

PETROLEUM DEVELOPMENT CORP Weld County CO

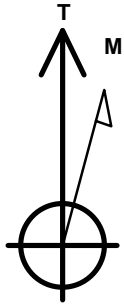
Well Name: **Tracy 14P-432**

Surface Location: Tracy 14P-432 Pad Sec.14-T7N-R66W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4900.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1451173.54	3210152.91	40.569410	-104.743540	
RKB - 15' WELL @ 4915.0ft (RKB - 15')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
Half Section 460' Setback	1.0	-465.0	134.2	Polygon
Half Section Line	1.0	-465.0	-325.9	Polygon
SHL 465'FSL & 2296'FEL, Sec.14	1.0	0.0	0.0	Point
BHL 1080'FSL & 5'FEL, Sec.13	7408.0	642.4	7689.9	Point



Azimuths to True North
Magnetic North: 8.56°

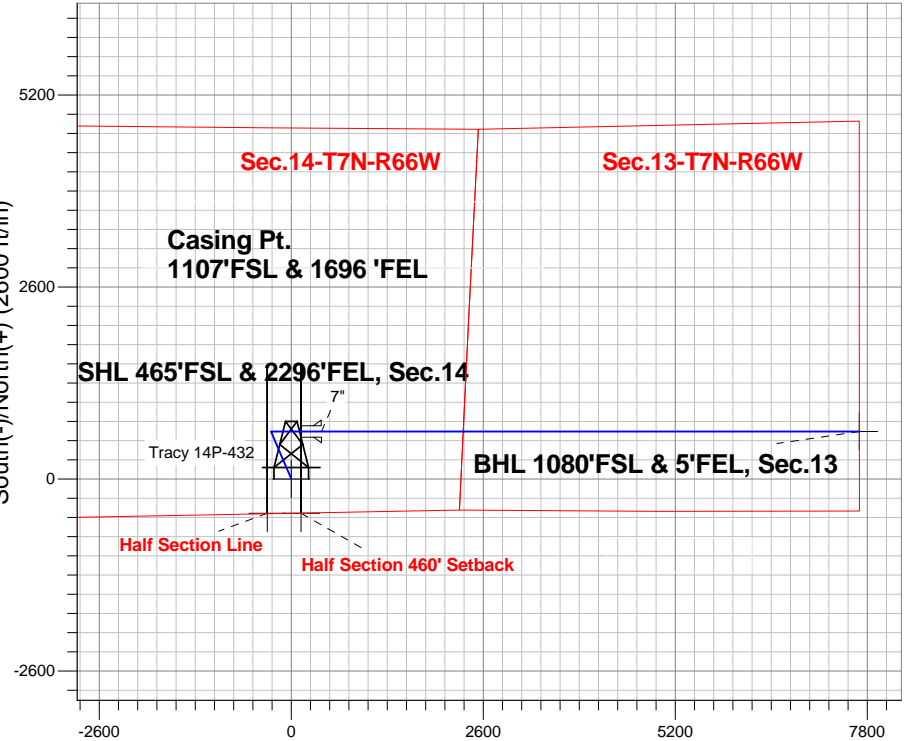
Magnetic Field
Strength: 52983.8snT
Dip Angle: 67.11°
Date: 9/16/2013
Model: IGRF2010

ANNOTATIONS

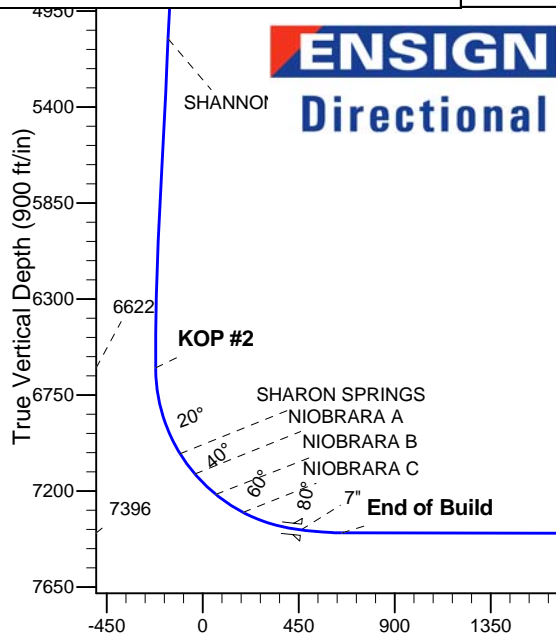
TVD	MD	Annotation
1500.0	1500.0	KOP #1
6621.8	6673.3	KOP #2
7395.6	7985.3	End of Build

