

**CONFIDENTIAL**

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION  
**WELL COMPLETION FORM**  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

**ORIGINAL**

2/14/14  
Form ACO-1  
June 2009  
Form Must Be Typed  
Form must be Signed  
All blanks must be Filled

OPERATOR: License # 34574  
Name: Shell Gulf of Mexico Inc.  
Address 1: 150 N. Dairy Ashford (77079)  
Address 2: PO Box 576 (77001-0576)  
City: Houston State: TX Zip: 77001 + 0576  
Contact Person: Damonica Pierson  
Phone: ( 832 ) 337-2172  
CONTRACTOR: License # 32784  
Name: Nabors Well Services LTD  
Wellsite Geologist: Cody Holbrook  
Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well     Re-Entry     Workover  
 Oil     WSW     SWD     SIOW  
 Gas     D&A     ENHR     SIGW  
 OG     GSW     Temp. Abd.  
 CM (Coal Bed Methane)  
 Cathodic     Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_  
Well Name: \_\_\_\_\_  
Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_  
 Deepening     Re-perf.     Conv. to ENHR     Conv. to SWD  
 Conv. to GSW  
 Plug Back: \_\_\_\_\_ Plug Back Total Depth  
 Commingled    Permit #: \_\_\_\_\_  
 Dual Completion    Permit #: \_\_\_\_\_  
 SWD    Permit #: \_\_\_\_\_  
 ENHR    Permit #: \_\_\_\_\_  
 GSW    Permit #: \_\_\_\_\_

11/14/11    12/9/11    02/03/12  
Spud Date or    Date Reached TD    Completion Date or  
Recompletion Date       Recompletion Date

API No. 15 - 15-077-21756-01-00  
Spot Description: \_\_\_\_\_  
NE SW SW SE Sec. 19 Twp. 33 S. R. 8  East  West  
528 Feet from  North /  South Line of Section  
2,140 Feet from  East /  West Line of Section  
Footages Calculated from Nearest Outside Section Corner:  
 NE     NW     SE     SW  
County: Harper  
Lease Name: Senff 3308 Well #: 19-1H  
Field Name: Wildcat  
Producing Formation: Mississippi  
Elevation: Ground: 1316 Kelly Bushing: 23'8"  
Total Depth: 8646 Plug Back Total Depth: \_\_\_\_\_  
Amount of Surface Pipe Set and Cemented at: 810 Feet  
Multiple Stage Cementing Collar Used?  Yes  No  
If yes, show depth set: \_\_\_\_\_ Feet  
If Alternate II completion, cement circulated from: \_\_\_\_\_  
feet depth to: surface w/ 470 sx cmt.

**Drilling Fluid Management Plan**

(Data must be collected from the Reserve Pit)  
Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls  
Dewatering method used: \_\_\_\_\_  
Location of fluid disposal if hauled offsite: \_\_\_\_\_  
Operator Name: \_\_\_\_\_  
Lease Name: **CONFIDENTIAL** License #: \_\_\_\_\_  
Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West  
County: \_\_\_\_\_ FEB 14 2014 RECEIVED  
Permit #: \_\_\_\_\_

**KCC**

**FEB 15 2012**

**KCC WICHITA**

**INSTRUCTIONS:** An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.

**AFFIDAVIT**

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Signature: Richard W Lewis  
Title: Team Lead Date: 2-14-2012

**KCC Office Use ONLY**

- Letter of Confidentiality Received  
Date: 2/14/12 - 2/14/14  
 Confidential Release Date: \_\_\_\_\_  
 Wireline Log Received  
 Geologist Report Received  
 UIC Distribution  
ALT  I  II  III Approved by: Dlg Date: 3/7/12

# Shell Exploration & Production Co. Inc.

Harper Co. (NAD-27)

Sec 19-T33S-R08W

Senff 3308 #19-1H / Job #8486596 / Nabors 180

API # 15-077-21756

Wellbore #1

Design: Wellbore #1

## Sperry Drilling Services Standard Report With Distance & X, Y Offsets to Plan

13 December, 2011

Well Coordinates: 177,395.16 N, 2,079,397.75 E (37° 09' 12.74" N, 098° 13' 39.30" W)

Ground Level: 1,316.00 ft

Local Coordinate Origin:

Centered on Well Senff 3308 #19-1H / Job #8486596 / Nabors 180

Viewing Datum:

rkb @ 1339.50ft

TVDs to System:

N

North Reference:

True

Unit System:

API-US New

Version: 2003.21 Build: 43

CONFIDENTIAL

FEB 14 2014

KCC

HALLIBURTON

**HALLIBURTON****Design Report for Senff 3308 #19-1H / Job #8486596 / Nabors 180 - Wellbore #1**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Toolface Azimuth (°)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Distance to Plan (ft)	Y Offset to Plan (ft)	X Offset to Plan (ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150.00	0.48	294.34	150.00	0.26	-0.57	0.28	0.32	294.34	0.32	0.00	0.63	-0.63	0.00
<b>First MWD Survey</b>													
181.00	0.36	312.57	181.00	0.38	-0.76	0.40	0.57	140.80	-0.39	58.81	0.85	-0.82	0.24
212.00	0.24	52.03	212.00	0.48	-0.78	0.51	1.50	149.35	-0.39	320.84	0.95	0.35	0.89
243.00	0.94	96.50	243.00	0.50	-0.48	0.51	2.54	56.81	2.26	143.45	1.08	1.01	0.38
274.00	1.59	100.86	273.99	0.39	0.20	0.38	2.12	10.61	2.10	14.06	1.30	1.29	0.15
335.00	3.04	101.92	334.94	-0.11	2.61	-0.19	2.38	2.22	2.38	1.74	2.16	2.09	-0.55
433.00	5.07	99.85	432.69	-1.39	9.42	-1.67	2.08	-5.16	2.07	-2.11	3.88	3.34	-1.98
529.00	5.65	101.08	528.27	-3.02	18.24	-3.57	0.62	11.82	0.60	1.28	4.38	2.54	-3.57
624.00	4.29	105.02	622.91	-4.84	26.26	-5.63	1.48	167.87	-1.43	4.15	5.44	1.14	-5.31
718.00	2.15	98.06	716.75	-6.00	31.40	-6.94	2.31	-173.11	-2.28	-7.40	6.20	0.70	-6.16
758.00	1.42	97.85	756.73	-6.17	32.63	-7.15	1.83	-179.59	-1.83	-0.53	6.28	0.33	-6.27
840.00	0.32	88.54	838.72	-6.30	33.87	-7.32	1.35	-177.32	-1.34	-11.35	6.31	0.42	-6.29
934.00	0.31	84.08	932.72	-6.27	34.38	-7.30	0.03	-114.41	-0.01	-4.74	6.28	0.39	-6.26
1,029.00	0.20	65.70	1,027.72	-6.18	34.79	-7.22	0.14	-152.32	-0.12	-19.35	6.21	1.93	-5.90
1,123.00	0.31	328.80	1,121.72	-5.89	34.81	-6.93	0.41	-127.63	0.12	-103.09	5.93	5.39	2.47
1,218.00	0.44	336.65	1,216.72	-5.34	34.53	-6.37	0.15	25.52	0.14	8.26	5.35	5.06	1.74
1,313.00	0.62	330.24	1,311.71	-4.56	34.13	-5.58	0.20	-21.45	0.19	-6.75	4.56	3.96	2.25
1,408.00	0.67	342.79	1,406.71	-3.58	33.71	-4.59	0.16	76.86	0.05	13.21	3.60	3.30	1.45
1,503.00	0.69	338.32	1,501.70	-2.52	33.34	-3.52	0.06	-71.59	0.02	-4.71	2.64	2.05	1.66
1,598.00	0.53	343.08	1,596.70	-1.56	33.00	-2.55	0.18	164.80	-0.17	5.01	1.93	1.17	1.53
1,693.00	0.45	340.81	1,691.69	-0.79	32.75	-1.77	0.09	-167.49	-0.08	-2.39	1.59	0.29	1.56
1,788.00	0.44	339.64	1,786.69	-0.10	32.50	-1.07	0.01	-138.32	-0.01	-1.23	1.63	-0.47	1.56
1,883.00	0.37	330.25	1,881.69	0.51	32.22	-0.46	0.10	-141.15	-0.07	-9.88	1.97	-1.39	1.40
1,978.00	0.31	336.38	1,976.69	1.01	31.96	0.05	0.07	151.81	-0.06	6.45	2.39	-1.79	1.57
2,073.00	0.35	328.88	2,071.68	1.50	31.71	0.54	0.06	-50.99	0.04	-7.89	2.84	-2.53	1.29
2,168.00	0.25	309.34	2,166.68	1.88	31.40	0.93	0.15	-143.84	-0.11	-20.57	3.31	-3.30	0.28
2,263.00	0.06	228.26	2,261.68	1.97	31.20	1.04	0.26	-166.17	-0.20	-85.35	3.53	-0.87	-3.42
2,358.00	0.09	206.34	2,356.68	1.87	31.13	0.94	0.04	-55.04	0.03	-23.07	3.53	0.35	-3.51
2,453.00	0.06	69.47	2,451.68	1.83	31.15	0.89	0.15	-162.95	-0.03	-144.07	3.49	2.15	2.75
2,548.00	0.06	278.36	2,546.68	1.85	31.14	0.91	0.12	-165.55	0.00	-159.06	3.51	-3.22	-1.40
2,642.00	0.22	235.19	2,640.68	1.75	30.95	0.82	0.19	-56.28	0.17	-45.93	3.63	-1.61	-3.25
2,737.00	0.19	246.18	2,735.68	1.59	30.65	0.67	0.05	132.75	-0.03	11.57	3.82	-2.54	-2.85
2,832.00	0.19	219.28	2,830.68	1.40	30.41	0.49	0.09	-103.45	0.00	-28.32	3.97	-1.27	-3.76
2,926.00	0.09	275.66	2,924.68	1.29	30.24	0.38	0.17	151.87	-0.11	59.98	4.10	-4.00	-0.90
3,022.00	0.12	322.61	3,020.68	1.37	30.10	0.47	0.09	95.27	0.03	48.91	4.25	-3.54	2.36

**HALLIBURTON****Design Report for Senff 3308 #19-1H / Job #8486596 / Nabors 180 - Wellbore #1**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Toolface Azimuth (°)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Distance to Plan (ft)	Y Offset to Plan (ft)	X Offset to Plan (ft)
3,117.00	0.17	342.90	3,115.68	1.59	30.00	0.69	0.07	56.21	0.05	21.36	4.42	-2.73	3.48
3,212.00	0.28	351.88	3,210.68	1.95	29.92	1.05	0.12	22.30	0.12	9.45	4.63	-2.53	3.88
3,307.00	0.12	52.65	3,305.68	2.24	29.97	1.34	0.26	154.69	-0.17	63.97	4.72	1.94	4.30
3,402.00	0.17	59.93	3,400.68	2.37	30.17	1.47	0.06	23.89	0.05	7.66	4.61	2.23	4.04
3,497.00	0.12	88.75	3,495.68	2.45	30.39	1.53	0.09	138.27	-0.05	30.34	4.46	3.68	2.53
3,592.00	0.55	125.13	3,590.68	2.19	30.87	1.26	0.48	45.30	0.45	38.29	3.92	3.92	-0.09
3,679.00	1.45	38.59	3,677.67	2.81	31.89	1.85	1.75	-107.72	1.03	-99.47	3.59	-0.80	3.49
3,711.00	3.89	10.19	3,709.63	4.19	32.34	3.22	8.45	-43.16	7.63	-88.75	4.56	-3.81	2.50
3,743.00	6.98	5.55	3,741.48	7.20	32.72	6.21	9.75	-10.41	9.66	-14.50	6.98	-6.67	2.05
3,774.00	9.27	3.83	3,772.17	11.56	33.07	10.57	7.43	-6.91	7.39	-5.55	9.60	-9.46	1.62
3,806.00	10.79	4.37	3,803.68	17.12	33.47	16.11	4.76	3.81	4.75	1.69	12.01	-11.93	1.37
3,838.00	12.24	7.18	3,835.03	23.47	34.12	22.44	4.86	22.53	4.53	8.78	13.81	-13.75	1.33
3,869.00	13.27	6.77	3,865.27	30.27	34.95	29.21	3.34	-5.22	3.32	-1.32	14.90	-14.89	0.29
3,901.00	14.78	3.70	3,896.31	37.99	35.65	36.90	5.26	-27.73	4.72	-9.59	15.36	-15.29	-1.46
3,933.00	16.17	1.73	3,927.15	46.52	36.04	45.41	4.64	-21.67	4.34	-6.16	15.22	-14.98	-2.73
3,965.00	17.70	0.71	3,957.76	55.83	36.24	54.72	4.87	-11.48	4.78	-3.19	14.47	-14.02	-3.59
3,996.00	20.30	0.30	3,987.07	65.93	36.33	64.81	8.40	-3.13	8.39	-1.32	13.51	-12.84	-4.22
4,028.00	23.62	359.79	4,016.75	77.89	36.33	76.77	10.39	-3.52	10.38	-1.59	12.77	-11.83	-4.82
4,060.00	26.84	359.64	4,045.69	91.53	36.26	90.40	10.06	-1.21	10.06	-0.47	12.42	-11.21	-5.33
4,091.00	30.12	0.55	4,072.94	106.31	36.29	105.17	10.67	7.94	10.58	2.94	12.51	-11.09	-5.79
4,123.00	32.85	1.05	4,100.22	123.02	36.53	121.87	8.57	5.68	8.53	1.56	12.98	-11.17	-6.60
4,155.00	36.23	0.95	4,126.58	141.16	36.85	139.99	10.56	-1.00	10.56	-0.31	13.77	-11.46	-7.63
4,186.00	39.68	1.12	4,151.02	160.22	37.19	159.03	11.13	1.80	11.13	0.55	14.99	-12.23	-8.66
4,218.00	43.33	0.43	4,174.98	181.42	37.47	180.21	11.50	-7.40	11.41	-2.16	16.68	-13.46	-9.85
4,250.00	46.79	359.42	4,197.58	204.06	37.44	202.85	11.04	-12.03	10.81	-3.16	18.65	-15.17	-10.85
4,281.00	48.50	358.06	4,218.46	226.96	36.93	225.75	6.40	-30.90	5.52	-4.39	20.32	-16.78	-11.47
4,313.00	49.93	356.19	4,239.37	251.16	35.71	249.98	6.29	-45.33	4.47	-5.84	21.24	-17.83	-11.55
4,345.00	50.85	353.91	4,259.77	275.72	33.58	274.59	6.20	-63.09	2.88	-7.13	21.05	-18.06	-10.81
4,376.00	52.63	353.46	4,278.97	299.91	30.90	298.85	5.85	-11.37	5.74	-1.45	20.06	-17.88	-9.09
4,408.00	54.52	354.03	4,297.97	325.50	28.10	324.51	6.08	13.81	5.91	1.78	18.76	-17.36	-7.11
4,440.00	56.67	355.08	4,316.05	351.79	25.60	350.86	7.24	22.24	6.72	3.28	17.36	-16.51	-5.38
4,471.00	58.37	356.71	4,332.69	377.87	23.73	376.99	7.05	39.41	5.48	5.26	16.03	-15.45	-4.26
4,503.00	58.66	356.65	4,349.41	405.11	22.15	404.26	0.92	-10.02	0.91	-0.19	15.09	-14.62	-3.72
4,535.00	58.89	356.22	4,366.00	432.42	20.45	431.61	1.36	-58.09	0.72	-1.34	14.27	-13.93	-3.11
4,566.00	60.05	356.45	4,381.74	459.07	18.74	458.30	3.80	9.75	3.74	0.74	13.86	-13.65	-2.40
4,598.00	60.44	356.76	4,397.62	486.80	17.09	486.07	1.48	34.69	1.22	0.97	13.91	-13.80	-1.78
4,630.00	60.72	356.79	4,413.34	514.63	15.53	513.93	0.88	5.34	0.88	0.09	13.81	-13.75	-1.27
4,661.00	63.03	357.53	4,427.96	541.93	14.17	541.26	7.74	15.95	7.45	2.39	13.10	-13.07	-0.88
4,693.00	66.49	357.91	4,441.60	570.85	13.02	570.20	10.87	5.76	10.81	1.19	12.57	-12.55	-0.80

