Hilcorp Energy Company

Current Schematic

Well Name: SUNRAY F #1G

API / UWI	Surface Legal Location	Field Name	License No.	State/Province	Well Configuration Type
3004534742	026-030N-010W-H	BASIN DAKOTA		NEW MEXICO	VERTICAL

Ground Elevation (ft)	Original KB/RT Elevation (ft)	KB-Ground Distance (ft)	KB-Casing Flange Distance (ft)	KB-Tubing Hanger Distance (ft)
6,289.00	6,305.00	16.00	6,289.00	6,291.00

VERTICAL, Original Hole, 8/16/2018 2:50:32 PM

MD (ftKB)	TVD (ftKB)	Vertical schematic (actual)
16.7	16.7	Tubing Hanger; 7 in; 15.9 ftKB; 16.8 ftKB
19.4	19.4	
26.6	26.6	Tubing; 2 3/8 in; 4.70 lb/ft; J-55; 16.8 ftKB; 47.7 ftKB
67.9	67.9	Tubing Pup Joint; 2 3/8 in; 4.70 lb/ft; J-55; 47.7 ftKB; 73.7 ftKB
91.5	91.5	
275.9	275.9	Surface Casing (final)
345.5	345.5	1; Surface; 9 5/8 in; 9.00 in; 16.0 ftKB; RIG UP AND RUN 11 JTS. 9-5/8" H-40, 32.3#, ST&C CASING. SET @ 346.19' (KB).
351.0	351.0	TORQUE TO 2,400 FT/LBS. INSERT FLOAT @ 285.8; 346.2 ftKB
1,639.1	1,638.9	OJO ALAMO (final)
		KIRTLAND (final)
2,029.9	2,029.6	
2,031.2	2,030.9	DV Tool @ 2,031'
2,508.9	2,508.5	FRUITLAND (final)
		PICTURED CLIFFS (final)
3,029.9	3,029.4	LEWIS (final)
3,083.3	3,082.9	
3,126.3	3,125.9	2; Intermediate1; 7 in; 6.46 in; 16.0 ftKB; PJSM & RUN 74 JTS OF 7" 20#, J-55
3,128.0	3,127.5	ST&C SET @ 3127.4, F.S. @ 3126, F.C. @ 3083, D.V. TOOL @ 2031'; 3,127.4 ftKB
3,604.7	3,604.2	
		HUERFANITO BENTONITE (final)
3,614.8	3,614.3	Tubing; 2 3/8 in; 4.70 lb/ft; J-55; 73.7 ftKB; 7,312.8 ftKB
4,384.8	4,384.2	MASSIVE CLIFF HOUSE (final)
		MENEFEE (final)
4,490.2	4,489.5	PERF - CLIFF HOUSE MASSIVE; 4,490.0-4,646.0; 7/4/2018
4,700.1	4,699.5	PERF - MENEFEE; 4,700.0-5,047.0; 7/3/2018
5,129.9	5,129.2	MASSIVE POINT LOOKOUT (final)
5,356.0	5,355.2	PERF - POINT LOOKOUT; 5,144.0-5,356.0; 7/3/2018
6,389.1	6,388.2	PERF - DAKOTA; 7,238.0-7,322.0; 2/24/2009
7,043.3	7,042.3	Tubing Pup Joint; 2 3/8 in; 7,312.8 ftKB; 7,314.9 ftKB
7,185.0	7,184.0	Tubing; 2 3/8 in; 4.70 lb/ft; J-55; 7,314.9 ftKB; 7,346.3 ftKB
7,312.7	7,311.6	PERF - DAKOTA; 7,332.0-7,360.0; 2/24/2009
7,321.9	7,320.8	Seating Nipple; 2 3/8 in; 7,346.3 ftKB; 7,347.4 ftKB
7,332.0	7,330.9	Expendable Check (MS; 2 3/8 in; 7,347.4 ftKB; 7,348.3 ftKB
7,347.4	7,346.4	PBTD; 7,448.0
7,359.9	7,358.8	3; Production1; 4 1/2 in; 4.00 in; 16.0 ftKB; RAN 181 JTS OF 4 1/2 11.6# L-80
7,448.2	7,447.1	PRODUCTION CSG.SET @ 7449.1', F.S. @ 7448', F.C. @ 7447', MARKER JT @
7,449.1	7,448.1	7032.1', MARKER JT @ 3604.7'; 7,449.1 ftKB

Surface Casing Cement; 16.0-346.2; 1/16/2009; CMT PUMP 200 SXS TYPE 5 CMT @ 15.6 PPG. (42 BBL SLURRY) CIRC 18 BBL TO SURFACE.