Tracy 14P-432 Pad Sec.14-T7N-R66W
Tracy 14P-432
Plan #1 (9-16-13)
15:24, September 19 2013

South(-)/North(+) (2600 ft/in)



West(-)/East(+) (2600 ft/in)



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	Target	VSec
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
3	1935.0	8.70	336.81	1933.3	30.3	-13.0	2.00	336.81	-10.4	
4	6116.4	8.70	336.81	6066.7	611.7	-262.0	0.00	0.00	-210.2	
5	6551.5	0.00	0.00	6500.0	642.0	-275.0	2.00	180.00	-220.6	
6	6673.3	0.00	0.00	6621.9	642.0	-275.0	0.00	0.00	-220.6	
7	7793.3	84.00	90.00	7381.6	642.0	409.1	7.50	90.00	461.1	
8	7867.3	84.00	90.00	7389.4	642.0	482.7	0.00	0.00	534.5	
9	7985.3	89.90	90.00	7395.6	642.0	600.5	5.00	0.00	651.8	
10	15074.8	89.90	90.00	7408.0	642.4	7689.9	0.00	0.00	7716.7	BHL 1080'FSL & 5'FEL, Sec.13

BHL 1080'FSL & 5'FEL, Sec.13

Vertical Section at 85.22° (900 ft/in)



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.14-T7N-R66W

Tracy 14P-432 Pad Sec.14-T7N-R66W

Tracy 14P-432

Wellbore #1

Plan: Plan #1 (9-16-13)

Standard Planning Report

19 September, 2013

Database:	Landmark	Local Co-ordinate Reference:	Well Tracy 14P-432
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4915.0ft (RKB - 15')
Project:	SEC.14-T7N-R66W	MD Reference:	WELL @ 4915.0ft (RKB - 15')
Site:	Tracy 14P-432 Pad Sec.14-T7N-R66W	North Reference:	True
Well:	Tracy 14P-432	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-16-13)		

Project	SEC.14-T7N-R66W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Tracy 14P-432 Pad Sec.14-T7N-R66W				
Site Position:		Northing:	1,451,173.54 ft	Latitude:	40.569410
From:	Lat/Long	Easting:	3,210,152.91 ft	Longitude:	-104.743540
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.49 °

Well	Tracy 14P-432					
Well Position	+N/-S	0.0 ft	Northing:	1,451,173.54 ft	Latitude:	40.569410
	+E/-W	0.0 ft	Easting:	3,210,152.91 ft	Longitude:	-104.743540
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,900.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/16/2013	8.56	67.11	52,984

Design	Plan #1 (9-16-13)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	85.22

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,935.0	8.70	336.81	1,933.3	30.3	-13.0	2.00	2.00	0.00	336.81	
6,116.4	8.70	336.81	6,066.7	611.7	-262.0	0.00	0.00	0.00	0.00	
6,551.5	0.00	0.00	6,500.0	642.0	-275.0	2.00	-2.00	0.00	180.00	
6,673.3	0.00	0.00	6,621.9	642.0	-275.0	0.00	0.00	0.00	0.00	
7,793.3	84.00	90.00	7,381.6	642.0	409.1	7.50	7.50	0.00	90.00	
7,867.3	84.00	90.00	7,389.4	642.0	482.7	0.00	0.00	0.00	0.00	
7,985.3	89.90	90.00	7,395.6	642.0	600.5	5.00	5.00	0.00	0.00	
15,074.8	89.90	90.00	7,408.0	642.4	7,689.9	0.00	0.00	0.00	0.00	BHL 1080'FSL & 5'I