**HALLIBURTON****Design Report for Senff 3308 #19-1H / Job #8486596 / Nabors 180 - Wellbore #1**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Tooface Azimuth (°)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Distance to Plan (ft)	Y Offset to Plan (ft)	X Offset to Plan (ft)
4,725.00	70.29	358.09	4,453.38	600.58	11.99	599.95	11.89	2.56	11.88	0.56	12.63	-12.59	-0.90
4,756.00	73.67	359.22	4,462.97	630.05	11.30	629.42	11.44	17.81	10.90	3.65	13.26	-13.20	-1.26
4,788.00	76.61	358.89	4,471.18	660.97	10.79	660.35	9.24	-6.23	9.19	-1.03	14.28	-14.15	-1.97
4,820.00	78.24	359.59	4,478.14	692.20	10.37	691.57	5.52	22.82	5.09	2.19	15.17	-14.92	-2.72
4,851.00	78.50	359.60	4,484.39	722.56	10.16	721.93	0.84	2.16	0.84	0.03	15.24	-14.78	-3.69
4,883.00	78.81	359.20	4,490.69	753.93	9.83	753.30	1.56	-51.72	0.97	-1.25	14.13	-13.36	-4.61
4,915.00	80.02	358.34	4,496.57	785.38	9.15	784.75	4.61	-35.02	3.78	-2.69	12.07	-10.90	-5.18
4,946.00	82.81	357.16	4,501.19	816.00	7.95	815.40	9.76	-22.79	9.00	-3.81	9.71	-8.22	-5.17
4,978.00	85.74	356.79	4,504.38	847.80	6.27	847.23	9.23	-7.18	9.16	-1.16	7.35	-5.65	-4.70
5,010.00	88.21	356.92	4,506.07	879.70	4.52	879.17	7.73	3.01	7.72	0.41	5.51	-3.61	-4.16
5,041.00	90.19	356.87	4,506.51	910.65	2.84	910.16	6.39	-1.45	6.39	-0.16	4.62	-2.80	-3.67
5,073.00	91.05	356.88	4,506.16	942.60	1.09	942.14	2.69	0.67	2.69	0.03	4.19	-2.76	-3.15
5,104.00	91.54	356.53	4,505.46	973.54	-0.69	973.12	1.94	-35.53	1.58	-1.13	4.00	-3.08	-2.56
5,202.00	92.66	355.60	4,501.87	1,071.24	-7.41	1,070.98	1.49	-39.67	1.14	-0.95	5.49	-5.48	0.41
5,233.00	93.03	355.64	4,500.33	1,102.11	-9.77	1,101.91	1.20	6.16	1.19	0.13	6.82	-6.64	1.59
5,297.00	94.51	356.16	4,496.12	1,165.81	-14.34	1,165.72	2.45	19.30	2.31	0.81	10.72	-10.06	3.72
5,392.00	92.90	355.50	4,489.98	1,260.36	-21.23	1,260.43	1.83	-157.73	-1.69	-0.69	16.58	-15.04	6.98
5,487.00	90.80	354.85	4,486.92	1,354.97	-29.22	1,355.23	2.31	-162.80	-2.21	-0.68	20.38	-16.95	11.32
5,581.00	92.04	354.08	4,484.59	1,448.50	-38.28	1,448.99	1.55	-31.82	1.32	-0.82	25.26	-18.88	16.79
5,676.00	88.02	354.42	4,484.54	1,543.00	-47.80	1,543.74	4.25	175.16	-4.23	0.36	29.54	-18.97	22.64
5,771.00	88.02	354.27	4,487.82	1,637.48	-57.15	1,638.46	0.16	-90.00	0.00	-0.16	32.42	-15.71	28.36
5,866.00	88.46	358.15	4,490.74	1,732.21	-63.43	1,733.33	4.11	83.59	0.46	4.08	33.54	-12.72	31.03
5,961.00	85.92	358.79	4,495.39	1,827.05	-65.96	1,828.21	2.76	165.89	-2.67	0.67	30.99	-8.02	29.94
6,056.00	86.29	359.39	4,501.85	1,921.82	-67.47	1,922.98	0.74	58.30	0.39	0.63	27.84	-1.57	27.80
6,151.00	87.90	359.98	4,506.66	2,016.69	-67.99	2,017.83	1.80	20.12	1.69	0.62	24.88	3.23	24.67
6,246.00	90.25	0.73	4,508.20	2,111.67	-67.40	2,112.74	2.60	17.71	2.47	0.79	20.98	4.73	20.44
6,341.00	90.43	359.86	4,507.63	2,206.67	-66.91	2,207.68	0.94	-78.31	0.19	-0.92	16.83	4.16	16.31
6,436.00	89.88	358.86	4,507.38	2,301.66	-67.97	2,302.66	1.20	-118.81	-0.58	-1.05	14.27	3.91	13.73
6,531.00	90.12	358.85	4,507.38	2,396.64	-69.87	2,397.66	0.25	-2.39	0.25	-0.01	12.60	3.91	11.98
6,625.00	87.28	359.99	4,509.51	2,490.60	-70.82	2,491.60	3.26	158.14	-3.02	1.21	11.11	6.05	9.32
6,720.00	90.06	359.76	4,511.71	2,585.57	-71.03	2,586.53	2.94	-4.73	2.93	-0.24	10.13	8.25	5.89
6,815.00	91.73	359.14	4,510.23	2,680.55	-71.94	2,681.50	1.88	-20.36	1.76	-0.65	7.46	6.76	3.16
6,910.00	92.84	358.81	4,506.44	2,775.45	-73.64	2,776.41	1.22	-16.54	1.17	-0.35	3.21	2.97	1.22
7,005.00	91.54	358.52	4,502.81	2,870.36	-75.85	2,871.34	1.40	-167.43	-1.37	-0.31	0.69	-0.66	-0.22
7,100.00	92.28	356.93	4,499.64	2,965.23	-79.62	2,966.28	1.85	-65.01	0.78	-1.67	3.82	-3.82	-0.09
7,195.00	90.80	356.23	4,497.09	3,060.02	-85.29	3,061.20	1.72	-154.68	-1.56	-0.74	6.66	-6.38	1.93
7,290.00	88.70	355.62	4,497.51	3,154.77	-92.04	3,156.11	2.30	-163.80	-2.21	-0.64	7.81	-5.96	5.04
7,385.00	88.50	355.98	4,499.83	3,249.49	-98.99	3,251.00	0.43	119.07	-0.21	0.38	9.12	-3.65	8.36
7,481.00	89.01	358.77	4,501.91	3,345.36	-103.39	3,346.95	2.95	79.67	0.53	2.91	9.21	-1.55	9.08

**HALLIBURTON**

**Design Report for Senff 3308 #19-1H / Job #8486596 / Nabors 180 - Wellbore #1**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Toolface Azimuth (°)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Distance to Plan (ft)	Y Offset to Plan (ft)	X Offset to Plan (ft)
7,576.00	89.01	359.45	4,503.55	3,440.33	-104.86	3,441.93	0.72	90.01	0.00	0.72	6.91	0.09	6.91
7,671.00	91.36	0.01	4,503.25	3,535.32	-105.31	3,536.89	2.54	13.40	2.47	0.59	3.72	-0.22	3.71
7,766.00	89.75	358.75	4,502.33	3,630.31	-106.34	3,631.86	2.15	-141.95	-1.69	-1.33	1.58	-1.14	1.09
7,861.00	89.20	358.04	4,503.20	3,725.26	-109.00	3,726.86	0.95	-127.77	-0.58	-0.75	0.29	-0.27	0.11
7,956.00	90.25	357.14	4,503.65	3,820.18	-112.99	3,821.85	1.46	-40.60	1.11	-0.95	0.50	0.19	0.46
8,051.00	90.19	356.25	4,503.29	3,915.02	-118.47	3,916.81	0.94	-93.86	-0.06	-0.94	2.30	-0.18	2.30
8,146.00	91.85	356.78	4,501.60	4,009.82	-124.24	4,011.74	1.83	17.70	1.75	0.56	4.81	-1.87	4.43
8,241.00	90.86	356.57	4,499.35	4,104.63	-129.75	4,106.68	1.07	-168.02	-1.04	-0.22	7.52	-4.11	6.30
8,336.00	90.93	358.12	4,497.87	4,199.52	-134.15	4,201.65	1.63	87.40	0.07	1.63	9.00	-5.60	7.05
8,431.00	90.74	359.04	4,496.48	4,294.48	-136.51	4,296.64	0.99	101.66	-0.20	0.97	9.05	-6.98	5.76
8,542.00	92.04	358.08	4,493.79	4,405.41	-139.29	4,407.60	1.46	-36.43	1.17	-0.86	10.59	-9.68	4.29
<b>Last MWD Survey</b>													
8,623.00	92.04	358.08	4,490.91	4,486.31	-142.01	4,488.55	0.00	0.00	0.00	0.00	13.15	-12.56	3.90
<b>Projection to TD</b>													

**Design Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
150.00	150.00	0.26	-0.57	First MWD Survey
8,542.00	4,493.79	4,405.41	-139.29	Last MWD Survey
8,623.00	4,490.91	4,486.31	-142.01	Projection to TD

**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	358.28	Slot	0.00	0.00	0.00

**Survey tool program**

From (ft)	To (ft)	Survey/Plan	Survey Tool
150.00	8,623.00	MWD survey	MWD+SC

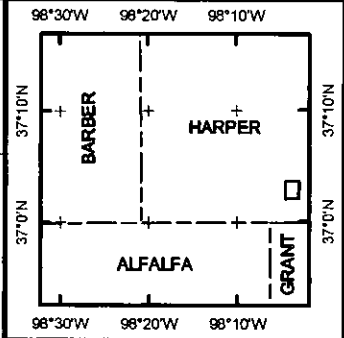
1,910,000

98°4'0"W

1,915,000



CROFT FARMS,  
INC. BY SUSAN E.  
CROFT, PRESIDENT



28

27

SHARYL R.  
DAVIS, A  
SINGLE PERSON

T34S - R7W

Shell Davis  
3407 27-1H

NAD27 State Plane Kansas South  
Lat: 37.180909 X: 1975194.307  
Lon: -98.58514 Y: 187256.3489

THE DUSTY E. ALBRIGHT LIVING  
TRUST, DATED JULY 10, 2007 (AN  
UN-DIVIDED ONE-HALF INTEREST)  
AND THE ERIN E. ALBRIGHT LIVING  
TRUST, DATED JULY 10, 2007, (AN  
UN-DIVIDED ONE-HALF-INTEREST),  
DUSTY E. ALBRIGHT AND  
ERIN E. ALBRIGHT, CO-TUSTEES  
OF EACH TRUST

SHARYL R.  
DAVIS, A  
SINGLE PERSON

CROFT FARMS,  
INC. BY SUSAN E.  
CROFT, PRESIDENT

ALBRIGHT  
1-35

SALLIE CARR 1

33

34

CHARLES  
REDFERN, A  
SINGLE MAN

THE DUSTY E. ALBRIGHT LIVING  
TRUST, DATED JULY 10, 2007 (AN  
UN-DIVIDED ONE-HALF INTEREST)  
AND THE ERIN E. ALBRIGHT LIVING  
TRUST, DATED JULY 10, 2007, (AN  
UN-DIVIDED ONE-HALF-INTEREST),  
DUSTY E. ALBRIGHT AND  
ERIN E. ALBRIGHT, CO-TUSTEES  
OF EACH TRUST

35

RECEIVED  
FEB 15 2012  
KCC WICHITA

NAD27 State Plane Kansas South  
Lat: 37.037302 X: 2126785.602  
Lon: -98.065671 Y: 135251.5406

BHL

CONFIDENTIAL

Shell Gulf of Mexico Inc.

