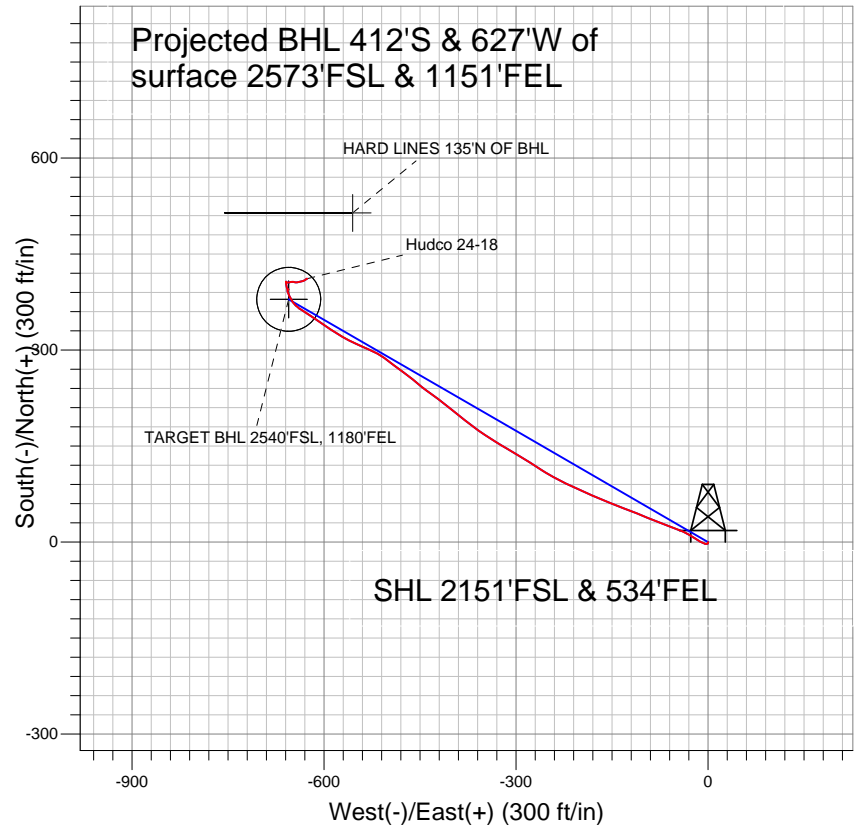


Anadarko, Weld County CO



LEGEND

- △ Hudco 24-18, Wellbore #1, Plan #1 (3-15-11) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
8052'MD & 7971'TVD @ 749'VS
0.4 deg Inc 68.6 deg AZ

Project: SEC.18-T2N-R65W
Site: Hudco 9-18 Pad Sec.18-T2N-R65W
Well: Hudco 24-18
Plan: Wellbore #1



Directional

Anadarko, Weld County CO

SEC.18-T2N-R65W

Hudco 9-18 Pad Sec.18-T2N-R65W

Hudco 24-18

Wellbore #1

Survey: Survey #1

Standard Survey Report

09 August, 2011

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Hudco 24-18
Project:	SEC.18-T2N-R65W	TVD Reference:	WELL @ 4996.0ft (Original Well Elev)
Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 4996.0ft (Original Well Elev)
Well:	Hudco 24-18	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.18-T2N-R65W, Weld County, Colorado		
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	Hudco 9-18 Pad Sec.18-T2N-R65W				
Site Position:		Northing:	1,293,849.26ft	Latitude:	40.137235
From:	Lat/Long	Easting:	3,223,888.30ft	Longitude:	-104.699215
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.52 °

Well	Hudco 24-18					
Well Position	+N/-S	0.0 ft	Northing:	1,293,849.24 ft	Latitude:	40.137235
	+E/-W	0.0 ft	Easting:	3,223,888.30 ft	Longitude:	-104.699215
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,982.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/16/2011	8.84	66.86	53,025

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	300.06	

Survey Program	Date	8/9/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
144.0	8,052.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

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	
144.0	0.90	192.00	144.0	-1.1	-0.2	-0.4	0.63	0.63	0.00	
233.0	0.40	189.40	233.0	-2.1	-0.4	-0.7	0.56	-0.56	-2.92	
324.0	0.40	259.70	324.0	-2.5	-0.8	-0.5	0.51	0.00	77.25	
415.0	0.30	250.00	415.0	-2.6	-1.3	-0.2	0.13	-0.11	-10.66	
507.0	0.40	254.60	507.0	-2.8	-1.9	0.2	0.11	0.11	5.00	
599.0	0.40	242.60	599.0	-3.0	-2.5	0.6	0.09	0.00	-13.04	
691.0	1.10	272.20	691.0	-3.1	-3.6	1.6	0.85	0.76	32.17	
783.0	1.20	297.10	783.0	-2.6	-5.4	3.3	0.55	0.11	27.07	
875.0	1.10	291.00	874.9	-1.9	-7.1	5.2	0.17	-0.11	-6.63	
908.0	1.10	295.20	907.9	-1.6	-7.6	5.8	0.24	0.00	12.73	
980.0	0.40	311.40	979.9	-1.2	-8.4	6.7	1.01	-0.97	22.50	
1,075.0	2.60	291.80	1,074.9	-0.2	-10.7	9.2	2.34	2.32	-20.63	