Database:	Landmark	Local Co-ordinate Reference:	Well Tracy 14P-432
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4915.0ft (RKB - 15')
Project:	SEC.14-T7N-R66W	MD Reference:	WELL @ 4915.0ft (RKB - 15')
Site:	Tracy 14P-432 Pad Sec.14-T7N-R66W	North Reference:	True
Well:	Tracy 14P-432	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-16-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,600.0	2.00	336.81	1,600.0	1.6	-0.7	-0.6	2.00	2.00	0.00
1,700.0	4.00	336.81	1,699.8	6.4	-2.7	-2.2	2.00	2.00	0.00
1,800.0	6.00	336.81	1,799.5	14.4	-6.2	-5.0	2.00	2.00	0.00
1,900.0	8.00	336.81	1,898.7	25.6	-11.0	-8.8	2.00	2.00	0.00
1,935.0	8.70	336.81	1,933.3	30.3	-13.0	-10.4	2.00	2.00	0.00
2,000.0	8.70	336.81	1,997.6	39.3	-16.9	-13.5	0.00	0.00	0.00
2,100.0	8.70	336.81	2,096.4	53.2	-22.8	-18.3	0.00	0.00	0.00
2,200.0	8.70	336.81	2,195.3	67.1	-28.8	-23.1	0.00	0.00	0.00
2,300.0	8.70	336.81	2,294.1	81.1	-34.7	-27.8	0.00	0.00	0.00
2,400.0	8.70	336.81	2,393.0	95.0	-40.7	-32.6	0.00	0.00	0.00
2,500.0	8.70	336.81	2,491.8	108.9	-46.6	-37.4	0.00	0.00	0.00
2,600.0	8.70	336.81	2,590.7	122.8	-52.6	-42.2	0.00	0.00	0.00
2,700.0	8.70	336.81	2,689.5	136.7	-58.5	-47.0	0.00	0.00	0.00
2,800.0	8.70	336.81	2,788.4	150.6	-64.5	-51.7	0.00	0.00	0.00
2,900.0	8.70	336.81	2,887.2	164.5	-70.5	-56.5	0.00	0.00	0.00
3,000.0	8.70	336.81	2,986.1	178.4	-76.4	-61.3	0.00	0.00	0.00
3,100.0	8.70	336.81	3,084.9	192.3	-82.4	-66.1	0.00	0.00	0.00
3,200.0	8.70	336.81	3,183.8	206.2	-88.3	-70.8	0.00	0.00	0.00
3,300.0	8.70	336.81	3,282.6	220.1	-94.3	-75.6	0.00	0.00	0.00
3,400.0	8.70	336.81	3,381.5	234.0	-100.2	-80.4	0.00	0.00	0.00
3,500.0	8.70	336.81	3,480.3	247.9	-106.2	-85.2	0.00	0.00	0.00
3,600.0	8.70	336.81	3,579.2	261.8	-112.1	-90.0	0.00	0.00	0.00
3,700.0	8.70	336.81	3,678.0	275.7	-118.1	-94.7	0.00	0.00	0.00
3,800.0	8.70	336.81	3,776.9	289.6	-124.1	-99.5	0.00	0.00	0.00
3,900.0	8.70	336.81	3,875.7	303.5	-130.0	-104.3	0.00	0.00	0.00
3,904.3	8.70	336.81	3,880.0	304.1	-130.3	-104.5	0.00	0.00	0.00
PARKMAN									
4,000.0	8.70	336.81	3,974.6	317.4	-136.0	-109.1	0.00	0.00	0.00
4,100.0	8.70	336.81	4,073.4	331.3	-141.9	-113.8	0.00	0.00	0.00
4,200.0	8.70	336.81	4,172.3	345.2	-147.9	-118.6	0.00	0.00	0.00
4,300.0	8.70	336.81	4,271.1	359.1	-153.8	-123.4	0.00	0.00	0.00
4,400.0	8.70	336.81	4,370.0	373.0	-159.8	-128.2	0.00	0.00	0.00
4,450.6	8.70	336.81	4,420.0	380.1	-162.8	-130.6	0.00	0.00	0.00
SUSSEX									
4,500.0	8.70	336.81	4,468.8	386.9	-165.7	-133.0	0.00	0.00	0.00
4,600.0	8.70	336.81	4,567.7	400.8	-171.7	-137.7	0.00	0.00	0.00