KANSAS  
HARPER COUNTY  
T34S - R7W SEC. 27, 34  
Shell Davis 3407 27-1H

4

CONFIDENTIAL

3

T35S - R7W

KCC



November 7, 2011 E. Gilbertson - 4105 B By Eric Gilbertson  
ShellDavis3407\_27-1H.mxd UTM 14N - NAD27 - US Feet

1,910,000

98°4'0"W

1,915,000

37°20'N

37°20'N

13,455,000

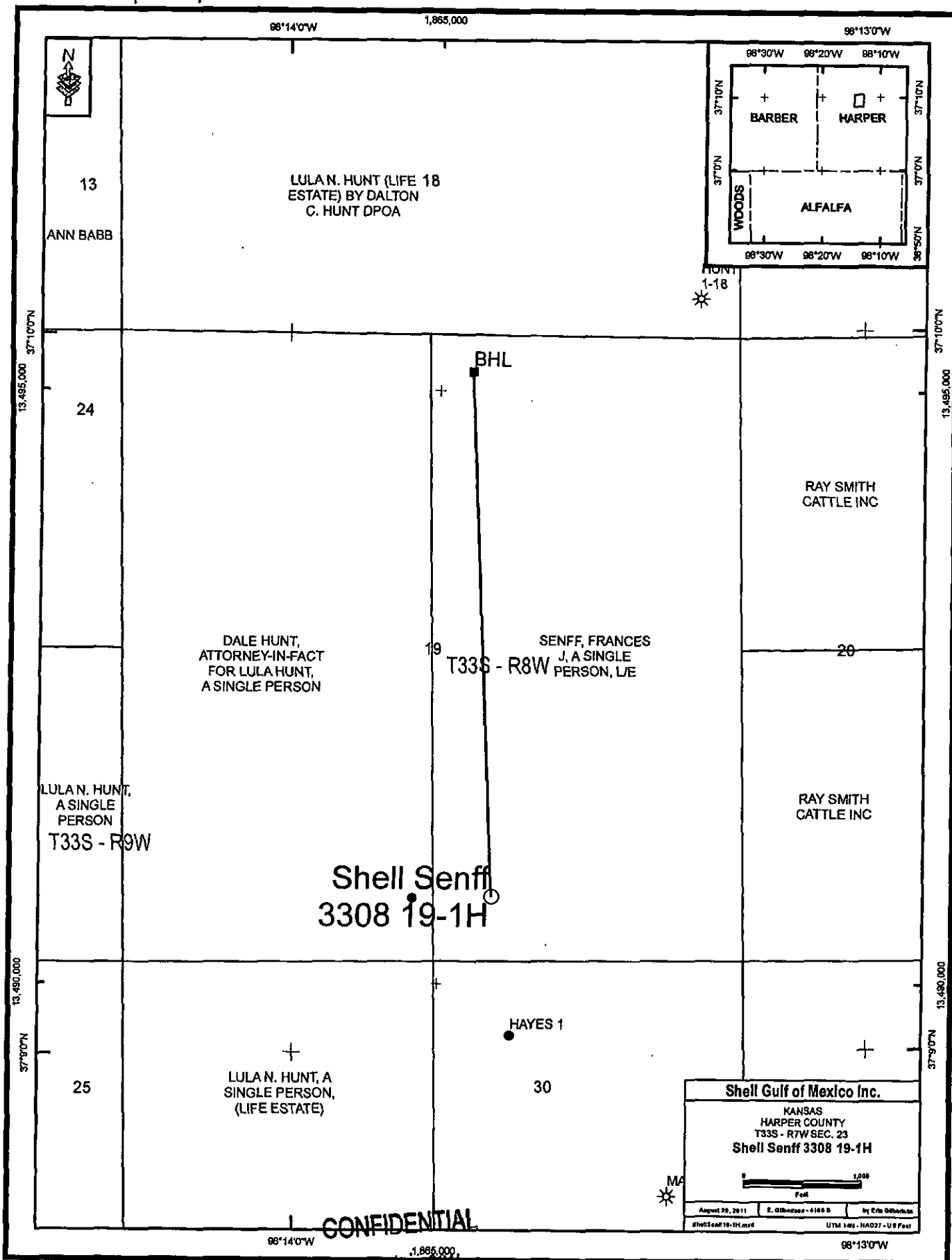
13,455,000

37°30'N

37°30'N

13,450,000

13,450,000



CONFIDENTIAL

Shell Gulf of Mexico Inc.  
KANSAS  
HARPER COUNTY  
T33S - R7W SEC. 23  
Shell Senff 3308 19-1H

August 29, 2011 E. Gibson - 4168 B by Eric Osherson  
shell3308-19-1H.mxd UTM 14N - NAD27 - US Feet

FEB 17 2014

KCC



Operator Name: Shell Gulf of Mexico Inc. Lease Name: Senff 3308 Well #: 19-1H  
 Sec. 19 Twp. 33 S. R. 8  East  West County: Harper

**INSTRUCTIONS:** Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Electric Log Submitted Electronically <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>(If no, Submit Copy)</i>  List All E. Logs Run: <b>None</b>	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
--	---

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs./ Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
surface	12-1/4	9-5/8	36	810	Class C Poz-mix	470	2% CaCl <sub>2</sub> , .25pps Cellulose
intermediate	8-3/4	7	23	5164	Class C Poz-mix	610	2 pps Kalseel+5-10% salt
conductor	24"	18"	47.44	60'	Type 1/2 Portland Cement	8	15% Fly Ash

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth
	sleeve	Fracture	5405
	sleeve	Fracture	5814
	sleeve	Fracture	6179
	sleeve	Fracture	6503
	sleeve	Fracture	6830

TUBING RECORD: Size: <u>2 7/8</u> Set At: <u>4639</u> Packer At:		Liner Run: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Date of First, Resumed Production, SWD or ENHR.		Producing Method: <input type="checkbox"/> Flowing <input checked="" type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain) _____
Estimated Production Per 24 Hours	Oil Bbls. <u>200</u> Gas Mcf <u>800</u> Water Bbls. <u>1,000</u>	Gas-Oil Ratio <u>3,500</u> Gravity <u>33</u>

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input checked="" type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input checked="" type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other (Specify) _____	PRODUCTION INTERVAL: <u>5,405' - 8,454'</u>
--	---	--

Operator Name: Shell Gulf of Mexico Inc. Lease Name: Senff 3308 Well #: 19-1H  
 Sec. 19 Twp. 33 S. R. 8  East  West County: Harper

**INSTRUCTIONS:** Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Submitted Electronically <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, Submit Copy)</i>  List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
---	---

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

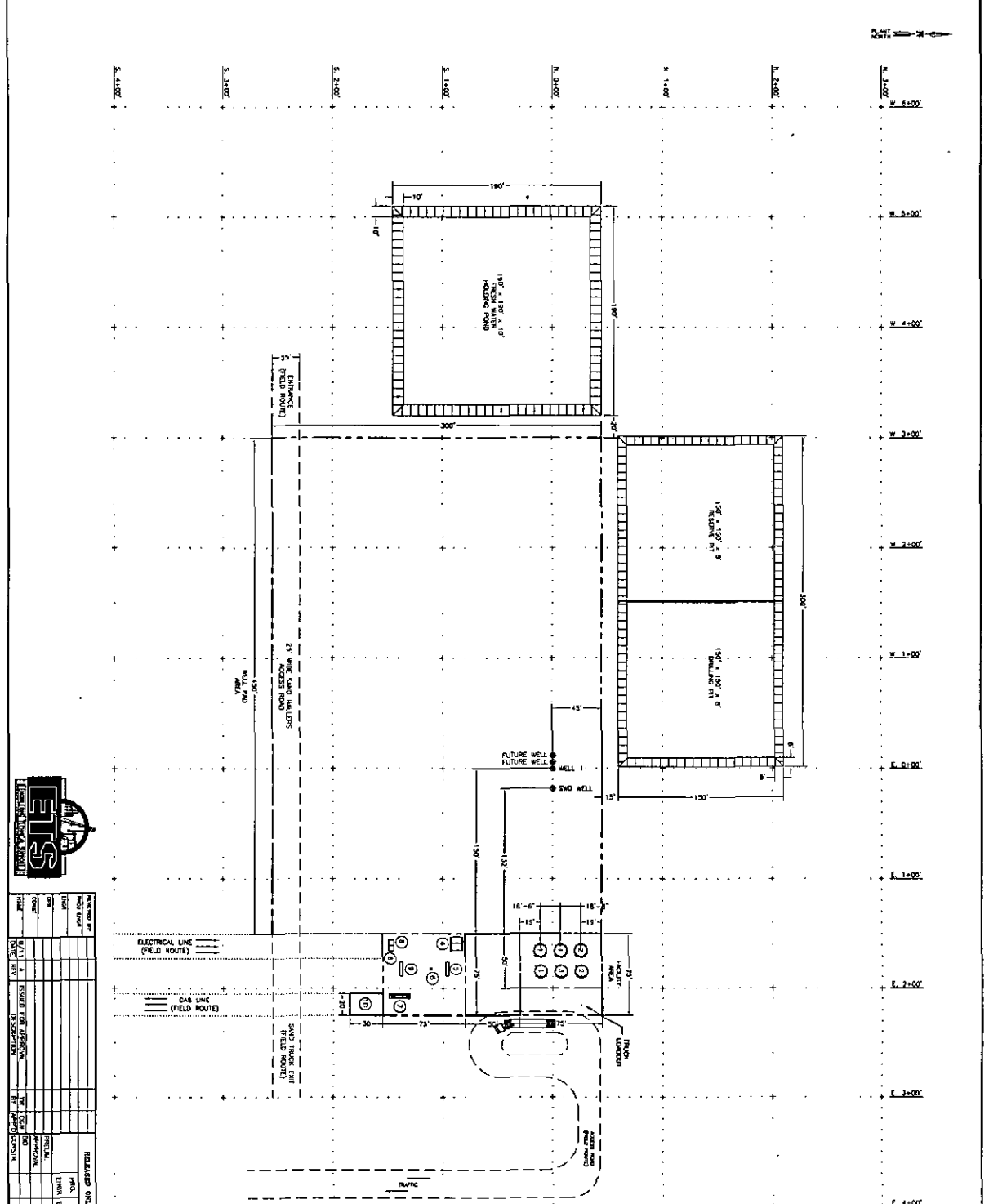
ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record (Amount and Kind of Material Used)	Depth
	Sleeve	Fracture	7155
	Sleeve	Fracture	7480
	Sleeve	Fracture	7805
	Sleeve	Fracture	8130
	Sleeve	Fracture	8454

TUBING RECORD: Size: \_\_\_\_\_ Set At: **KCC** Racker At: \_\_\_\_\_ Liner Run:  Yes  No **KCC WICHITA**

Date of First, Resumed Production, SWD or ENHR.		Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain) _____			
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5) (Submit ACO-4)</i> <input type="checkbox"/> Other (Specify) _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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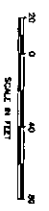


REVISIONS		RELEASED ONLY FOR:		SHELL EXPLORATION & PRODUCTION COMPANY	
NO.	DATE	BY	DESCRIPTION	PROJECT	DATE
1	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
2	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
3	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
4	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
5	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
6	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
7	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
8	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
9	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
10	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
11	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
12	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
13	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
14	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
15	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
16	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
17	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
18	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
19	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14
20	01/11/14	ETS	FIELD PLAN FOR APPROVAL	FIELD PLAN	01/11/14

**CONFIDENTIAL**  
 FEB 14 2014  
 KCC

**RECEIVED**  
 FEB 15 2012  
 KCC WICHITA

- EQUIPMENT:**
- ① 12'-0" x 30'-0" 10' RADIUS TANK (TYP. 3)
  - ② 12'-0" x 30'-0" 10' RADIUS TANK (TYP. 3)
  - ③ 12'-0" x 30'-0" 10' RADIUS TANK (TYP. 3)
  - ④ 12'-0" x 30'-0" 10' RADIUS TANK (TYP. 3)
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  - ㊼ 12'-0" x 30'-0" 10' RADIUS TANK (TYP. 3)
  - ㊽ 12'-0" x 30'-0" 10' RADIUS TANK (TYP. 3)
  - ㊾ 12'-0" x 30'-0" 10' RADIUS TANK (TYP. 3)
  - ㊿ 12'-0" x 30'-0" 10' RADIUS TANK (TYP. 3)



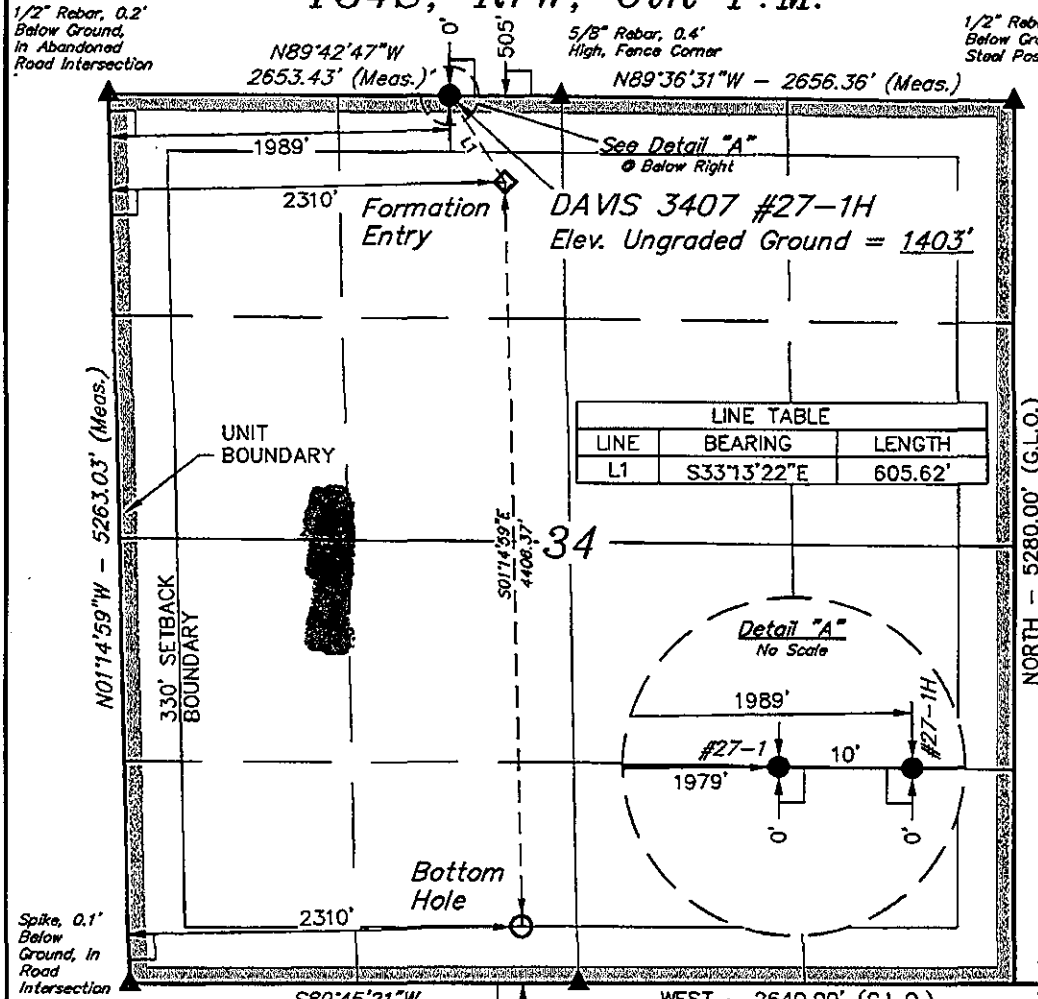
T34S, R7W, 6th P.M.

SGOMI

1/2" Rebar, 0.2'  
Below Ground,  
In Abandoned  
Road Intersection

1/2" Rebar, 0.3'  
Below Ground,  
Steel Post

Well location, DAVIS 3407 #27-1H, located as shown on the Line Between the SE 1/4 SW 1/4 of Section 27 and the NE 1/4 NW 1/4 of section 34, T34S, R7W, 6th P.M., Harper County, Kansas.

