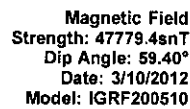


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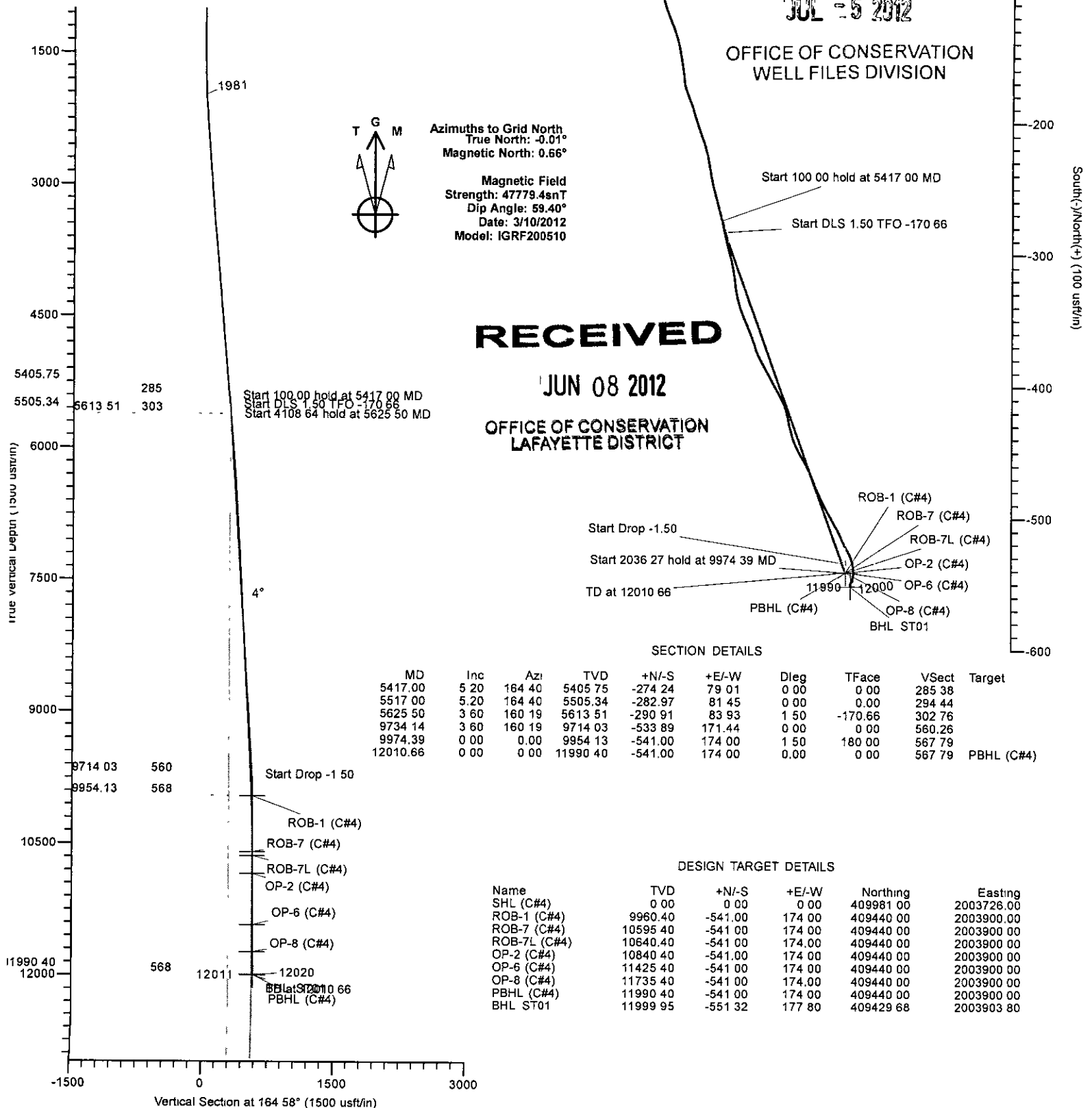
Duck lake



OFFICE OF CONSERVATION
WELL FILES DIVISION



OFFICE OF CONSERVATION
LAFAYETTE DISTRICT

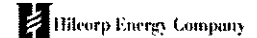


LEAM DRILLING SYSTEMS, INC.
2010 East Davis, Conroe, Texas 77301
Phone: 936/756-7577 Fax 936/756-7595

Plan Plan #3 (#4/ST01)
Goodnch C
Created By David Vogler Date 6 40, March 20 2012
Date

Leam Drilling Systems, Inc.