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Project:	SEC.14-T7N-R66W	MD Reference:	WELL @ 4915.0ft (RKB - 15')
Site:	Tracy 14P-432 Pad Sec.14-T7N-R66W	North Reference:	True
Well:	Tracy 14P-432	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-16-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,700.0	8.70	336.81	4,666.5	414.8	-177.7	-142.5	0.00	0.00	0.00
4,800.0	8.70	336.81	4,765.4	428.7	-183.6	-147.3	0.00	0.00	0.00
4,900.0	8.70	336.81	4,864.2	442.6	-189.6	-152.1	0.00	0.00	0.00
5,000.0	8.70	336.81	4,963.1	456.5	-195.5	-156.8	0.00	0.00	0.00
5,100.0	8.70	336.81	5,061.9	470.4	-201.5	-161.6	0.00	0.00	0.00
5,118.3	8.70	336.81	5,080.0	472.9	-202.6	-162.5	0.00	0.00	0.00
SHANNON									
5,200.0	8.70	336.81	5,160.8	484.3	-207.4	-166.4	0.00	0.00	0.00
5,300.0	8.70	336.81	5,259.6	498.2	-213.4	-171.2	0.00	0.00	0.00
5,400.0	8.70	336.81	5,358.5	512.1	-219.4	-176.0	0.00	0.00	0.00
5,500.0	8.70	336.81	5,457.3	526.0	-225.3	-180.7	0.00	0.00	0.00
5,600.0	8.70	336.81	5,556.2	539.9	-231.3	-185.5	0.00	0.00	0.00
5,700.0	8.70	336.81	5,655.0	553.8	-237.2	-190.3	0.00	0.00	0.00
5,800.0	8.70	336.81	5,753.9	567.7	-243.2	-195.1	0.00	0.00	0.00
5,900.0	8.70	336.81	5,852.7	581.6	-249.1	-199.8	0.00	0.00	0.00
6,000.0	8.70	336.81	5,951.6	595.5	-255.1	-204.6	0.00	0.00	0.00
6,100.0	8.70	336.81	6,050.4	609.4	-261.0	-209.4	0.00	0.00	0.00
6,116.4	8.70	336.81	6,066.7	611.7	-262.0	-210.2	0.00	0.00	0.00
6,200.0	7.03	336.81	6,149.4	622.2	-266.5	-213.8	2.00	-2.00	0.00
6,300.0	5.03	336.81	6,248.9	631.9	-270.7	-217.1	2.00	-2.00	0.00
6,400.0	3.03	336.81	6,348.6	638.3	-273.4	-219.3	2.00	-2.00	0.00
6,500.0	1.03	336.81	6,448.6	641.6	-274.8	-220.5	2.00	-2.00	0.00
6,551.5	0.00	0.00	6,500.0	642.0	-275.0	-220.6	2.00	-2.00	0.00
6,600.0	0.00	0.00	6,548.5	642.0	-275.0	-220.6	0.00	0.00	0.00
6,673.3	0.00	0.00	6,621.8	642.0	-275.0	-220.6	0.00	0.00	0.00
KOP #2									
6,700.0	2.00	90.00	6,648.5	642.0	-274.5	-220.1	7.50	7.50	0.00
6,800.0	9.50	90.00	6,748.0	642.0	-264.5	-210.2	7.50	7.50	0.00
6,900.0	17.00	90.00	6,845.2	642.0	-241.6	-187.3	7.50	7.50	0.00
7,000.0	24.50	90.00	6,938.7	642.0	-206.2	-152.0	7.50	7.50	0.00
7,098.0	31.85	90.00	7,025.0	642.0	-160.0	-106.0	7.50	7.50	0.00
SHARON SPRINGS									
7,100.0	32.00	90.00	7,026.7	642.0	-158.9	-104.9	7.50	7.50	0.00
7,200.0	39.50	90.00	7,107.8	642.0	-100.5	-46.7	7.50	7.50	0.00
7,215.9	40.70	90.00	7,120.0	642.0	-90.2	-36.5	7.50	7.50	0.00
NIOBRARA A									
7,300.0	47.00	90.00	7,180.6	642.0	-32.0	21.5	7.50	7.50	0.00
7,352.4	50.93	90.00	7,215.0	642.0	7.5	60.9	7.50	7.50	0.00
NIOBRARA B									
7,400.0	54.50	90.00	7,243.8	642.0	45.3	98.6	7.50	7.50	0.00
7,500.0	62.00	90.00	7,296.4	642.0	130.3	183.3	7.50	7.50	0.00
7,507.8	62.58	90.00	7,300.0	642.0	137.2	190.2	7.50	7.50	0.00
NIOBRARA C									
7,600.0	69.50	90.00	7,337.4	642.0	221.4	274.1	7.50	7.50	0.00
7,700.0	77.00	90.00	7,366.2	642.0	317.1	369.5	7.50	7.50	0.00
7,793.3	84.00	90.00	7,381.6	642.0	409.1	461.1	7.50	7.50	0.00
7"									
7,800.0	84.00	90.00	7,382.3	642.0	415.7	467.8	0.01	0.01	0.00
7,867.3	84.00	90.00	7,389.4	642.0	482.7	534.5	0.00	0.00	0.00
7,900.0	85.63	90.00	7,392.3	642.0	515.2	566.9	5.00	5.00	0.00
7,985.3	89.90	90.00	7,395.6	642.0	600.5	651.8	5.00	5.00	0.00
End of Build									