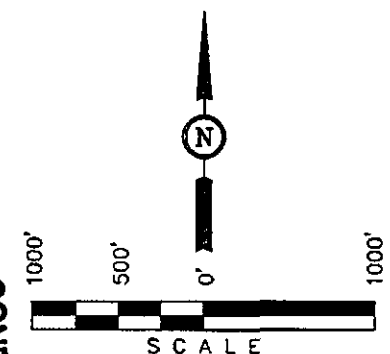


BASIS OF ELEVATION

SPOT ELEVATION LOCATED AT THE NORTHEAST CORNER OF SECTION 22, T33S, R7W, 6th P.M. TAKEN FROM THE ANTHONY, QUADRANGLE, KANSAS, HARPER COUNTY, 7.5 MINUTE QUAD (TOPOGRAPHIC MAP) PUBLISHED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY. SAID ELEVATION IS MARKED AS BEING 1348 FEET.

BASIS OF BEARINGS

BASIS OF BEARINGS IS A G.P.S. OBSERVATION.



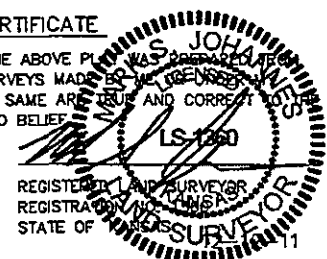
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CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM THE FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.



LEGEND:

- └─┘ = 90° SYMBOL
- = PROPOSED WELL HEAD.
- ▲ = SECTION CORNERS LOCATION

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NAD 83 (TARGET BOTTOM HOLE)	NAD 83 (FORMATION ENTRY)	NAD 83 (SURFACE LOCATION)
LATITUDE = 37°02'14.71" (37.037419)	LATITUDE = 37°02'58.27" (37.049519)	LATITUDE = 37°03'03.28" (37.050911)
LONGITUDE = 98°03'57.67" (98.066019)	LONGITUDE = 98°03'58.83" (98.066342)	LONGITUDE = 98°04'02.92" (98.067478)
NAD 27 (TARGET BOTTOM HOLE)	NAD 27 (FORMATION ENTRY)	NAD 27 (SURFACE LOCATION)
LATITUDE = 37°02'14.62" (37.037394)	LATITUDE = 37°02'58.18" (37.049494)	LATITUDE = 37°03'03.19" (37.050886)
LONGITUDE = 98°03'56.44" (98.065678)	LONGITUDE = 98°03'57.60" (98.066000)	LONGITUDE = 98°04'01.69" (98.067136)

UNTAH ENGINEERING & LAND SURVEYING  
85 SOUTH 200 EAST - VERNAL, UTAH 84078  
(435) 789-1017

SCALE 1" = 1000'	DATE SURVEYED: 11-05-11	DATE DRAWN: 12-09-11
PARTY L.S. K.H. C.C.	REFERENCES G.L.O. PLAT	
WEATHER COOL	FILE SGOMI	

**Davis 3407 27 1H Unit**

Unit will consist of all of Section 34-34S-7W, Harper County, Kansas.

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CUSTOMER (COMPANY NAME) SHELL WESTERNE & P INC				CREDIT APPROVAL NO.	PURCHASE ORDER NO.	CUSTOMER NUMBER 20079522 - 00222536	INVOICE NUMBER					
MAIL INVOICE TO : STREET OR BOX NUMBER PO BOX 301440				CITY Houston	STATE Texas	ZIP CODE 77230						
DATE WORK COMPLETED	MO. 11	DAY 15	YEAR 2011	BHI REPRESENTATIVE Danny Bane	WELL API NO: 15077217560000	WELL TYPE : New Well						
DISTRICT McAlester				JOB DEPTH(ft) 810	WELL CLASS : Gas							
WELL NAME AND NUMBER SEFFF 3308 #19-1H				TD WELL DEPTH(ft) 810	GAS USED ON JOB : No Gas							
WELL LOCATION :		LEGAL DESCRIPTION 19-33S-8W		COUNTY/PARISH Harper	STATE Kansas	JOB TYPE CODE : Surface						
PRODUCT CODE	DESCRIPTION			UNIT OF MEASURE	QUANTITY	LIST PRICE UNIT	GROSS AMOUNT	PERCENT DISC.	NET AMOUNT			
100020	Class C Cement			sacks	400	34.600	13,840.00		5,812.80			
100112	Calcium Chloride			lbs	871	1.220	1,062.62		446.30			
100295	Cello Flake			lbs	118	4.850	572.30		240.37			
100317	Poz (Fly Ash)			sacks	33	11.650	384.45		161.47			
420145	Bentonite - Sacked			lbs	1602	0.500	801.00		336.42			
488019	FP-6L			gals	4	99.250	397.00		166.74			
499632	Granulated Sugar			lbs	50	3.490	174.50		73.29			
499680	Static Free			lbs	6	38.700	232.20		97.52			
86720-1	9-5/8" Top Cem Plug, Nitrile cvr, Phen			ea	1	384.000	384.00		161.28			
	SUB-TOTAL FOR Product Material						17,848.07		7,496.19			
A152N	Personnel Per Diem Chrg - Cement Svc			ea	1	161.500	161.50		161.50			
M100	Bulk Materials Service Charge			cu ft	597	4.170	2,489.49		1,045.59			
	SUB-TOTAL FOR Service Charges						2,650.99		1,207.09			
ARRIVE LOCATION :	MO. 11	DAY 15	YEAR 2011	TIME 12:45	SERVICE ORDER: I AUTHORIZE WORK TO BEGIN PER SERVICE INSTRUCTIONS IN ACCORDANCE WITH THE TERMS AND CONDITIONS PRINTED ON THE LAST PAGE OF THIS FORM AND REPRESENT THAT I HAVE AUTHORITY TO ACCEPT AND SIGN THIS ORDER.			SERVICE RECEIPT: I CERTIFY THAT THE MATERIALS AND SERVICES LISTED WERE RECEIVED AND ALL SERVICES PERFORMED IN A WORKMANLIKE MANNER.				
CUSTOMER REP. Robert Hurst/John Boyd				SEE LAST PAGE FOR GENERAL TERMS AND CONDITIONS			CUSTOMER AUTHORIZED AGENT <input checked="" type="checkbox"/>			BHI APPROVED <input checked="" type="checkbox"/>		
				CUSTOMER AUTHORIZED AGENT								

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CUSTOMER (COMPANY NAME) SHELL WESTERN E & P INC				CREDIT APPROVAL NO.	PURCHASE ORDER NO.	CUSTOMER NUMBER 20079522 - 00222536	INVOICE NUMBER			
MAIL INVOICE TO : STREET OR BOX NUMBER PO BOX 301440				CITY Houston	STATE Texas	ZIP CODE 77230				
DATE WORK COMPLETED	MO. 11	DAY 15	YEAR 2011	BHI REPRESENTATIVE Danny Bane	WELL API NO: 15077217560000	WELL TYPE : New Well				
DISTRICT McAlester				JOB DEPTH(ft) 810	WELL CLASS : Gas					
WELL NAME AND NUMBER SEFFF 3308 #19-1H				TD WELL DEPTH(ft) 810	GAS USED ON JOB : No Gas					
WELL LOCATION :		LEGAL DESCRIPTION 19-33S-8W	COUNTY/PARISH Harper	STATE Kansas	JOB TYPE CODE : Surface					
PRODUCT CODE	DESCRIPTION			UNIT OF MEASURE	QUANTITY	LIST PRICE UNIT	GROSS AMOUNT	PERCENT DISC.	NET AMOUNT	
F053A	Cement Pumping, 0 - 1000 ft			4hrs	1	2,650.000	2,650.00		1,113.00	
F090	Fuel per pump charge - cement			pump/hr	4	61.000	244.00		244.00	
J050	Fas-Lok Cement Head			job	1	635.000	635.00		266.70	
J097	Line Restraint System - Cementing			job	1	750.000	750.00		750.00	
J225	Data Acquisition, Cement, Standard			job	1	1,635.000	1,635.00		686.70	
J390	Mileage, Heavy Vehicle			miles	400	9.100	3,640.00		1,528.80	
J391	Mileage, Auto, Pick-Up or Treating Van			miles	800	5.150	4,120.00		1,730.40	
J553	Circulating Equipment			job	1	1,830.000	1,830.00		768.60	
K001	Environmental Management-Cust Req Mts			ea	1	2,000.000	2,000.00		2,000.00	
K289	Misc Cement Pumping, Non-Pump Time			hrs	5	477.000	2,385.00		1,001.70	
SUB-TOTAL FOR Equipment							19,889.00		10,089.90	
J401	Bulk Delivery, Dry Products			ton-mi	5254	3.030	15,919.62		6,686.24	
J404	Bulk Delivery, Return of Unused Mts			ton-mi	940	3.030	2,848.20		1,196.24	
SUB-TOTAL FOR Freight/Delivery Charges							18,767.82		7,882.48	
ARRIVE LOCATION :	MO. 11	DAY 15	YEAR 2011	TIME 12:45	SERVICE ORDER: I AUTHORIZE WORK TO BEGIN PER SERVICE INSTRUCTIONS IN ACCORDANCE WITH THE TERMS AND CONDITIONS PRINTED ON THE LAST PAGE OF THIS FORM AND REPRESENT THAT I HAVE AUTHORITY TO ACCEPT AND SIGN THIS ORDER.			SERVICE RECEIPT: I CERTIFY THAT THE MATERIALS AND SERVICES LISTED WERE RECEIVED AND ALL SERVICES PERFORMED IN A WORKMANLIKE MANNER.		
CUSTOMER REP. Robert Hurst/John Boyd				SEE LAST PAGE FOR GENERAL TERMS AND CONDITIONS			<input checked="" type="checkbox"/> CUSTOMER AUTHORIZED AGENT <input checked="" type="checkbox"/> BHI APPROVED			
CUSTOMER AUTHORIZED AGENT										

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CUSTOMER (COMPANY NAME) SHELL WESTERN E & P INC				CREDIT APPROVAL NO.	PURCHASE ORDER NO.	CUSTOMER NUMBER 20079522 - 00222536	INVOICE NUMBER				
MAIL INVOICE TO :		STREET OR BOX NUMBER PO BOX 301440			CITY Houston	STATE Texas	ZIP CODE 77230				
DATE WORK COMPLETED	MO. 11	DAY 15	YEAR 2011	BHI REPRESENTATIVE Danny Bane	WELL API NO: 15077217560000	WELL TYPE : New Well					
DISTRICT McAlester				JOB DEPTH(ft) 810	WELL CLASS : Gas						
WELL NAME AND NUMBER SEFFF 3308 #19-1H				TD WELL DEPTH(ft) 810	GAS USED ON JOB : No Gas						
WELL LOCATION :		LEGAL DESCRIPTION 19-33S-8W	COUNTY/PARISH Harper	STATE Kansas	JOB TYPE CODE : Surface						
PRODUCT CODE	DESCRIPTION				UNIT OF MEASURE	QUANTITY	LIST PRICE UNIT	GROSS AMOUNT	PERCENT DISC.	NET AMOUNT	
	FIELD ESTIMATE							59,155.88		26,675.66	
<p style="font-size: 2em; font-weight: bold; transform: rotate(-90deg);">RECEIVED</p> <p style="font-size: 1.5em; font-weight: bold; transform: rotate(-90deg);">FEB 15 2012</p> <p style="font-size: 1.5em; font-weight: bold; transform: rotate(-90deg);">KCC WICHITA</p>											
ARRIVE LOCATION :	MO. 11	DAY 15	YEAR 2011	TIME 12:45	SERVICE ORDER: I AUTHORIZE WORK TO BEGIN PER SERVICE INSTRUCTIONS IN ACCORDANCE WITH THE TERMS AND CONDITIONS PRINTED ON THE LAST PAGE OF THIS FORM AND REPRESENT THAT I HAVE AUTHORITY TO ACCEPT AND SIGN THIS ORDER.				SERVICE RECEIPT: I CERTIFY THAT THE MATERIALS AND SERVICES LISTED WERE RECEIVED AND ALL SERVICES PERFORMED IN A WORKMANLIKE MANNER.		
CUSTOMER REP. Robert Hurst/John Boyd					CUSTOMER AUTHORIZED AGENT				X		
SEE LAST PAGE FOR GENERAL TERMS AND CONDITIONS									CUSTOMER AUTHORIZED AGENT		