Surface Casing Cement (plug); 276.0-346.2; 1/16/2009; CMT PUMP 200 SXS TYPE 5 CMT @ 15.6 PPG. (42 BBL SLURRY) CIRC 18 BBL TO SURFACE.

Intermediate Casing Cement; 16.0-2,031.3; 1/31/2009; CMT 2nd STAGE -LEAD: 240 SKS (91 BBLS) @ 12.1 PPG, PREMIUM LITE (28 BBLS OF GOOD CMT TO SURFACE)

Intermediate Casing Cement (plug); 2,030.0-3,127.4; 1/31/2009; CMT FIRST STAGE-LEAD: 82 SKS (31 BBLS) @ 12.1 PPG, PREMIUM LITE TAIL: 75 SKS (18 BBLS) @ 14.6 PPG, TYPE III CMT (15BBLS OF GOOD CMT TO SURFACE)

Intermediate Casing Cement; 2,031.3-3,127.4; 1/31/2009; CMT FIRST STAGE-LEAD: 82 SKS (31 BBLS) @ 12.1 PPG, PREMIUM LITE TAIL: 75 SKS (18 BBLS) @ 14.6 PPG, TYPE III CMT (15BBLS OF GOOD CMT TO SURFACE)

Production Casing Cement; 1,370.0-7,449.1; 2/3/2009; CMT TAIL: 321 SKS (113 BBLS) @ 12.5 PPG OF PREMIUM LITE HS FM + .25 PPS CELLO-FLAKE, .3% CD-32, 6.25 PPS LCM-1, 1% FL-52.

Hydraulic Frac; 7/4/2018; BROKE DOWN WELL WITH WATER AND 500 GAL 15% HCL. FOAM FRAC'D CLIFFHOUSE WITH 148,960 LBS 40/70 AND 40,310 GAL SLICKWATER AND 1.20 MILLION SCF N2. 70 QUALITY. AVG RATE = 61 BPM, AVG PSI = 2104. ISIP WAS 504 PSI.

Hydraulic Frac; 7/3/2018; BROKE DOWN WELL WITH WATER AND 1000 GAL 15% HCL. FOAM FRAC'D MENEFEE WITH 200,050 LBS 40/70 AND 52,729 GAL SLICKWATER AND 2.11 MILLION SCF N2. 70 QUALITY. AVG RATE = 61 BPM, AVG PSI = 2527. ISIP WAS 666 PSI.

Hydraulic Frac; 7/3/2018; BROKE DOWN WELL WITH WATER AND 500 GAL 15% HCL. FOAM FRAC'D PT LOOKOUT WITH 152.670 LBS 40/70 AND 43,169 GAL SLICKWATER AND 1.35 MILLION SCF N2. 70 QUALITY. AVG RATE = 60 BPM, AVG PSI = 2008. ISIP WAS 223 PSI. DROPPED 12 BIO-BALLS WITH 1/2 OF SAND PUMPED.

Hyd Frac-Foam N2; 2/24/2009; FRAC THE DAKOTA ZONE: (7238'-7360') FRAC THE DAKOTA ZONE WITH 85 Q SLICKFOAM AT 50.1 BPM WITH 25,360 LBS. OF 20/40 BRADY SAND, N2: 4,402,600 SCF. FRAC GRADIENT AVERAGE: .69 PSI/FT. PUMPED 755.9 SLURRY BBLS.

Cement Plug; 7,448.0-7,449.1; 2/3/2009

Cement; 7,449.1-7,453.0; 2/3/2009