06	58.10	335.65	437.90	4.28	
13900.00	10197.92	13566.32	44.38	68.51	29.68	59.35	332.82	437.65	4.17	
14000.00	10197.33	13666.32	44.40	70.24	30.31	60.61	329.98	437.41	4.07	
14100.00	10196.73	13766.32	44.41	71.97	30.95	61.88	327.14	437.17	3.97	
14200.00	10196.14	13866.32	44.42	73.71	31.58	63.16	324.28	436.93	3.88	
14300.00	10195.55	13966.32	44.43	75.45	32.23	64.44	321.41	436.69	3.79	
14400.00	10194.96	14066.32	44.44	77.20	32.87	65.73	318.54	436.45	3.70	
14500.00	10194.36	14166.32	44.46	78.95	33.52	67.03	315.66	436.20	3.62	
14600.00	10193.77	14266.32	44.47	80.70	34.18	68.34	312.78	435.96	3.54	
14700.00	10193.18	14366.32	44.48	82.46	34.83	69.65	309.88	435.72	3.46	
14800.00	10192.59	14466.32	44.49	84.22	35.49	70.97	306.98	435.48	3.39	
14900.00	10191.99	14566.32	44.51	85.98	36.16	72.30	304.08	435.24	3.32	
15000.00	10191.40	14666.32	44.52	87.75	36.82	73.63	301.16	434.99	3.25	
15066.24	10191.01	14732.56	44.53	88.92	37.26	74.51	299.23	434.83	3.21	

**Weatherford**

Weatherford Drilling Services

GeoDec4 v2.1.0.0

Report Date: July 22, 2015
Job Number: _____
Customer: Devon Energy
Well Name: Cotton Draw Unit 290H
API Number: _____
Rig Name: _____
Location: Eddy Co, NM Nad83 NME
Block: _____
Engineer: RWJ

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: 429945.43 US Survey Foot	Latitude: 32.180539 Degree
East: 729283.92 US Survey Foot	Longitude: -103.725843 Degree
Convergence: 0.32°	
Declination: 7.32°	
Total Correction: 7.00°	
Datum Transformation: none	

Geodetic Location WGS84

MSL Elevation = 0 m
Latitude = 32° 10' 49.94" N
Longitude = 103° 43' 33.03" W

Magnetic Declination = 7.32 deg	[True North Offset]
Local Gravity = .9988 g	Checksum = 6516
Local Field Strength = 48168 nT	Magnetic Vector X = 23841 nT
Magnetic Dip = 60.06 deg	Magnetic Vector Y = 3061 nT
Magnetic Model = bggm2015.dat	Magnetic Vector Z = 41741 nT
Run Date = October 15, 2015	Magnetic Vector H = 24037 nT

Signed: _____ Date: _____

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