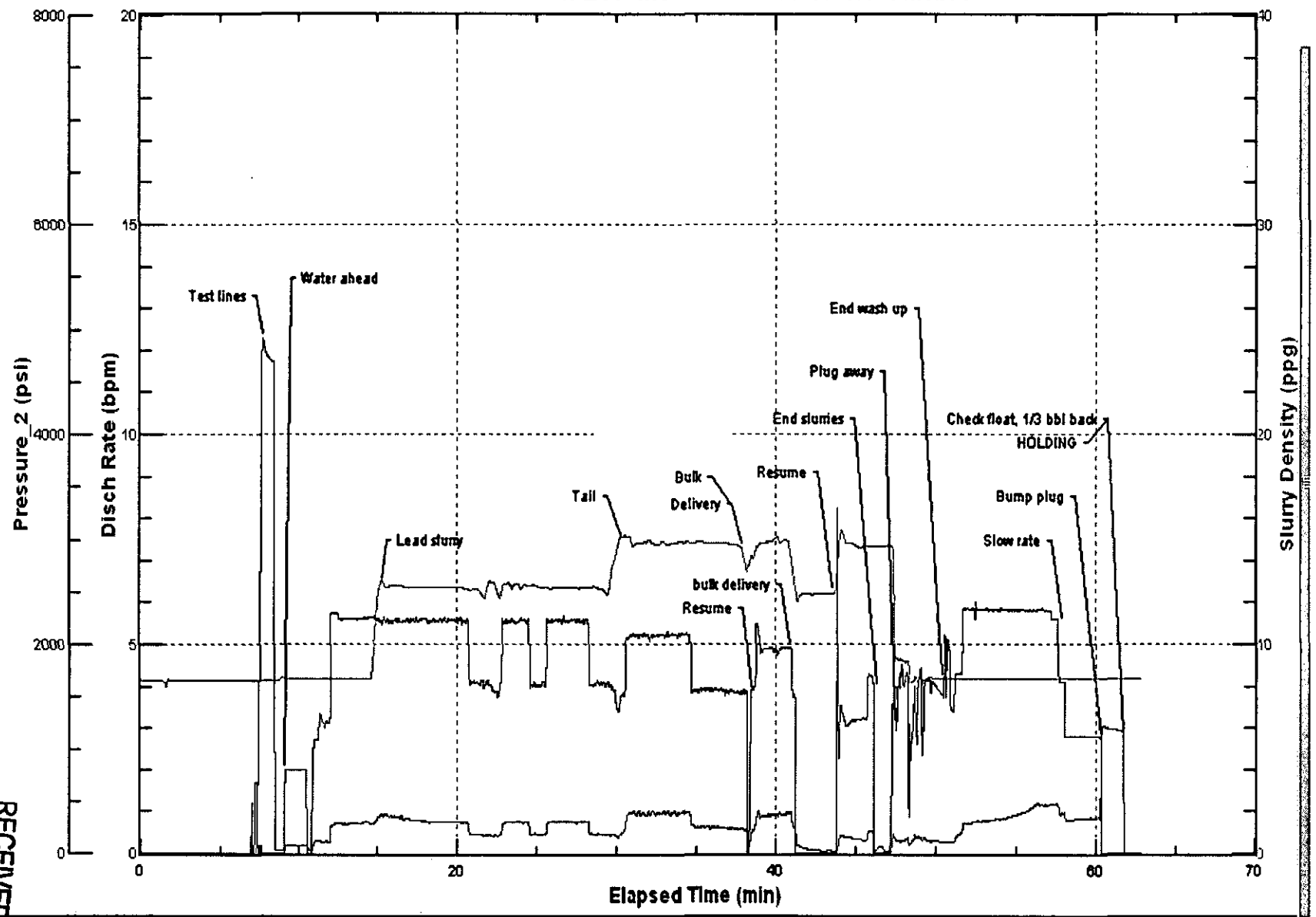
# CEMENT JOB REPORT



CUSTOMER SHELL WESTERN E & P INC		DATE 15-NOV-11	F.R. # 1001867390	SERV. SUPV. Danny Bane			
LEASE & WELL NAME SENF 3308 #19-1H - API 15077217560000		LOCATION 19-33S-8W		COUNTY-PARISH-BLOCK Harper Kansas			
DISTRICT McAloster		DRILLING CONTRACTOR RIG # NADORS 180		TYPE OF JOB Surface			
SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	MECHANICAL BARRIERS		MD	TVD		
BJ Cement Plug, Rubber, Top 9-5/8	Shoe, Customer supplied						
PHYSICAL SLURRY PROPERTIES							
MATERIALS FURNISHED BY BJ	LAB REPORT NO.	SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS		
Fresh Water			8.34				
15:85:8 (Poz/C/Gel)+2%CaCl2+.25pps Celloflake	125101466	220	12.7	2.04	11.2		
Class C+2%CaCl2+.25 pps Celloflake	125101467	250	14.8	1.35	6.33		
Fresh Water			8.34				
Available Mix Water	Bbl.	Available Displ. Fluid	Bbl.	TOTAL			
				218.12	95.77		
MOLE		TBG-CSG-D.P.			COLLAR DEPTHS		
SIZE	% EXCESS	DEPTH	ID	OD	WGT.	TYPE	
12.25	200	800	8.921	9.625	36	CSG	
						MD	
						TVD	
						GRADE	
						SHOE	
						FLOAT	
						STAGE	
						811	
						765	
LAST CASING		PKR-CMT RET-BR PL-LINER		PERF. DEPTH		TOP CONN	
ID	OD	WGT	TYPE	MD	TVD	BRAND & TYPE	DEPTH
17	18	84	CSG	60	60		
						TOP	BTM
						SIZE	THREAD
						9.625	8 RD
						TYPE	WGT.
						WATER BASED MU	9.1
DISPL. VOLUME		DISPL. FLUID		CAL. PSI	CAL. MAX PSI	OP. MAX	MAX TBG PSI
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.	SQ. PSI	RATED
59.0	BBLS	Fresh Water	8.34	269	0	0	0
							Operator
							2816
							2500
							MIX WATER
							Rig
EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING: Arrive to location, wait on casers and rig...							
PRESSURE/RATE DETAIL				EXPLANATION			
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>	
	PIPE	ANNULUS				TEST LINES 4700 PSI	CIRCULATING WELL - RIG <input checked="" type="checkbox"/> BJ <input type="checkbox"/>
12:45						Arrive to location	
21:00					WATER	Test lines to 4700 psi, start water ahead	
21:15	110		2.8	10	WATER	Step up rate	
21:16	280		5.6	10	WATER	20 bbls water, start Lead at 12.7 ppg	
21:34	310		5.2	80	CEMENT	End Lead, lead at shoe 62 mixed, start Tail at 14.8 ppg	
21:50	185		4.1	59	CEMENT	End Tail, drop plug, wash up on plug, Cement to surface	
21:52	125		2.9	3	WATER	3 bbls displaced, Tail slurry at shoe	
22:03	475		5.8	46	WATER	49 bbls displaced, slow rate to bump	
22:05	330		2.8	10	WATER	59 bbls displaced, bump plug pressure to 1,210 psi	
22:08	0		0	-33	WATER	Check floats, 1/3 bbl back, floats holding	
						Circulated 59 bbls, 162 ax cement to surface	
						Thanks for using Baker Hughes Pressure Pumping, Danny and Crew !...	
BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL CMT RETURNS/ REVERSED	TOTAL BBL PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
<input checked="" type="checkbox"/>	330	<input checked="" type="checkbox"/>	59	218	0	<input checked="" type="checkbox"/>	<i>Danny E Bane</i> 11-15-11

Shell Western E&P Inc Senff 3308 19-1H Surface

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# CEMENT JOB REPORT



CUSTOMER SHELL WESTERN E & P INC		DATE 29-NOV-11	F.R. # 1001870597	SERV. SUPV. JUSTIN D STAMPER	
LEASE & WELL NAME SENF 3308 #19-1H - API 15077217560000		LOCATION 19-33S-8W		COUNTY-PARISH-BLOCK Harper Kansas	
DISTRICT McAlester		DRILLING CONTRACTOR RIG #		TYPE OF JOB Squeeze Shoe	
SIZE & TYPE OF PLUGS		LIST CSG HARDWARE		MECHANICAL BARRIERS	
Foam Rubber Ball, 5 inch OD					
MATERIALS FURNISHED BY BJ		LAB REPORT NO.		PHYSICAL SLURRY PROPERTIES	
		SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT <sup>3</sup>	WATER GPS
MUD CLEAN			8.34		
C35:65:6+2PPS KOLSEAL+10%SALT		365	12.4	2.22	12.2
C50:50:2+2PPS KOLSEAL+5%SALT		245	14.2	1.31	5.78
MUD			9.3		
Available Mix Water 800 Bbl.		Available Displ. Fluid 1000 Bbl.		TOTAL 269 139.41	
HOLE		TBC CSG DP		COLLAR DEPTHS	
SIZE	% EXCESS	DEPTH	ID	OD	WGT
8.75		5164	6.366	7	23
LAST CASING		PKR CMT RET BR PL LINER		PERR DEPTH	
ID	OD	WGT	TYPE	MD	TVD
8.9	9.63	36		800	800
DISPL VOLUME		DISPL FLUID		CAL PSI	
VOLUME	UOM	TYPE	WGT	BUMP PLUG	TO REV
48	BBL	MUD	9.3		
Circulation Prior to Job		Circulation Time: 2		Circulation Rate: 4 BPM	
Circulated Well: Rig <input type="checkbox"/> BJ <input checked="" type="checkbox"/>		Mud Density In: 9.1 LBS/GAL		Mud Density Out: 8.8 LBS/GAL	
Gas Present: NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>		PV & YP Mud In:		PV & YP Mud Out:	
Displacement And Mud Removal		Displaced By: Rig <input type="checkbox"/> BJ <input checked="" type="checkbox"/>		Amount Bled Back After Job: 0 BBL	
Returns During Job: <input type="checkbox"/> NONE <input type="checkbox"/> PARTIAL <input checked="" type="checkbox"/> FULL		Cement Returns at Surface: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Method Used to Verify Returns:	
Pipe Movement: <input type="checkbox"/> ROTATION <input type="checkbox"/> RECIPROCATION <input type="checkbox"/> NONE <input type="checkbox"/> UNABLE DUE TO STUCK PIPE		Were Returns Planned at Surface: <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES		Quantity: Type: <input type="checkbox"/> BOW <input type="checkbox"/> RIGID	
Centralizers: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES		Job Pumped Through: <input type="checkbox"/> CHOKE MANIFOLD <input type="checkbox"/> SQUEEZE MANIFOLD <input type="checkbox"/> MANIFOLD <input type="checkbox"/> NO MANIFOLD			
Plugs		Number of Attempts by BJ: Competition:		Wiper Balls Used: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES	
Plug Catcher Used: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES		Was There a Bottom: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES		Parabow Used: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES	
Squeezes (Update Original Treatment Report for Primary Job)		BLOCK SQUEEZE <input type="checkbox"/>		SHOE SQUEEZE <input type="checkbox"/>	
Liner Packer: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES		TOP OF LINER SQUEEZE <input type="checkbox"/>		PLANNED <input type="checkbox"/> UNPLANNED <input type="checkbox"/>	
Casing Test (Update Original Treatment Report for Primary Job)		Bond Log: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES		PSI Applied: Fluid Weight: LBS/GAL	
Shoe Test (Update Original Treatment Report for Primary Job)		Casing Test Pressure: PSI With LBS/GAL Mud		Time Held: Hours Minutes	
Depth Drilled out of Shoe: FT		Target EMW: LBS/GAL		Actual EMW: LBS/GAL	
Number of Times Tests Conducted:		Mud Weight When Test was Conducted: LBS/GAL			

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# CEMENT JOB REPORT



Problems Before Job (I.E. Running Casing, Circulating Well, ETC)

Problems During Job (I.E. Lost Returns, Equipment Failure, Bulk Delivery, Foaming, ETC)

Problems After Job (I.E. Gas at Surface, Float Equipment Failed, ETC)

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:

PRESSURE/RATE DETAIL					EXPLANATION	
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>
	PIPE	ANNULUS				TEST LINES 4500 PSI
						CIRCULATING WELL - RIG <input type="checkbox"/> BJ <input checked="" type="checkbox"/>
14:30						ARRIVE ON LOCATION
17:30						SAFETY MEETING
19:15	4500					PRESSURE TEST LINES
19:20		1900			MUD	PRESSURE TEST BACK SIDE TO 1900 AND HOLD 5 MINS
19:26		2440			MUD	PRESSURE TEST BACK SIDE TO 2440 AND HOLD 5 MINS
19:31						BLEED OFF STING OUT AND PUMP UP BACK SIDE AT 2BPM
19:37	260		2	4	MUD	2 BPM PUMP IN, CHANGE RATE TO 3 BPM
19:39	450		3	6	MUD	3 BPM PUMP IN, CHANGE RATE TO 4 BPM
19:40	650		4	10	MUD	4 BPM PUMP IN, SHUT DOWN AND PUT IN KARBIDE
19:55	4200					PRESSURE TEST LINES
19:59		550				PRESSURE UP BACK SIDE TO 500, START INJECTION TEST
20:06	800	550	2	10	MUD	INJECTION TEST AT 2 BPM, INCREASE TO 3 BPM
20:07	1030	550	3	15	MUD	INJECTION TEST AT 3 BPM, INCREASE TO 4 BPM
20:08	1280	550	4	20	MUD	INJECTION TEST AT 4 BPM
20:14	1080	550	4	40	MUD	INJECTION TEST AT 4 BPM
20:18	1000	550	4	60	MUD	INJECTION TEST AT 4 BPM
20:23	930	550	4	80	MUD	INJECTION TEST AT 4 BPM
20:28	820	550	4	100	MUD	INJECTION TEST AT 4 BPM
20:33	780	550	4	120	MUD	INJECTION TEST AT 4 BPM
20:38	760	550	4	140	MUD	INJECTION TEST AT 4 BPM
20:43	745	550	4	160	MUD	INJECTION TEST AT 4 BPM
20:48	740	550	4	180	MUD	INJECTION TEST AT 4 BPM
20:53	740	550	4	200	MUD	INJECTION TEST AT 4 BPM
20:58	735	550	4	220	MUD	INJECTION TEST AT 4 BPM
21:03	730	550	4	240	MUD	INJECTION TEST AT 4 BPM
21:08	730	550	4	260	MUD	INJECTION TEST AT 4 BPM
21:13	730	550	4	280	MUD	INJECTION TEST AT 4 BPM
21:18	730	550	4	300	MUD	INJECTION TEST AT 4 BPM
21:23	730	550	4	320	MUD	INJECTION TEST AT 4 BPM
21:32	730	550	4	350	MUD	SLOW TO 3 BPM
21:32	480	550	3	354	MUD	SLOW TO 2 BPM
21:33	300	550	2	356	MUD	PUMP 2 BPM AND SHUT DOWN
22:10	0	500				PRESSURE BACK SIDE BACK UP
22:11						START MUD CLEAN
22:17	930	500	4	20	MUD CLN	FINISH MUD CLEAN, START LEAD SLURRY
22:52	1100	500	4	144	LEAD	FINISH LEAD, START TAIL SLURRY
23:01	1100	500	4	54	TAIL	FINISH TAIL SLURRY, START DISPLACEMENT
23:20	2000	500	4	48	MUD	FINISH DISPLACEMENT, STING OUT WITH 900 PSI BELOW RETAINER
23:45	700	0	4	60	MUD	REVERSE OUT DRILL PIPE
						THANK YOU FOR USING BHI
						JUSTIN STAMPER AND CREW

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CEMENT JOB REPORT



PRESSURE/RATE DETAIL						EXPLANATION		
TIME HR.:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>		
	PIPE	ANNULUS				TEST LINES 4500 PSI		
						CIRCULATING WELL - RIG <input type="checkbox"/> BJ <input checked="" type="checkbox"/>		
BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	Service Supervisor Signature:	
Y <input checked="" type="checkbox"/> N		Y <input checked="" type="checkbox"/> N	31	670	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N		