Survey Report



Company: HILCORP ENERGY COMPANY
 Project: St. Martin Parish, LA
 Site: Goodrich C
 Well: #4
 Wellbore: ST01
 Design: ST01

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:
 Database:

Well #4
 GL 0' + KB 30.4' @ 30.40usft (Axxis Liberty)
 GL 0' + KB 30.4' @ 30.40usft (Axxis Liberty)
 Grid
 Minimum Curvature
 EDM 5000.1 Single User Db

OFFICE OF CONSERVATION

Project	St. Martin Parish, LA		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Louisiana South 1702		

Site	Goodrich C, Site Centered on the #4				
Site Position:		Northing:	409,981.00 usft	Latitude:	29° 47' 38.724 N
From:	Map	Easting:	2,003,726.00 usft	Longitude:	91° 19' 17.711 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0 01 °

Well	#4					
Well Position	+N/-S	0.00 usft	Northing:	409,981.00 usft	Latitude:	29° 47' 38.724 N
	+E/-W	0.00 usft	Easting:	2,003,726.00 usft	Longitude:	91° 19' 17.711 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	0.00 usft

Wellbore	ST01				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	3/10/2012	0.66	59.40	47,779

Design	ST01				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	1,981.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	164.58	

Survey Program	Date	3/20/2012
From	To	
(usft)	(usft)	Survey (Wellbore)
100.00	1,981.00	Survey #1 (OH)
2,068.00	11,958.00	Survey #1 (ST01)
12,020.00	12,020.00	Survey #2 (ST01)

Tool Name	Description
Gyroscope	Gyroscope
MWD	Std MWD
MWD	Std MWD

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 LAFAYETTE DISTRICT

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BHL - SHL (C#4)									
100.00	0.13	206.60	100.00	-0.10	-0.05	0.08	0.13	0.13	0.00
200.00	0.41	191.81	200.00	-0.55	-0.17	0.49	0.29	0.28	-14.79
300.00	0.20	124.49	300.00	-1.00	-0.10	0.94	0.38	-0.21	-67.32
400.00	0.41	163.20	400.00	-1.44	0.14	1.43	0.28	0.21	38.71
500.00	0.56	178.10	499.99	-2.27	0.26	2.26	0.19	0.15	14.90
600.00	0.56	138.34	599.99	-3.13	0.60	3.18	0.38	0.00	-39.76
700.00	0.47	122.19	699.98	-3.71	1.28	3.92	0.17	-0.09	-16.15

Leam Drilling Systems, Inc.
Survey Report

CEIVE
JUN 08 2012
OFFICE OF CONSERVATION
PAYETTE DISTRICT

Company: HILCORP ENERGY COMPANY
Project: St. Martin Parish, LA
Site: Goodrich C
Well: #4
Wellbore: ST01
Design: ST01

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #4
GL 0' + KB 30.4' @ 30.40usft (Axxis Liberty)
GL 0' + KB 30 4' @ 30 40usft (Axxis Liberty)
Grid
Minimum Curvature
EDM 5000.1 Single User Db