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Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4915.0ft (RKB - 15')
Project:	SEC.14-T7N-R66W	MD Reference:	WELL @ 4915.0ft (RKB - 15')
Site:	Tracy 14P-432 Pad Sec.14-T7N-R66W	North Reference:	True
Well:	Tracy 14P-432	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-16-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,000.0	89.90	90.00	7,395.7	642.0	615.2	666.5	0.00	0.00	0.00
8,100.0	89.90	90.00	7,395.8	642.1	715.2	766.1	0.00	0.00	0.00
8,200.0	89.90	90.00	7,396.0	642.1	815.2	865.8	0.00	0.00	0.00
8,300.0	89.90	90.00	7,396.2	642.1	915.2	965.4	0.00	0.00	0.00
8,400.0	89.90	90.00	7,396.4	642.1	1,015.2	1,065.1	0.00	0.00	0.00
8,500.0	89.90	90.00	7,396.5	642.1	1,115.2	1,164.7	0.00	0.00	0.00
8,600.0	89.90	90.00	7,396.7	642.1	1,215.2	1,264.4	0.00	0.00	0.00
8,700.0	89.90	90.00	7,396.9	642.1	1,315.2	1,364.0	0.00	0.00	0.00
8,800.0	89.90	90.00	7,397.0	642.1	1,415.2	1,463.7	0.00	0.00	0.00
8,900.0	89.90	90.00	7,397.2	642.1	1,515.2	1,563.4	0.00	0.00	0.00
9,000.0	89.90	90.00	7,397.4	642.1	1,615.2	1,663.0	0.00	0.00	0.00
9,100.0	89.90	90.00	7,397.6	642.1	1,715.2	1,762.7	0.00	0.00	0.00
9,200.0	89.90	90.00	7,397.7	642.1	1,815.2	1,862.3	0.00	0.00	0.00
9,300.0	89.90	90.00	7,397.9	642.1	1,915.2	1,962.0	0.00	0.00	0.00
9,400.0	89.90	90.00	7,398.1	642.1	2,015.2	2,061.6	0.00	0.00	0.00
9,500.0	89.90	90.00	7,398.3	642.1	2,115.2	2,161.3	0.00	0.00	0.00
9,600.0	89.90	90.00	7,398.4	642.1	2,215.2	2,260.9	0.00	0.00	0.00
9,700.0	89.90	90.00	7,398.6	642.1	2,315.2	2,360.6	0.00	0.00	0.00
9,800.0	89.90	90.00	7,398.8	642.1	2,415.2	2,460.2	0.00	0.00	0.00
9,900.0	89.90	90.00	7,399.0	642.1	2,515.2	2,559.9	0.00	0.00	0.00
10,000.0	89.90	90.00	7,399.1	642.2	2,615.2	2,659.5	0.00	0.00	0.00
10,100.0	89.90	90.00	7,399.3	642.2	2,715.2	2,759.2	0.00	0.00	0.00
10,200.0	89.90	90.00	7,399.5	642.2	2,815.2	2,858.8	0.00	0.00	0.00
10,300.0	89.90	90.00	7,399.7	642.2	2,915.2	2,958.5	0.00	0.00	0.00
10,400.0	89.90	90.00	7,399.8	642.2	3,015.2	3,058.1	0.00	0.00	0.00