CUSTOMER (COMPANY NAME) SHELL WESTERN E & P INC				CREDIT APPROVAL NO.	PURCHASE ORDER NO.	CUSTOMER NUMBER 20079522 - 00222536	INVOICE NUMBER				
MAIL INVOICE TO		STREET OR BOX NUMBER PO BOX 301440			CITY Houston	STATE Texas	ZIP CODE 77230				
DATE WORK COMPLETED	MO. 11	DAY 29	YEAR 2011	BHI REPRESENTATIVE JUSTIN D STAMPER	WELL API NO: 15077217560000	WELL TYPE : New Well					
DISTRICT McAlester				JOB DEPTH (ft) 5,164	WELL CLASS : Gas						
WELL NAME AND NUMBER SEFFF 3308 #19-1H				TD WELL DEPTH(ft)	GAS USED ON JOB : No Gas						
WELL LOCATION :		LEGAL DESCRIPTION 19-33S-8W	COUNTY/PARISH Harper	STATE Kansas	JOB TYPE CODE : Squeeze-Shoe						
PRODUCT CODE	DESCRIPTION				UNIT OF MEASURE	QUANTITY	LIST PRICE UNIT	GROSS AMOUNT	PERCENT DISC.	NET AMOUNT	
100020	Class C Cement				sacks	361	27.900	10,071.90		4,230.20	
100275	Sodium Metasilicate				lbs	31	3.900	120.90		50.78	
100317	Poz (Fly Ash)				sacks	251	10.450	2,622.95		1,101.64	
100404	Sodium Chloride				lbs	4307	0.490	2,110.43		886.38	
398108	Mud Clean II				gals	840	1.610	1,352.40		568.01	
420145	Bentonite - Sacked				lbs	2316	0.500	1,158.00		486.36	
488015	FL-52				lbs	62	25.600	1,587.20		666.62	
488019	FP-6L				gals	5	99.250	496.25		208.43	
499634	Kol-Seal				lbs	1218	1.130	1,376.34		578.06	
499680	Static Free				lbs	7	38.700	270.90		113.78	
605239	Foam Rubber Ball, 5 inch OD				ea	2	194.500	389.00		163.38	
	SUB-TOTAL FOR Product Material							21,556.27		9,053.64	
A152N	Personnel Per Diem Chrg - Cement Svc				ea	1	161.500	161.50		161.50	
M100	Bulk Materials Service Charge				cu ft	737	4.170	3,073.29		1,290.78	
	SUB-TOTAL FOR Service Charges							3,234.79		1,452.28	
ARRIVE LOCATION :	MO. 11	DAY 28	YEAR 2011	TIME 14:30	SERVICE ORDER: I AUTHORIZE WORK TO BEGIN PER SERVICE INSTRUCTIONS IN ACCORDANCE WITH THE TERMS AND CONDITIONS PRINTED ON THE LAST PAGE OF THIS FORM AND REPRESENT THAT I HAVE AUTHORITY TO ACCEPT AND SIGN THIS ORDER.			SERVICE RECEIPT: I CERTIFY THAT THE MATERIALS AND SERVICES LISTED WERE RECEIVED AND ALL SERVICES PERFORMED IN A WORKMANLIKE MANNER.			
CUSTOMER REP. JOHN BOYD				SEE LAST PAGE FOR GENERAL TERMS AND CONDITIONS			CUSTOMER AUTHORIZED AGENT			<input checked="" type="checkbox"/>	
							CUSTOMER AUTHORIZED AGENT			BHI APPROVED	

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CUSTOMER (COMPANY NAME) SHELL WESTERN E & P INC				CREDIT APPROVAL NO.	PURCHASE ORDER NO.	CUSTOMER NUMBER 20079522 - 00222536	INVOICE NUMBER			
MAIL INVOICE TO		STREET OR BOX NUMBER PO BOX 301440			CITY Houston	STATE Texas	ZIP CODE 77230			
DATE WORK COMPLETED	MO. 11	DAY 29	YEAR 2011	BHI REPRESENTATIVE JUSTIN D STAMPER	WELL API NO: 15077217560000	WELL TYPE : New Well				
DISTRICT McAlester				JOB DEPTH (ft) 5,164	WELL CLASS : Gas					
WELL NAME AND NUMBER SEFFF 3308 #19-1H				TD WELL DEPTH(ft)	GAS USED ON JOB : No Gas					
WELL LOCATION :		LEGAL DESCRIPTION 19-33S-8W	COUNTY/PARISH Harper	STATE Kansas	JOB TYPE CODE : Squeeze-Shoe					
PRODUCT CODE	DESCRIPTION				UNIT OF MEASURE	QUANTITY	LIST PRICE UNIT	GROSS AMOUNT	PERCENT DISC.	NET AMOUNT
F061A	Cement Pumping, 4001 - 5000 ft				6hrs	1	5,375.000	5,375.00		2,257.50
F090	Fuel per pump charge - cement				pump/hr	10	61.000	610.00		610.00
J097	Line Restraint System - Cementing				job	1	750.000	750.00		750.00
J390	Mileage, Heavy Vehicle				miles	400	9.100	3,640.00		1,528.80
J391	Mileage, Auto, Pick-Up or Treating Van				miles	800	5.150	4,120.00		1,730.40
J553	Circulating Equipment				job	1	1,830.000	1,830.00		768.60
K001	Environmental Management-Cust Req Mtls				ea	1	2,000.000	2,000.00		2,000.00
K289	Misc Cement Pumping, Non-Pump Time				hrs	4	477.000	1,908.00		801.36
	SUB-TOTAL FOR Equipment							20,233.00		10,446.66
J401	Bulk Delivery, Dry Products				ton-mi	6060	3.030	18,361.80		7,711.96
	SUB-TOTAL FOR Freight/Delivery Charges							18,361.80		7,711.96
	FIELD ESTIMATE							63,385.86		28,664.54
ARRIVE LOCATION :	MO. 11	DAY 28	YEAR 2011	TIME 14:30	SERVICE ORDER: I AUTHORIZE WORK TO BEGIN PER SERVICE INSTRUCTIONS IN ACCORDANCE WITH THE TERMS AND CONDITIONS PRINTED ON THE LAST PAGE OF THIS FORM AND REPRESENT THAT I HAVE AUTHORITY TO ACCEPT AND SIGN THIS ORDER.			SERVICE RECEIPT: I CERTIFY THAT THE MATERIALS AND SERVICES LISTED WERE RECEIVED AND ALL SERVICES PERFORMED IN A WORKMANLIKE MANNER.		
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SEE LAST PAGE FOR GENERAL TERMS AND CONDITIONS								X BHI APPROVED		

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FIELD RECEIPT NO. 1001870597

CUSTOMER SHELL WESTERN E & P INC		CREDIT APPROVAL NO.	PURCHASE ORDER NO.	CUSTOMER NUMBER 20079522 - 00222536	INVOICE NUMBER
MAIL INVOICE TO	STREET OR BOX NUMBER PO BOX 301440	CITY Houston	STATE Texas	ZIP CODE 77230	
DATE WORK COMPLETED	MO. DAY YEAR 11 29 2011	BHI REPRESENTATIVE JUSTIN D STAMPER	WELL API NO: 15077217560000	WELL TYPE: New Well	
DISTRICT McAlester		JOB DEPTH(ft) 5,164	WELL CLASS: Gas		
WELL NAME AND NUMBER SENF 3308 #19-1H		TD WELL DEPTH(ft)	GAS USED ON JOB: No Gas		
WELL LOCATION:	LEGAL DESCRIPTION 19-33S-8W	COUNTY/PARISH Harper	STATE Kansas	JOB TYPE CODE: Squeeze-Shoe	

PRODUCT CODE	DESCRIPTION	UNIT OF MEASURE	QUANTITY	LIST PRICE UNIT	GROSS AMOUNT	% DISC.	NET AMOUNT
100020	Class C Cement	sacks	361	27.900	10,071.90		4,230.20
100275	Sodium Metasilicate	lbs	31	3.900	120.90		50.78
100317	Poz (Fly Ash)	sacks	251	10.450	2,622.95		1,101.64
100404	Sodium Chloride	lbs	4307	0.490	2,110.43		886.38
398108	Mud Clean II	gals	840	1.610	1,352.40		568.01
420145	Bentonite - Sacked	lbs	2316	0.500	1,158.00		486.36
488015	FL-52	lbs	62	25.600	1,587.20		666.62
488019	FP-6L	gals	5	99.250	496.25		208.43
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499680	Static Free	lbs	7	38.700	270.90		113.78
805239	Foam Rubber Ball, 5 inch OD	ea	2	194.500	389.00		163.38
	SUB-TOTAL FOR Product Material				21,556.27		9,053.64
	Personnel Per Diem Chrg - Cement Svc	ea	1	161.500	161.50		161.50
	Bulk Materials Service Charge	cu ft	737	4.170	3,073.29		1,290.78
	SUB-TOTAL FOR Service Charges				3,234.79		1,452.28

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CUSTOMER REP.			CUSTOMER AUTHORIZED AGENT X
SEE LAST PAGE FOR GENERAL TERMS AND CONDITIONS		CUSTOMER AUTHORIZED AGENT	BHI APPROVED X

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FIELD RECEIPT NO. 1001870597

CUSTOMER SHELL WESTERN E & P INC		CREDIT APPROVAL NO.	PURCHASE ORDER NO.		CUSTOMER NUMBER 20079522 - 00222538		INVOICE NUMBER
MAIL INVOICE TO STREET OR BOX NUMBER PO BOX 301440		CITY Houston		STATE Texas	ZIP CODE 77230		
DATE WORK COMPLETED	MO. 11	DAY 29	YEAR 2011	BHI REPRESENTATIVE JUSTIN D STAMPER	WELL API NO: 15077217560000	WELL TYPE : New Well	
DISTRICT McAlester				JOB DEPTH(ft) 5,164	WELL CLASS : Gas		
WELL NAME AND NUMBER SEFFF 3308 #19-1H				TD WELL DEPTH(ft)	GAS USED ON JOB : No Gas		
WELL LOCATION :	LEGAL DESCRIPTION 19-33S-8W	COUNTY/PARISH Harper	STATE Kansas	JOB TYPE CODE : Squeeze-Shoe			
PRODUCT CODE	DESCRIPTION	UNIT OF MEASURE	QUANTITY	LIST PRICE UNIT	GROSS AMOUNT	% DISC.	NET AMOUNT
F061A	Cement Pumping, 4001 - 5000 ft	6hrs	1	5,375.000	5,375.00		2,257.50
F090	Fuel per pump charge - cement	pump/hr	10	61.000	610.00		610.00
J097	Line Restraint System - Cementing	job	1	750.000	750.00		750.00
J390	Mileage, Heavy Vehicle	miles	400	9.100	3,640.00		1,528.80
J391	Mileage, Auto, Pick-Up or Treating Van	miles	800	5.150	4,120.00		1,730.40
J553	Circulating Equipment	job	1	1,830.000	1,830.00		768.60
K001	Environmental Management-Cust Req Mtls	ea	1	2,000.000	2,000.00		2,000.00
K289	Misc Cement Pumping, Non-Pump Time	hrs	4	477.000	1,908.00		801.38
	SUB-TOTAL FOR Equipment				20,233.00		10,446.66
J401	Bulk Delivery, Dry Products	ton-mi	6060	3.030	18,361.80		7,711.96
	SUB-TOTAL FOR Freight/Delivery Charges				18,361.80		7,711.96
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					CUSTOMER AUTHORIZED AGENT		

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# CEMENT JOB REPORT



CUSTOMER SHELL WESTERN E & P INC		DATE 28-NOV-11	F.R.# 1001870597	SERV. SUPV. JUSTIN D STAMPER	
LEASE & WELL NAME SENF 3308 #19-1H - API 15077217580000		LOCATION 19-33S-8W		COUNTY-PARISH-BLOCK Harper Kansas	
DISTRICT McAlester		DRILLING CONTRACTOR RIG #		TYPE OF JOB Squeeze Shoe	
SIZE & TYPE OF PLUGS		LIST-CSG-HARDWARE		MECHANICAL BARRIERS	
Foam Rubber Ball, 5 inch OD					
MATERIALS FURNISHED BY BJ		LAB REPORT NO.		PHYSICAL SLURRY PROPERTIES	
		SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT <sup>3</sup>	WATER GPS
MUD CLEAN			8.34		
C35:65:6+2PPS KOLSEAL+10% SALT		365	12.4	2.22	12.2
C50:50:2+2PPS KOLSEAL+5% SALT		245	14.2	1.31	5.78
MUD			9.3		
Available Mix Water 800 Bbl.		Available Displ. Fluid 1000 Bbl.		TOTAL 269 139.41	
HOLE		TBC/CSG/D.P.		COLLAR DEPTHS	
SIZE	% EXCESS	DEPTH	ID/OD	WGT	TYPE
8.75		5164	6.366 7	23	CSG
				5164	4510 J-55
LAST CASING		PKR-CMT RET-BR-PL-LINER		PERF. DEPTH	
ID	OD	WGT	TYPE	DEPTH	TOP
8.9	9.63	36		4624	4600
		Cement Retainer		4600	4600
				SIZE	ITHREAD
				2	1502
				WELL FLUID	
				WATER BASED	
				WGT	
				9.3	
DISPL. VOLUME		DISPL. FLUID		CAL. PSI	
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.
48	BBLS	MUD	9.3		
				OPT. MAX	MAX TBC PSI
				1500	10000
				Operator	3500
				RATED	Operator
					3488
				MIX WATER	
				FRAC TANK	
<b>Circulation Prior to Job</b>					
Circulated Well: Rig <input type="checkbox"/> BJ <input checked="" type="checkbox"/>		Circulation Time: 2		Circulation Rate: 4 BPM	
Mud Density In: 9.1 LBS/GAL		Mud Density Out: 8.8 LBS/GAL		PV & YP Mud In:	
Gas Present: NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>		Units:		Solids Present at End of Circulation: NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>	
<b>Displacement And Mud Removal</b>					
Displaced By: Rig <input type="checkbox"/> BJ <input checked="" type="checkbox"/>		Amount Bled Back After Job: 0 BBLS			
Returns During Job: <input type="checkbox"/> NONE <input type="checkbox"/> PARTIAL <input checked="" type="checkbox"/> FULL		Method Used to Verify Returns:			
Cement Returns at Surface: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Were Returns Planned at Surface: <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES			
Pipe Movement: <input type="checkbox"/> ROTATION <input type="checkbox"/> RECIPROICATION <input type="checkbox"/> NONE <input type="checkbox"/> UNABLE DUE TO STUCK PIPE					
Centralizers: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES		Quantity:		Type: <input type="checkbox"/> BOW <input type="checkbox"/> RIGID	
Job Pumped Through: <input type="checkbox"/> CHOKE MANIFOLD <input type="checkbox"/> SQUEEZE MANIFOLD <input type="checkbox"/> MANIFOLD <input type="checkbox"/> NO MANIFOLD					
<b>Plugs</b>					
Number of Attempts by BJ: Competition:		Wiper Balls Used: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES		Quantity:	
Plug Catcher Used: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES		Parabow Used: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES			
Was There a Bottom: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES		Top of Plug: FT		Bottom of Plug: FT	
<b>Squeezes (Update Original Treatment Report for Primary Job)</b>					
BLOCK SQUEEZE <input type="checkbox"/>		SHOE SQUEEZE <input type="checkbox"/>		TOP OF LINER SQUEEZE <input type="checkbox"/>	
Liner Packer: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES		Bond Log: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES		PSI Applied: Fluid Weight: LBS/GAL	
<b>Casing Test (Update Original Treatment Report for Primary Job)</b>					
Casing Test Pressure: PSI		With LBS/GAL Mud		Time Held: Hours Minutes	
<b>Shoe Test (Update Original Treatment Report for Primary Job)</b>					
Depth Drilled out of Shoe: FT		Target EMW: LBS/GAL		Actual EMW: LBS/GAL	
Number of Times Tests Conducted:		Mud Weight When Test was Conducted: LBS/GAL			