OFFICE OF CONSERVATION
WELL FILES DIVISION

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
800.00	0 10	112.39	799.98	-3 96	1.70	4.27	0.37	-0 37	-9.80
900.00	0 33	138.10	899.98	-4 21	1.98	4.58	0.24	0 23	25.71
1,000.00	0.42	73.41	999.98	-4.32	2 52	4.84	0 41	0 09	-64 69
1,100.00	0.48	54 73	1,099 98	-3.97	3 21	4.69	0 16	0 06	-18.68
1,200 00	0 53	31.29	1,199 97	-3 34	3 80	4 23	0.21	0 05	-23.44
1,300.00	0.15	62 97	1,299 97	-2 88	4 15	3.88	0.41	-0 38	31.68
1,400 00	0.41	144 74	1,399.97	-3 11	4.48	4.19	0.42	0 26	81 77
1,500 00	0.49	175.66	1,499.97	-3.83	4.71	4 95	0.25	0 08	30.92
1,600 00	0 47	170.72	1,599 96	-4.66	4.81	5 78	0.05	-0.02	-4.94
1,700.00	0 37	164 04	1,699.96	-5.38	4.97	6 51	0.11	-0.10	-6.68
1,800.00	0.59	154 80	1,799 96	-6 16	5 28	7.34	0 23	0.22	-9.24
1,981.00	2.90	173.00	1,980 86	-11.54	6.23	12.79	1 30	1 28	10 06
2,068 00	3.10	175 00	2,067.74	-16.07	6 70	17.28	0 26	0 23	2 30
2,161 00	3.90	160.70	2,160.57	-21.56	7.97	22 91	1.27	0 86	-15.38
2,253 00	3.80	159.10	2,252.36	-27.36	10 09	29 06	0 16	-0 11	-1.74
2,348.00	4 10	160.00	2,347.14	-33 50	12.37	35 58	0.32	0.32	0.95
2,441 00	4 00	154.60	2,439 91	-39 55	14 90	42 09	0 42	-0 11	-5 81
2,535.00	4 00	156.20	2,533.68	-45 51	17.63	48 56	0.12	0 00	1.70
2,626.00	3.80	164 40	2,624 47	-51 32	19.72	54 72	0.65	-0 22	9 01
2,720.00	4 00	167 90	2,718.25	-57 53	21.25	61.10	0.33	0 21	3.72
2,814 00	3.90	167 20	2,812.03	-63.85	22.64	67.57	0.12	-0 11	-0 74
2,909.00	4.10	164 20	2,906.79	-70.27	24 29	74.19	0 30	0.21	-3 16
3,002 00	4.00	166.20	2,999.56	-76 62	25 96	80 76	0 19	-0 11	2.15
3,093 00	3 50	164.90	3,090 37	-82.38	27 44	86.71	0 56	-0 55	-1.43
3,186 00	4 40	166.50	3,183 15	-88 59	29.02	93 12	0.97	0.97	1 72
3,278.00	5.30	165 50	3,274.81	-96 14	30.90	100 89	0.98	0.98	-1 09
3,371.00	5.30	162.30	3,367 42	-104 39	33.29	109.48	0.32	0 00	-3 44
3,464.00	5.30	162.30	3,460.02	-112.57	35.90	118.06	0.00	0 00	0.00
3,558 00	5 50	157.90	3,553.60	-120 88	38 91	126 87	0 49	0.21	-4.68
3,649.00	5.50	158.30	3,644.18	-128 97	42 17	135 54	0 04	0.00	0 44
3,743 00	5.40	167 10	3,737 76	-137.47	44 82	144.44	0 89	-0.11	9.36
3,836.00	4 70	169.90	3,830 40	-145.49	46.46	152 60	0.80	-0 75	3.01
3,927 00	4.50	170 40	3,921 11	-152.68	47.71	159.87	0.22	-0 22	0.55
4,019.00	4.30	172.50	4,012.83	-159.65	48.77	166.87	0.28	-0 22	2 28
4,111 00	4.30	175.00	4,104.58	-166 51	49.52	173.68	0 20	0 00	2.72
4,205 00	4 60	162.30	4,198 29	-173.61	50 97	180.91	1 09	0 32	-13.51
4,298 00	4 70	158.60	4,290 99	-180.71	53 49	188 43	0 34	0.11	-3 98
4,392.00	4.80	163.40	4,384 67	-188.07	56.02	196.19	0.44	0 11	5.11
4,484.00	4.90	161 10	4,476 34	-195.47	58.39	203.96	0.24	0.11	-2.50
4,577 00	4.70	161 60	4,569.01	-202 85	60 88	211.73	0.22	-0.22	0 54
4,670.00	4 50	158.60	4,661.71	-209.86	63 42	219.17	0.34	-0.22	-3.23
4,763.00	5.00	164.40	4,754 39	-217 16	65.84	226.85	0.74	0 54	6.24
4,856 00	4 90	166.90	4,847.05	-224 93	67.83	234 87	0.26	-0.11	2 69

Leam Drilling Systems, Inc.