10,500.0	89.90	90.00	7,400.0	642.2	3,115.2	3,157.8	0.00	0.00	0.00
10,600.0	89.90	90.00	7,400.2	642.2	3,215.2	3,257.5	0.00	0.00	0.00
10,700.0	89.90	90.00	7,400.4	642.2	3,315.2	3,357.1	0.00	0.00	0.00
10,800.0	89.90	90.00	7,400.5	642.2	3,415.2	3,456.8	0.00	0.00	0.00
10,900.0	89.90	90.00	7,400.7	642.2	3,515.2	3,556.4	0.00	0.00	0.00
11,000.0	89.90	90.00	7,400.9	642.2	3,615.2	3,656.1	0.00	0.00	0.00
11,100.0	89.90	90.00	7,401.1	642.2	3,715.2	3,755.7	0.00	0.00	0.00
11,200.0	89.90	90.00	7,401.2	642.2	3,815.2	3,855.4	0.00	0.00	0.00
11,300.0	89.90	90.00	7,401.4	642.2	3,915.2	3,955.0	0.00	0.00	0.00
11,400.0	89.90	90.00	7,401.6	642.2	4,015.2	4,054.7	0.00	0.00	0.00
11,500.0	89.90	90.00	7,401.8	642.2	4,115.2	4,154.3	0.00	0.00	0.00
11,600.0	89.90	90.00	7,401.9	642.2	4,215.2	4,254.0	0.00	0.00	0.00
11,700.0	89.90	90.00	7,402.1	642.2	4,315.2	4,353.6	0.00	0.00	0.00
11,800.0	89.90	90.00	7,402.3	642.2	4,415.2	4,453.3	0.00	0.00	0.00
11,900.0	89.90	90.00	7,402.5	642.3	4,515.2	4,552.9	0.00	0.00	0.00
12,000.0	89.90	90.00	7,402.6	642.3	4,615.2	4,652.6	0.00	0.00	0.00
12,100.0	89.90	90.00	7,402.8	642.3	4,715.2	4,752.3	0.00	0.00	0.00
12,200.0	89.90	90.00	7,403.0	642.3	4,815.2	4,851.9	0.00	0.00	0.00
12,300.0	89.90	90.00	7,403.2	642.3	4,915.2	4,951.6	0.00	0.00	0.00
12,400.0	89.90	90.00	7,403.3	642.3	5,015.2	5,051.2	0.00	0.00	0.00
12,500.0	89.90	90.00	7,403.5	642.3	5,115.1	5,150.9	0.00	0.00	0.00
12,600.0	89.90	90.00	7,403.7	642.3	5,215.1	5,250.5	0.00	0.00	0.00
12,700.0	89.90	90.00	7,403.9	642.3	5,315.1	5,350.2	0.00	0.00	0.00
12,800.0	89.90	90.00	7,404.0	642.3	5,415.1	5,449.8	0.00	0.00	0.00
12,900.0	89.90	90.00	7,404.2	642.3	5,515.1	5,549.5	0.00	0.00	0.00
13,000.0	89.90	90.00	7,404.4	642.3	5,615.1	5,649.1	0.00	0.00	0.00
13,100.0	89.90	90.00	7,404.6	642.3	5,715.1	5,748.8	0.00	0.00	0.00
13,200.0	89.90	90.00	7,404.7	642.3	5,815.1	5,848.4	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Tracy 14P-432
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4915.0ft (RKB - 15')