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# CEMENT JOB REPORT



Problems Before Job (I.E. Running Casing, Circulating Well, ETC)

Problems During Job (I.E. Lost Returns, Equipment Failure, Bulk Delivery, Foaming, ETC)

Problems After Job (I.E. Gas at Surface, Float Equipment Failed, ETC)

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:

PRESSURE/RATE DETAIL						EXPLANATION	
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW	CO. REP.
	PIPE	ANNULUS				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
						TEST LINES	4500 PSI
						CIRCULATING WELL - RIG	<input type="checkbox"/> BJ <input checked="" type="checkbox"/>
14:30						ARRIVE ON LOCATION	
17:30						SAFETY MEETING	
19:15	4500					PRESSURE TEST LINES	
19:20		1900			MUD	PRESSURE TEST BACK SIDE TO 1900 AND HOLD 5 MINS	
19:26		2440			MUD	PRESSURE TEST BACK SIDE TO 2440 AND HOLD 5 MINS	
19:31						BLEED OFF STING OUT AND PUMP UP BACK SIDE AT 2BPM	
19:37	260		2	4	MUD	2 BPM PUMP IN, CHANGE RATE TO 3 BPM	
19:39	450		3	6	MUD	3 BPM PUMP IN, CHANGE RATE TO 4 BPM	
19:40	650		4	10	MUD	4 BPM PUMP IN, SHUT DOWN AND PUT IN KARBIDE	
19:55	4200					PRESSURE TEST LINES	
19:59		550				PRESSURE UP BACK SIDE TO 500, START INJECTION TEST	
20:06	800	550	2	10	MUD	INJECTION TEST AT 2 BPM, INCREASE TO 3 BPM	
20:07	1030	550	3	15	MUD	INJECTION TEST AT 3 BPM, INCREASE TO 4 BPM	
20:08	1280	550	4	20	MUD	INJECTION TEST AT 4 BPM	
20:14	1080	550	4	40	MUD	INJECTION TEST AT 4 BPM	
20:18	1000	550	4	60	MUD	INJECTION TEST AT 4 BPM	
20:23	930	550	4	80	MUD	INJECTION TEST AT 4 BPM	
20:28	820	550	4	100	MUD	INJECTION TEST AT 4 BPM	
20:33	780	550	4	120	MUD	INJECTION TEST AT 4 BPM	
20:38	760	550	4	140	MUD	INJECTION TEST AT 4 BPM	
20:43	745	550	4	160	MUD	INJECTION TEST AT 4 BPM	
20:48	740	550	4	180	MUD	INJECTION TEST AT 4 BPM	
20:53	740	550	4	200	MUD	INJECTION TEST AT 4 BPM	
20:58	735	550	4	220	MUD	INJECTION TEST AT 4 BPM	
21:03	730	550	4	240	MUD	INJECTION TEST AT 4 BPM	
21:08	730	550	4	260	MUD	INJECTION TEST AT 4 BPM	
21:13	730	550	4	280	MUD	INJECTION TEST AT 4 BPM	
21:18	730	550	4	300	MUD	INJECTION TEST AT 4 BPM	
21:23	730	550	4	320	MUD	INJECTION TEST AT 4 BPM	
21:32	730	550	4	350	MUD	SLOW TO 3 BPM	
21:32	480	550	3	354	MUD	SLOW TO 2 BPM	
21:33	300	550	2	358	MUD	PUMP 2 BPM AND SHUT DOWN	
22:10	0	500				PRESSURE BACK SIDE BACK UP	
22:11						START MUD CLEAN	
22:17	930	500	4	20	MUD CLN	FINISH MUD CLEAN, START LEAD SLURRY	
22:52	1100	500	4	144	LEAD	FINISH LEAD, START TAIL SLURRY	
23:01	1100	500	4	54	TAIL	FINISH TAIL SLURRY, START DISPLACMENT	
23:20	2000	500	4	48	MUD	FINISH DISPLACMENT, STING OUT WITH 900 PSI BELOW RETAINER	
23:45	700	0	4	60	MUD	REVERSE OUT DRILL PIPE	
						THANK YOU FOR USING BHI	
						JUSTIN STAMPER AND CREW	

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CEMENT JOB REPORT



PRESSURE/RATE DETAIL					EXPLANATION		
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>	
	PIPE	ANNULUS				TEST LINES	4500 PSI
						CIRCULATING WELL - RIG <input type="checkbox"/> BJ <input checked="" type="checkbox"/>	
BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL CMT RETURNS/ REVERSED	TOTAL BBL PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	Service Supervisor Signature:
Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	31	670	0	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	<i>[Signature]</i>

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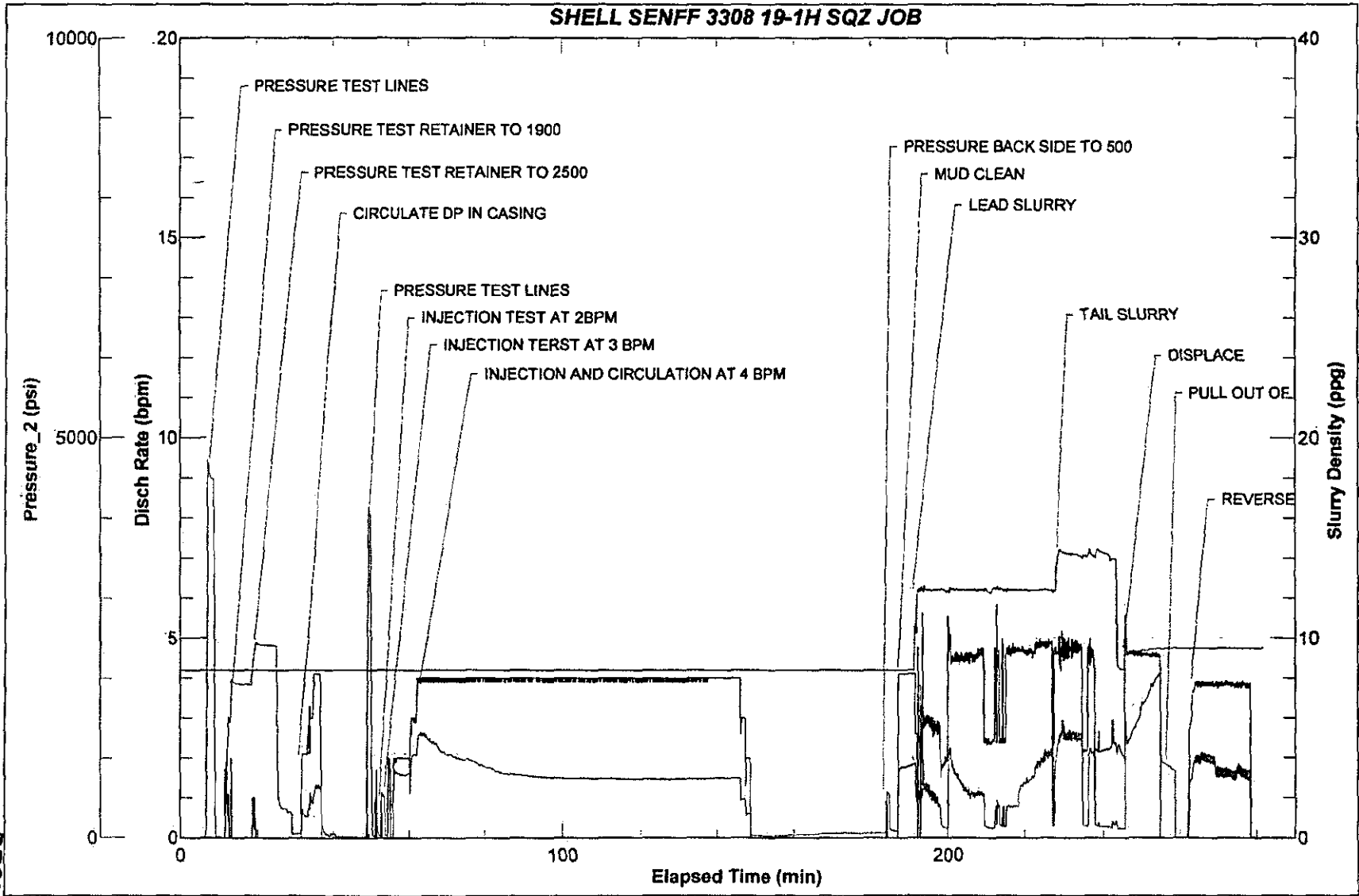
BJ Services JobMaster Program Version 3.50

Job Number: 1001870597

Customer: SHELL

Well Name: SENFF 3308 19-1H

SHELL SENFF 3308 19-1H SQZ JOB



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Job Start: Monday, November 28, 2011

**HALLIBURTON****Design Report for Senff 3308 #19-1H / Job #8486596 / Nabors 180 - Wellbore #1*****Targets associated with this design***

Target Name	TVD ( )	+N/-S ( )	+E/-W ( )	Shape
-------------	------------	--------------	--------------	-------

**Directional Difficulty Index**

Average Dogleg over Survey:	2.01 °/100ft	Maximum Dogleg over Survey:	11.89 °/100ft at 4,725.00 ft
Net Tortousity applicable to Plans:	0.83 °/100ft	Directional Difficulty Index:	6.178

**Audit Info**

# HALLIBURTON

## North Reference Sheet for Sec 19-T33S-R08W - Senff 3308 #19-1H / Job #8486596 / Nabors 180 - Wellbore #1

All data is in Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to rkb @ 1339.50ft. Northing and Easting are relative to Senff 3308 #19-1H / Job #8486596 / Nabors 180

Coordinate System is US State Plane 1927 (Exact solution), Kansas South 1502 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -98.50°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:37° 16' 0.000 N°

False Easting: 2,000,000.00ft, False Northing: 0.00ft, Scale Reduction: 1.00002416

Grid Coordinates of Well: 177,395.16 ft N, 2,079,397.75 ft E

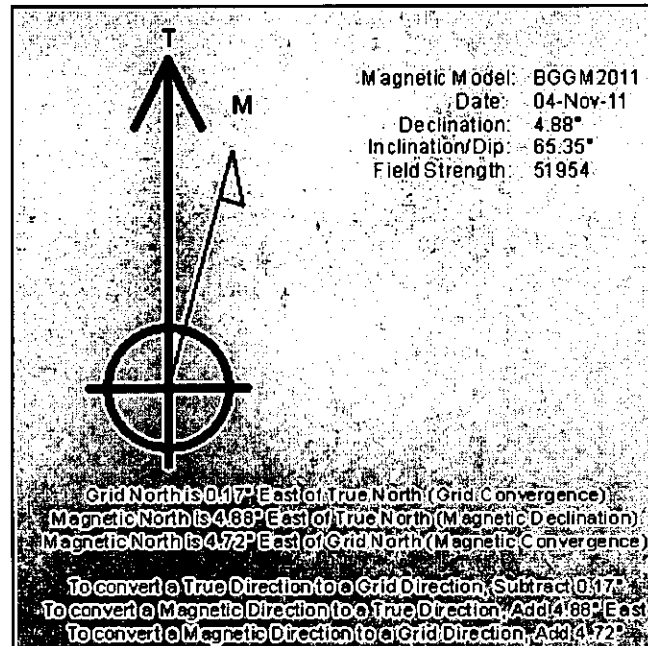
Geographical Coordinates of Well: 37° 09' 12.74" N, 098° 13' 39.30" W

Grid Convergence at Surface is: 0.17°

Based upon Minimum Curvature type calculations, at a Measured Depth of 8,623.00ft

the Bottom Hole Displacement is 4,488.56ft in the Direction of 358.19° (True).

Magnetic Convergence at surface is: -4.72° ( 4 November 2011, , BGGM2011)



# sperry-sun DRILLING SERVICES

## Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

**CURRENT STATUS** Report # 30 12/9/2011

<b>Total Depth</b> (ft) : 8623	<b>Casing Depth</b> (ft) : 5152.00	<b>Operator Reps</b> : Lee Rother, Robert Hurst
<b>Drilled last 24 hrs</b> (ft) : 143	<b>Casing Diameter</b> (in) : 7.000	<b>SSDS Reps</b> : Charlie Basden (30), Travis Basden (30)
<b>Hole Size</b> (in) : 6.125	<b>Casing ID</b> (in) :	

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
8623.00	92.04	358.08	4490.91	4488.56	N01.81W

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

BHA 5: 4237.85 ft; Bit #4 (95. hrs), PDM # (100.25 hrs), Sub, Sub, Other, Sub, Sub, 1x DC, Sub, 1x DC, Sub, Sub, DP (S), HWDP

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	8.7	301	1	3.0	2.0 / 4.0	8	8.4	2.50	0.25	

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	07:00	1.00	8512.00	5	Rotate 32'
07:00	07:15	0.25	8512.00	5	Deviation Survey
07:15	07:30	0.25	8530.00	5	Rotate 18'
07:30	08:00	0.50	8530.00	5	Waiting on Orders Conference Call
08:00	10:15	2.25	8623.00	5	Rotate to TD
10:15	10:30	0.25	8623.00	5	Deviation Survey
10:30	12:45	2.25	8623.00	5	Circulate -- Prepare to trip and lay down directional tools.
12:45	19:30	6.75	8623.00	5	Trip Out (at Surface)
19:30	23:00	3.50	8623.00	5	PU/LD BHA
23:00	00:00	1.00	8623.00	5	Rig Up / Tear Down
00:00	06:00	6.00	8623.00	5	No Activity

**COMMENTS**

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 ADR Resistivity \$1500 Pressure while drilling \$1500  
 Motor Inspection for BHA 5 = \$1500  
  
 Field estimate daily charge = \$16,600  
 Field estimate job total = \$365,825



# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

#### CURRENT STATUS Report # 29 12/8/2011

Total Depth (ft) :	8480	Casing Depth (ft) :	5152.00	Operator Reps :	Lee Rother, Robert Hurst
Drilled last 24 hrs (ft) :	982	Casing Diameter (in) :	7.000	SSDS Reps :	Charlie Basden (29), Travis Basden (29)
Hole Size (in) :	6.125	Casing ID (in) :			

#### LAST SURVEY

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
8431.00	90.74	359.04	4496.48	4296.65	N01.82W

#### LAST FORMATION TOP

Formation Name	MD Top (ft)	TVD Top (ft)

#### BHA SUMMARY

BHA 5: 4237.85 ft; Bit #4 (91.5 hrs), PDM # (94.5 hrs), Sub, Sub, Other, Sub, Sub, 1x DC, Sub, 1x DC, Sub, Sub, DP (S), HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>3</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	8.8	31	2	1.0	2.0 / 4.0		8.5	3.50	0.25	