Survey Report

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OFFICE OF CONSERVATION
LAFAYETTE DISTRICT

Company: HILCORP ENERGY COMPANY
Project: St. Martin Parish, LA
Site: Goodrich C
Well: #4
Wellbore: ST01
Design: ST01

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #4
GL 0' + KB 30.4' @ 30.40usft (Axxis Liberty)
GL 0' + KB 30.4' @ 30.40usft (Axxis Liberty)
Grid
Minimum Curvature
EDM 5000.1 Single User Db

JUL - 5 2012

OFFICE OF CONSERVATION WELL FILES DIVISION

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,948.00	5.00	170.90	4,938.70	-232.72	69.35	242.78	0.39	0.11	4.35
5,042.00	4.70	170.40	5,032.37	-240.56	70.64	250.68	0.32	-0.32	-0.53
5,135.00	5.40	166.50	5,125.00	-248.57	72.30	258.85	0.84	0.75	-4.19
5,230.00	5.50	163.90	5,219.58	-257.29	74.61	267.87	0.28	0.11	-2.74
5,324.00	5.40	166.70	5,313.15	-265.92	76.87	276.79	0.30	-0.11	2.98
5,417.00	5.20	164.40	5,405.75	-274.24	79.01	285.38	0.31	-0.22	-2.47
5,509.00	4.90	168.30	5,497.40	-282.10	80.93	293.47	0.50	-0.33	4.24
5,602.00	4.70	168.10	5,590.07	-289.72	82.52	301.23	0.22	-0.22	-0.22
5,693.00	4.60	163.20	5,680.77	-296.86	84.35	308.60	0.45	-0.11	-5.38
5,786.00	4.40	166.90	5,773.48	-303.91	86.23	315.90	0.38	-0.22	3.98
5,877.00	4.80	171.60	5,864.19	-311.07	87.58	323.16	0.60	0.44	5.16
5,970.00	4.70	170.90	5,956.87	-318.69	88.75	330.81	0.12	-0.11	-0.75
6,062.00	4.70	174.40	6,048.56	-326.16	89.71	338.27	0.31	0.00	3.80
6,155.00	4.60	164.60	6,141.26	-333.55	91.08	345.76	0.86	-0.11	-10.54
6,249.00	4.30	161.60	6,234.97	-340.52	93.19	353.04	0.40	-0.32	-3.19
6,343.00	4.00	157.00	6,328.73	-346.89	95.58	359.81	0.48	-0.32	-4.89
6,438.00	3.90	158.30	6,423.50	-352.94	98.07	366.31	0.14	-0.11	1.37
6,530.00	3.50	158.60	6,515.31	-358.46	100.25	372.21	0.44	-0.43	0.33
6,624.00	3.30	159.30	6,609.15	-363.66	102.26	377.76	0.22	-0.21	0.74
6,718.00	3.10	160.90	6,703.00	-368.59	104.05	382.99	0.23	-0.21	1.70
6,812.00	2.60	162.70	6,796.88	-373.03	105.51	387.66	0.54	-0.53	1.91
6,906.00	3.50	151.80	6,890.75	-377.60	107.50	392.59	1.13	0.96	-11.60
6,999.00	3.50	150.50	6,983.58	-382.57	110.24	398.11	0.09	0.00	-1.40
7,093.00	3.60	150.70	7,077.40	-387.64	113.10	403.76	0.11	0.11	0.21
7,187.00	3.50	153.30	7,171.21	-392.78	115.83	409.44	0.20	-0.11	2.77
7,280.00	3.10	149.30	7,264.06	-397.47	118.39	414.65	0.50	-0.43	-4.30
7,371.00	3.20	150.40	7,354.92	-401.80	120.90	419.48	0.13	0.11	1.21
7,466.00	3.00	152.10	7,449.78	-406.30	123.37	424.48	0.23	-0.21	1.79
7,559.00	2.90	152.50	7,542.66	-410.54	125.60	429.16	0.11	-0.11	0.43
7,652.00	2.80	161.50	7,635.55	-414.78	127.41	433.72	0.49	-0.11	9.68
7,745.00	2.90	164.00	7,728.43	-419.19	128.78	438.35	0.17	0.11	2.69
7,839.00	2.70	170.30	7,822.32	-423.66	129.80	442.93	0.39	-0.21	6.70
7,932.00	3.30	166.60	7,915.19	-428.43	130.79	447.78	0.68	0.65	-3.98
8,026.00	3.30	169.60	8,009.04	-433.72	131.91	453.18	0.18	0.00	3.19
8,119.00	3.20	159.60	8,101.89	-438.78	133.30	458.43	0.62	-0.11	-10.75
8,212.00	3.20	153.40	8,194.74	-443.54	135.36	463.56	0.37	0.00	-6.67
8,304.00	3.20	155.20	8,286.60	-448.17	137.59	468.62	0.11	0.00	1.96
8,397.00	2.90	149.00	8,379.47	-452.54	139.89	473.44	0.48	-0.32	-6.67
8,491.00	2.70	146.90	8,473.35	-456.43	142.33	477.84	0.24	-0.21	-2.23
8,584.00	3.00	155.20	8,566.24	-460.48	144.54	482.33	0.55	0.32	8.92
8,678.00	3.10	156.80	8,660.11	-465.04	146.58	487.28	0.14	0.11	1.70
8,771.00	3.80	159.00	8,752.94	-470.23	148.67	492.84	0.77	0.75	2.37
8,865.00	3.80	156.90	8,846.73	-476.01	151.01	499.02	0.15	0.00	-2.23
8,957.00	3.80	157.60	8,938.53	-481.63	153.37	505.07	0.05	0.00	0.76