Project:	SEC.14-T7N-R66W	MD Reference:	WELL @ 4915.0ft (RKB - 15')
Site:	Tracy 14P-432 Pad Sec.14-T7N-R66W	North Reference:	True
Well:	Tracy 14P-432	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-16-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,300.0	89.90	90.00	7,404.9	642.3	5,915.1	5,948.1	0.00	0.00	0.00
13,400.0	89.90	90.00	7,405.1	642.3	6,015.1	6,047.7	0.00	0.00	0.00
13,500.0	89.90	90.00	7,405.3	642.3	6,115.1	6,147.4	0.00	0.00	0.00
13,600.0	89.90	90.00	7,405.4	642.3	6,215.1	6,247.0	0.00	0.00	0.00
13,700.0	89.90	90.00	7,405.6	642.3	6,315.1	6,346.7	0.00	0.00	0.00
13,800.0	89.90	90.00	7,405.8	642.3	6,415.1	6,446.4	0.00	0.00	0.00
13,900.0	89.90	90.00	7,405.9	642.4	6,515.1	6,546.0	0.00	0.00	0.00
14,000.0	89.90	90.00	7,406.1	642.4	6,615.1	6,645.7	0.00	0.00	0.00
14,100.0	89.90	90.00	7,406.3	642.4	6,715.1	6,745.3	0.00	0.00	0.00
14,200.0	89.90	90.00	7,406.5	642.4	6,815.1	6,845.0	0.00	0.00	0.00
14,300.0	89.90	90.00	7,406.6	642.4	6,915.1	6,944.6	0.00	0.00	0.00
14,400.0	89.90	90.00	7,406.8	642.4	7,015.1	7,044.3	0.00	0.00	0.00
14,500.0	89.90	90.00	7,407.0	642.4	7,115.1	7,143.9	0.00	0.00	0.00
14,600.0	89.90	90.00	7,407.2	642.4	7,215.1	7,243.6	0.00	0.00	0.00
14,700.0	89.90	90.00	7,407.3	642.4	7,315.1	7,343.2	0.00	0.00	0.00
14,800.0	89.90	90.00	7,407.5	642.4	7,415.1	7,442.9	0.00	0.00	0.00
14,900.0	89.90	90.00	7,407.7	642.4	7,515.1	7,542.5	0.00	0.00	0.00
15,000.0	89.90	90.00	7,407.9	642.4	7,615.1	7,642.2	0.00	0.00	0.00
15,074.8	89.90	90.00	7,408.0	642.4	7,689.9	7,716.7	0.00	0.00	0.00

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,793.3	7,381.6	7"	7	7-1/2

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,904.3	3,880.0	PARKMAN		0.00	
4,450.6	4,420.0	SUSSEX		0.00	
5,118.3	5,080.0	SHANNON		0.00	
7,098.0	7,025.0	SHARON SPRINGS		0.00	
7,215.9	7,120.0	NIOBRARA A		0.00	
7,352.4	7,215.0	NIOBRARA B		0.00	
7,507.8	7,300.0	NIOBRARA C		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
1,500.0	1,500.0	0.0	0.0	KOP #1
6,673.3	6,621.8	642.0	-275.0	KOP #2
7,985.3	7,395.6	642.0	600.5	End of Build