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Hudco 24-18
Project:	SEC.18-T2N-R65W	TVD Reference:	WELL @ 4996.0ft (Original Well Elev)
Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 4996.0ft (Original Well Elev)
Well:	Hudco 24-18	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
1,170.0	4.50	301.70	1,169.7	2.6	-15.9	15.0	2.09	2.00	10.42
1,265.0	7.10	303.40	1,264.2	7.8	-23.9	24.6	2.74	2.74	1.79
1,360.0	8.70	297.50	1,358.3	14.3	-35.2	37.7	1.89	1.68	-6.21
1,456.0	11.00	289.20	1,452.9	20.7	-50.3	53.9	2.81	2.40	-8.65
1,551.0	13.10	291.80	1,545.8	27.7	-68.9	73.5	2.28	2.21	2.74
1,646.0	14.30	291.80	1,638.1	36.0	-89.8	95.7	1.26	1.26	0.00
1,741.0	13.90	291.50	1,730.2	44.6	-111.3	118.6	0.43	-0.42	-0.32
1,836.0	14.60	291.80	1,822.3	53.2	-133.0	141.8	0.74	0.74	0.32
1,931.0	14.20	291.00	1,914.3	61.8	-155.0	165.1	0.47	-0.42	-0.84
2,027.0	15.00	293.80	2,007.2	71.1	-177.4	189.1	1.11	0.83	2.92
2,122.0	14.60	294.70	2,099.1	81.0	-199.5	213.2	0.49	-0.42	0.95
2,217.0	13.80	295.40	2,191.2	90.9	-220.6	236.5	0.86	-0.84	0.74
2,313.0	13.80	297.50	2,284.4	101.1	-241.1	259.3	0.52	0.00	2.19
2,409.0	12.70	303.30	2,377.8	112.2	-260.1	281.3	1.80	-1.15	6.04
2,505.0	13.60	302.60	2,471.3	124.0	-278.4	303.1	0.95	0.94	-0.73
2,600.0	12.80	302.00	2,563.8	135.6	-296.7	324.8	0.85	-0.84	-0.63
2,695.0	12.50	298.90	2,656.5	146.2	-314.7	345.6	0.78	-0.32	-3.26
2,790.0	12.00	304.00	2,749.3	156.7	-331.9	365.7	1.25	-0.53	5.37
2,886.0	12.20	301.00	2,843.2	167.5	-348.8	385.8	0.69	0.21	-3.13
2,981.0	12.80	308.40	2,936.0	179.2	-365.7	406.2	1.80	0.63	7.79
3,076.0	13.00	308.40	3,028.6	192.4	-382.3	427.2	0.21	0.21	0.00
3,171.0	12.80	308.70	3,121.2	205.6	-398.9	448.2	0.22	-0.21	0.32
3,266.0	12.60	307.80	3,213.8	218.5	-415.3	468.9	0.30	-0.21	-0.95
3,362.0	12.50	304.90	3,307.5	230.9	-432.1	489.6	0.66	-0.10	-3.02
3,457.0	11.00	309.60	3,400.6	242.5	-447.5	508.8	1.87	-1.58	4.95
3,552.0	11.20	309.30	3,493.8	254.2	-461.6	526.8	0.22	0.21	-0.32
3,647.0	11.00	305.70	3,587.0	265.3	-476.1	545.0	0.76	-0.21	-3.79
3,742.0	11.60	306.80	3,680.2	276.3	-491.1	563.5	0.67	0.63	1.16
3,837.0	11.50	307.00	3,773.2	287.7	-506.3	582.4	0.11	-0.11	0.21
3,932.0	11.70	294.50	3,866.3	297.4	-522.7	601.3	2.65	0.21	-13.16
4,027.0	13.10	293.10	3,959.1	305.6	-541.3	621.6	1.51	1.47	-1.47
4,123.0	13.20	297.60	4,052.6	315.0	-561.1	643.4	1.07	0.10	4.69
4,218.0	13.00	302.60	4,145.1	325.8	-579.7	664.9	1.21	-0.21	5.26
4,313.0	12.10	303.60	4,237.8	337.0	-597.0	685.5	0.97	-0.95	1.05
4,408.0	11.00	304.30	4,330.9	347.6	-612.7	704.5	1.17	-1.16	0.74
4,503.0	8.00	304.00	4,424.6	356.4	-625.7	720.1	3.16	-3.16	-0.32
4,598.0	6.90	302.20	4,518.8	363.2	-636.0	732.4	1.18	-1.16	-1.89
4,693.0	5.20	314.50	4,613.3	369.2	-643.9	742.3	2.24	-1.79	12.95
4,789.0	5.20	324.00	4,708.9	375.8	-649.6	750.5	0.90	0.00	9.90
4,884.0	4.70	338.10	4,803.5	382.9	-653.6	757.5	1.38	-0.53	14.84
4,979.0	3.20	335.40	4,898.3	388.9	-656.1	762.7	1.59	-1.58	-2.84
5,074.0	1.40	351.40	4,993.2	392.5	-657.4	765.6	1.99	-1.89	16.84
5,080.5	1.35	355.68	4,999.8	392.6	-657.4	765.7	1.73	-0.74	65.38
TARGET BHL 2540'FSL, 1180'FEL									
5,169.0	1.60	57.60	5,088.2	394.3	-656.5	765.7	1.73	0.28	70.00
5,264.0	0.40	212.60	5,183.2	394.8	-655.5	765.1	2.07	-1.26	163.16
5,359.0	0.40	272.70	5,278.2	394.5	-656.0	765.4	0.42	0.00	63.26
5,454.0	0.50	282.50	5,373.2	394.6	-656.8	766.1	0.13	0.11	10.32
5,549.0	0.90	335.60	5,468.2	395.4	-657.5	767.1	0.76	0.42	55.89
5,644.0	1.10	343.70	5,563.2	396.9	-658.0	768.4	0.26	0.21	8.53
5,739.0	1.50	345.60	5,658.1	399.0	-658.6	769.9	0.42	0.42	2.00
5,835.0	2.00	353.70	5,754.1	401.9	-659.1	771.8	0.58	0.52	8.44
5,930.0	1.80	351.30	5,849.0	405.0	-659.5	773.7	0.23	-0.21	-2.53
6,025.0	0.20	30.80	5,944.0	406.6	-659.6	774.6	1.74	-1.68	41.58