Leam Drilling Systems, Inc.

Survey Report

RECEIVED
JUN 08 2012
OFFICE OF CONSERVATION
LAFFAYETTE DISTRICT

Company: HILCORP ENERGY COMPANY
Project: St. Martin Parish
Site: Goodrich C
Well: #4
Wellbore: ST01
Design: ST01

Local Co-ordinate Reference: Well #4
TVD Reference: GL 0' + KB 30.4' @ 30.40usft (Axxis Liberty)
MD Reference: GL 0' + KB 30.4' @ 30.40usft (Axxis Liberty)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

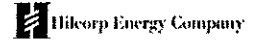
JUL - 5 2012

OFFICE OF CONSERVATION WELL FILES DIVISION

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,050.00	3.40	152.20	9,031.35	-486.92	155.83	510.82	0.56	-0.43	-5.81
9,143.00	3.30	152.70	9,124.19	-491.74	158.34	516.14	0.11	-0.11	0.54
9,235.00	3.30	149.70	9,216.03	-496.37	160.89	521.29	0.19	0.00	-3.26
9,327.00	3.20	152.20	9,307.89	-500.93	163.42	526.35	0.19	-0.11	2.72
9,421.00	2.90	147.40	9,401.75	-505.26	165.93	531.19	0.42	-0.32	-5.11
9,514.00	2.60	150.40	9,494.65	-509.07	168.24	535.48	0.36	-0.32	3.23
9,607.00	2.70	158.30	9,587.55	-512.94	170.09	539.70	0.41	0.11	8.49
9,699.00	2.60	157.10	9,679.45	-516.88	171.70	543.93	0.12	-0.11	-1.30
9,791.00	2.40	151.50	9,771.36	-520.49	173.44	547.87	0.34	-0.22	-6.09
9,885.00	2.40	150.20	9,865.28	-523.93	175.35	551.70	0.06	0.00	-1.38
9,976.00	2.00	151.00	9,956.21	-526.97	177.07	555.08	0.44	-0.44	0.88
9,980.60	2.00	151.64	9,960.80	-527.11	177.15	555.24	0.49	-0.05	13.98
ROB-1 (C#4)									
10,069.00	2.00	164.10	10,049.15	-529.95	178.30	558.28	0.49	0.00	14.09
10,163.00	1.90	169.10	10,143.10	-533.06	179.04	561.48	0.21	-0.11	5.32
10,255.00	1.70	167.30	10,235.06	-535.89	179.63	564.36	0.23	-0.22	-1.96
10,348.00	1.10	178.00	10,328.03	-538.13	179.97	566.61	0.70	-0.65	11.51
10,440.00	1.00	177.30	10,420.01	-539.81	180.04	568.25	0.11	-0.11	-0.76
10,531.00	0.90	182.60	10,511.00	-541.32	180.04	569.70	0.15	-0.11	5.82
10,615.39	0.71	176.24	10,595.38	-542.51	180.05	570.85	0.24	-0.22	-7.54
ROB-7 (C#4)									
10,622.00	0.70	175.60	10,601.99	-542.59	180.05	570.93	0.24	-0.21	-9.67
10,660.40	0.60	186.34	10,640.39	-543.02	180.05	571.34	0.42	-0.27	27.97
ROB-7L (C#4)									
10,714.00	0.50	207.70	10,693.99	-543.50	179.91	571.77	0.42	-0.18	39.85
10,806.00	0.60	190.00	10,785.98	-544.33	179.64	572.50	0.21	0.11	-19.24
10,860.39	0.60	190.18	10,840.37	-544.89	179.54	573.02	0.00	0.00	0.32
OP-2 (C#4)									
10,899.00	0.60	190.30	10,878.98	-545.29	179.47	573.38	0.00	0.00	0.32
10,991.00	0.60	188.20	10,970.97	-546.24	179.31	574.26	0.02	0.00	-2.28
11,082.00	0.40	166.60	11,061.97	-547.02	179.32	575.01	0.30	-0.22	-23.74
11,173.00	0.40	225.70	11,152.97	-547.55	179.16	575.48	0.43	0.00	64.95
11,265.00	0.40	217.40	11,244.96	-548.03	178.74	575.83	0.06	0.00	-9.02
11,356.00	0.10	18.60	11,335.96	-548.21	178.57	575.96	0.54	-0.33	177.14
11,445.43	0.29	210.11	11,425.39	-548.33	178.48	576.05	0.43	0.21	-188.40
OP-6 (C#4)									
11,448.00	0.30	210.00	11,427.96	-548.34	178.48	576.06	0.43	0.43	-4.26
11,541.00	0.20	309.20	11,520.96	-548.45	178.23	576.10	0.42	-0.11	106.67
11,633.00	0.30	184.00	11,612.96	-548.59	178.09	576.19	0.49	0.11	-136.09
11,725.00	0.50	214.60	11,704.96	-549.16	177.84	576.68	0.31	0.22	33.26
11,755.40	0.43	209.43	11,735.36	-549.37	177.71	576.84	0.27	-0.24	-17.02
OP-8 (C#4)									
11,817.00	0.30	191.70	11,796.96	-549.73	177.57	577.15	0.27	-0.21	-28.78
11,912.00	0.40	160.30	11,891.96	-550.28	177.63	577.70	0.22	0.11	-33.05

Leam Drilling Systems, Inc.

Survey Report



Company: HILCORP ENERGY COMPANY
Project: St. Martin Parish, LA
Site: Goodrich C
Well: #4
Wellbore: ST01
Design: ST01

Local Co-ordinate Reference:
TYD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #4
 GL 0' + KB 30.4' @ 30.40usft (Axxis Liberty)
 GL 0' + KB 30.4' @ 30.40usft (Axxis Liberty)
 Grid
 Minimum Curvature
 EDM 5000 1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,958.00	0.60	172.60	11,937.95	-550.67	177.71	578.10	0.49	0.43	26.74
12,010.34	0.60	172.60	11,990.29	-551.22	177.78	578.64	0.00	0.00	0.00
PBHL (C#4)									
12,020.00	0.60	172.60	11,999.95	-551.32	177.80	578.74	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____

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JUL - 5 2012

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