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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)
6,120.0	0.40	155.60	6,039.0	406.5	-659.4	774.3	0.57	0.21	131.37
6,215.0	0.40	138.00	6,134.0	405.9	-659.1	773.8	0.13	0.00	-18.53
6,311.0	0.50	93.20	6,230.0	405.7	-658.4	773.1	0.37	0.10	-46.67
6,406.0	0.70	98.00	6,325.0	405.6	-657.4	772.2	0.22	0.21	5.05
6,501.0	0.80	87.60	6,420.0	405.5	-656.2	771.1	0.18	0.11	-10.95
6,596.0	0.80	79.50	6,515.0	405.7	-654.9	770.0	0.12	0.00	-8.53
6,691.0	1.50	76.30	6,610.0	406.1	-653.0	768.6	0.74	0.74	-3.37
6,786.0	1.60	78.40	6,704.9	406.6	-650.5	766.7	0.12	0.11	2.21
6,882.0	1.60	109.00	6,800.9	406.5	-647.9	764.4	0.88	0.00	31.88
6,977.0	1.70	94.40	6,895.9	405.9	-645.3	761.8	0.45	0.11	-15.37
7,072.0	1.80	83.40	6,990.8	406.0	-642.4	759.4	0.37	0.11	-11.58
7,167.0	1.60	82.10	7,085.8	406.3	-639.6	757.1	0.21	-0.21	-1.37
7,172.7	1.59	81.73	7,091.4	406.4	-639.4	757.0	0.22	-0.12	-6.53
TARGET CIRCLE 2540'FSL & 1180'FEL									
7,262.0	1.50	75.50	7,180.7	406.8	-637.1	755.2	0.22	-0.10	-6.97
7,357.0	1.30	75.10	7,275.7	407.4	-634.8	753.5	0.21	-0.21	-0.42
7,453.0	1.10	76.30	7,371.7	407.9	-632.9	752.1	0.21	-0.21	1.25
7,548.0	1.00	63.00	7,466.7	408.5	-631.3	751.0	0.28	-0.11	-14.00
7,643.0	0.80	54.20	7,561.7	409.3	-630.0	750.3	0.26	-0.21	-9.26
7,738.0	0.80	48.00	7,656.7	410.1	-629.0	749.8	0.09	0.00	-6.53
7,833.0	0.60	45.40	7,751.6	410.9	-628.1	749.5	0.21	-0.21	-2.74
7,928.0	0.40	68.60	7,846.6	411.4	-627.4	749.1	0.30	-0.21	24.42
8,049.1	0.40	68.60	7,967.7	411.7	-626.7	748.6	0.00	0.00	0.00
HARD LINES 135'N OF BHL									
8,052.0	0.40	68.60	7,970.6	411.7	-626.6	748.6	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____