#### TIME BREAKDOWN

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	07:15	1.25	7562.00	5	Rotate 64'
07:15	07:30	0.25	7562.00	5	Deviation Survey
07:30	10:00	2.50	7657.00	5	Rotate 95'
10:00	10:15	0.25	7657.00	5	Deviation Survey
10:15	12:15	2.00	7752.00	5	Rotate 95'
12:15	12:30	0.25	7752.00	5	Cut Drill Line
12:30	13:45	1.25	7784.00	5	Slide 32' @ 160L
13:45	15:15	1.50	7847.00	5	Rotate 63'
15:15	15:30	0.25	7847.00	5	Deviation Survey
15:30	17:00	1.50	7942.00	5	Rotate 95'
17:00	17:15	0.25	7942.00	5	Deviation Survey
17:15	19:15	2.00	8037.00	5	Rotate 95'
19:15	19:30	0.25	8037.00	5	Deviation Survey
19:30	20:00	0.50	8047.00	5	Slide 10' @ 160R
20:00	21:45	1.75	8132.00	5	Rotate 85'
21:45	22:00	0.25	8132.00	5	Deviation Survey
22:00	22:45	0.75	8157.00	5	Slide 25' @ 90R
22:45	00:15	1.50	8227.00	5	Rotate 70'
00:15	00:45	0.50	8227.00	5	Service Rig
00:45	01:00	0.25	8227.00	5	Deviation Survey
01:00	01:30	0.50	8237.00	5	Slide 10' @ 160R
01:30	02:15	0.75	8290.00	5	Rotate 53'
02:15	02:45	0.50	8315.00	5	Slide 25' @ 90R

#### COMMENTS

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 ADR Resistivity \$1500 Pressure while drilling \$1500

Field estimate daily charge = \$15,100  
 Field estimate job total = \$349,225

**CURRENT STATUS Report # 29 12/8/2011**

<b>Total Depth (ft) :</b> 8480	<b>Casing Depth (ft) :</b> 5152.00	<b>Operator Reps :</b> Lee Rother, Robert Hurst
<b>Drilled last 24 hrs (ft) :</b> 982	<b>Casing Diameter (in) :</b> 7.000	<b>SSDS Reps :</b> Charlie Basden (29), Travis Basden (29)
<b>Hole Size (in) :</b> 6.125	<b>Casing ID (in) :</b>	

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
8431.00	90.74	359.04	4496.48	4296.65	N01.82W

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

BHA 5: 4237.85 ft; Bit #4 (91.5 hrs), PDM # (94.5 hrs), Sub, Sub, Other, Sub, Sub, 1x DC, Sub, 1x DC, Sub, Sub, DP (S), HWDP

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>3</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	8.8	31	2	1.0	2.0 / 4.0		8.5	3.50	0.25	

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
02:45	03:00	0.25	8322.00	5	Rotate 7'
03:00	03:15	0.25	8322.00	5	Deviation Survey
03:15	03:45	0.50	8353.00	5	Rotate 31'
03:45	04:15	0.50	8375.00	5	Slide 22' @ 120R
04:15	05:00	0.75	8417.00	5	Rotate 32'
05:00	05:15	0.25	8417.00	5	Deviation Survey
05:15	06:00	0.75	8480.00	5	Rotate 63'

**COMMENTS**

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 ADR Resistivity \$1500 Pressure while drilling \$1500

Field estimate daily charge = \$15,100

Field estimate job total = \$349,225

# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

**CURRENT STATUS** Report # 28 12/7/2011

Total Depth (ft) : 7498	Casing Depth (ft) : 5152.00	Operator Reps : Lee Rother, Ray Hawkins
Drilled last 24 hrs (ft) : 697	Casing Diameter (in) : 7.000	SSDS Reps : Charlie Basden (28), Travis Basden (28)
Hole Size (in) : 6.125	Casing ID (in) :	

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
7481.00	89.01	358.77	4501.91	3346.95	N01.77W

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

BHA 5: 4237.85 ft; Bit #4 (70.5 hrs), PDM # (73.5 hrs), Sub, Sub, Other, Sub, Sub, 1x DC, Sub, 1x DC, Sub, Sub, DP (S), HWDP

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	8.8	31	2	1.0	2.0 / 4.0		8.6	3.50	0.75	

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	06:45	0.75	6801.00	5	Reaming / Washing
06:45	09:00	2.25	6865.00	5	Rotate 64'
09:00	09:15	0.25	6865.00	5	Deviation Survey CHECK SHOT ONLY
09:15	10:00	0.75	6896.00	5	Rotate 31'
10:00	10:15	0.25	6896.00	5	Deviation Survey
10:15	11:30	1.25	6960.00	5	Rotate 64'
11:30	11:45	0.25	6960.00	5	Deviation Survey CHECK SHOT ONLY
11:45	12:45	1.00	6988.00	5	Slide 28' @ 180
12:45	13:30	0.75	6988.00	5	Miscellaneous Lost all Pump Pressure
13:30	15:15	1.75	6991.00	5	Rotate 3'
15:15	15:30	0.25	6991.00	5	Deviation Survey CHECK SHOT ONLY
15:30	16:15	0.75	7086.00	5	Rotate 95'
16:15	16:30	0.25	7086.00	5	Deviation Survey
16:30	18:00	1.50	7149.00	5	Rotate 63'
18:00	18:15	0.25	7149.00	5	Deviation Survey CHECK SHOT ONLY
18:15	19:15	1.00	7181.00	5	Slide 31' @ 160R
19:15	19:30	0.25	7181.00	5	Deviation Survey
19:30	20:15	0.75	7213.00	5	Rotate 32'
20:15	21:15	1.00	7244.00	5	Slide 31' @ 160R
21:15	22:00	0.75	7276.00	5	Rotate 32'
22:00	23:00	1.00	7276.00	5	Service Rig -- Check wash pipe on top drive
23:00	23:15	0.25	7276.00	5	Deviation Survey
23:15	00:30	1.25	7339.00	5	Rotate 63'

**COMMENTS**

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 ADR Resistivity \$1500 Pressure while drilling \$1500

Field estimate daily charge = \$15,100  
 Field estimate job total = \$334,125

**CURRENT STATUS Report # 28 12/7/2011**

<b>Total Depth (ft) :</b> 7498	<b>Casing Depth (ft) :</b> 5152.00	<b>Operator Reps :</b> Lee Rother, Ray Hawkins
<b>Drilled last 24 hrs (ft) :</b> 697	<b>Casing Diameter (in) :</b> 7.000	<b>SSDS Reps :</b> Charlie Basden (28), Travis Basden (28)
<b>Hole Size (in) :</b> 6.125	<b>Casing ID (in) :</b>	

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
7481.00	89.01	358.77	4501.91	3346.95	N01.77W

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

BHA 5: 4237.85 ft; Bit #4 (70.5 hrs), PDM # (73.5 hrs), Sub, Sub, Other, Sub, Sub, 1x DC, Sub, 1x DC, Sub, Sub, DP (S), HWDP

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	8.8	31	2	1.0	2.0 / 4.0		8.6	3.50	0.75	

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
00:30	00:45	0.25	7339.00	5	Deviation Survey CHECK SHOT ONLY
00:45	01:30	0.75	7371.00	5	Rotate 32'
01:30	01:45	0.25	7371.00	5	Deviation Survey
01:45	02:30	0.75	7403.00	5	Slide 32' @ 150R
02:30	04:45	2.25	7466.00	5	Rotate 63'
04:45	05:00	0.25	7466.00	5	Deviation Survey
05:00	06:00	1.00	7498.00	5	Slide 30' @ 90R

**COMMENTS**

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 ADR Resistivity \$1500 Pressure while drilling \$1500

Field estimate daily charge = \$15,100  
 Field estimate job total = \$334,125

# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

#### CURRENT STATUS Report # 27 12/6/2011

Total Depth (ft) : 6801	Casing Depth (ft) : 5152.00	Operator Reps : Lee Rother, Ray Hawkins
Drilled last 24 hrs (ft) : 253	Casing Diameter (in) : 7.000	SSDS Reps : Charlie Basden (27), Travis Basden (27)
Hole Size (in) : 6.125	Casing ID (in) :	

#### LAST SURVEY

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
6720.00	90.06	359.76	4511.71	2586.54	N01.57W

#### LAST FORMATION TOP

Formation Name	MD Top (ft)	TVD Top (ft)

#### BHA SUMMARY

BHA 5: 4237.85 ft; Bit #4 (51. hrs), PDM # (54. hrs), Sub, Sub, Other, Sub, Sub, 1x DC, Sub, 1x DC, Sub, Sub, DP (S), HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.2	53	17	15.0	9.0 / 21.0		9.8	6.50	0.25	

#### TIME BREAKDOWN

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	06:30	0.50	6580.00	5	Rotate 32'
06:30	07:45	1.25	6580.00	5	Tool Repair Change Transducer
07:45	08:15	0.50	6580.00	5	Miscellaneous Conference Call
08:15	10:15	2.00	6612.00	5	Slide 32' @ 150R
10:15	10:30	0.25	6612.00	5	Deviation Survey
10:30	11:30	1.00	6643.00	5	Rotate 31'
11:30	12:00	0.50	6643.00	5	Deviation Survey CHECK SHOT ONLY
12:00	12:45	0.75	6658.00	5	Slide 15' @ 30R
12:45	14:00	1.25	6706.00	5	Rotate 52'
14:00	15:30	1.50	6733.00	5	Slide 27' @ 20L
15:30	17:30	2.00	6801.00	5	Rotate 68'
17:30	17:45	0.25	6801.00	5	Deviation Survey
17:45	20:15	2.50	6801.00	5	Circulate -- Prepare to short trip and rearrange push pipe.
20:15	23:30	3.25	6801.00	5	Trip Out
23:30	01:15	1.75	6801.00	5	Service Rig
01:15	04:15	3.00	6801.00	5	Trip In
04:15	06:00	1.75	6801.00	5	Reaming / Washing from 6480' MD

#### COMMENTS

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 ADR Resistivity \$1500 Pressure while drilling \$1500

Field estimate daily charge = \$15,100  
 Field estimate job total = \$319,025

# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

#### CURRENT STATUS Report # 26 12/5/2011

Total Depth (ft) :	6548	Casing Depth (ft) :	5152.00	Operator Reps :	Lee Rother, Ray Hawkins
Drilled last 24 hrs (ft) :	633	Casing Diameter (in) :	7.000	SSDS Reps :	Charlie Basden (26), Travis Basden (26)
Hole Size (in) :	6.125	Casing ID (in) :			

#### LAST SURVEY

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
6531.00	90.12	358.85	4507.38	2397.66	N01.67W

#### LAST FORMATION TOP

Formation Name	MD Top (ft)	TVD Top (ft)

#### BHA SUMMARY

BHA 5: 4237.85 ft; Bit #4 (40.25 hrs), PDM # (40.75 hrs), Sub, Sub, Other, Sub, Sub, 1x DC, Sub, 1x DC, Sub, Sub, DP (S), HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.2	53	17	15.0	9.0 / 21.0		9.8	6.50	0.25	

#### TIME BREAKDOWN

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	07:00	1.00	5947.00	5	Slide 32' @ 150gtf
07:00	07:15	0.25	5947.00	5	Deviation Survey Most survey require recycling pumps 2-3 times
07:15	08:00	0.75	5979.00	5	Rotate 32'
08:00	08:30	0.50	5979.00	5	Deviation Survey Could not sync up
08:30	10:15	1.75	6042.00	5	Rotate 63'
10:15	11:30	1.25	6042.00	5	Deviation Survey
11:30	12:30	1.00	6042.00	5	Tool Repair Change MWD Transducer
12:30	13:30	1.00	6062.00	5	Sliding 20' @90gtf
13:30	14:15	0.75	6105.00	5	Rotate 43'
14:15	14:30	0.25	6105.00	5	Deviation Survey Check Shot Only
14:30	15:30	1.00	6137.00	5	Rotate 32'
15:30	16:00	0.50	6137.00	5	Deviation Survey
16:00	17:00	1.00	6168.00	5	Slide 31' @ 30R
17:00	18:45	1.75	6232.00	5	Rotate 64'
18:45	19:15	0.50	6232.00	5	Circulate - Get SPRs then make a connection
19:15	19:30	0.25	6232.00	5	Deviation Survey
19:30	20:15	0.75	6263.00	5	Rotate 31'
20:15	20:30	0.25	6263.00	5	Checkshot survey
20:30	22:15	1.75	6327.00	5	Rotate 64'
22:15	22:30	0.25	6327.00	5	Deviation Survey and connection
22:30	23:15	0.75	6352.00	5	Slide 25' @ 180
23:15	01:15	2.00	6422.00	5	Rotate 70'
01:15	01:30	0.25	6422.00	5	Deviation Survey - Could not get survey

#### COMMENTS

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 ADR Resistivity \$1500 Pressure while drilling \$1500

Field estimate daily charge = \$15,100  
 Field estimate job total = \$303,925

**CURRENT STATUS Report # 26 12/5/2011**

<b>Total Depth (ft) :</b> 6548	<b>Casing Depth (ft) :</b> 5152.00	<b>Operator Reps :</b> Lee Rother, Ray Hawkins
<b>Drilled last 24 hrs (ft) :</b> 633	<b>Casing Diameter (in) :</b> 7.000	<b>SSDS Reps :</b> Charlie Basden (26), Travis Basden (26)
<b>Hole Size (in) :</b> 6.125	<b>Casing ID (in) :</b>	

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
6531.00	90.12	358.85	4507.38	2397.66	N01.67W

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

BHA 5: 4237.85 ft; Bit #4 (40.25 hrs), PDM # (40.75 hrs), Sub, Sub, Other, Sub, Sub, 1x DC, Sub, 1x DC, Sub, Sub, DP (S), HWDP

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.2	53	17	15.0	9.0 / 21.0		9.8	6.50	0.25	

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
01:30	02:00	0.50	6422.00	5	Misc Directional Work – Change out transducer. Standpipe frozen.
02:00	02:15	0.25	6422.00	5	Deviation Survey
02:15	03:45	1.50	6485.00	5	Rotate 63°
03:45	04:00	0.25	6485.00	5	Checkshot survey
04:00	04:45	0.75	6517.00	5	Rotate 32°
04:45	05:00	0.25	6517.00	5	Deviation Survey and connection
05:00	06:00	1.00	6548.00	5	Slide 31' @ 150R

**COMMENTS**

Day Rate	\$10,800	EM MWD	\$ 500
Per Diem	\$ 300	Filter Sub	\$ 500
ADR Resistivity \$1500 Pressure while drilling \$1500			
Field estimate daily charge = \$15,100			
Field estimate job total = \$303,925			

# Sperry-Sun DRILLING SERVICES

## Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

**CURRENT STATUS** Report # 25 12/4/2011

Total Depth (ft) : 5915	Casing Depth (ft) : 5152.00	Operator Reps : Lee Rother, Ray Hawkins
Drilled last 24 hrs (ft) : 646	Casing Diameter (in) : 7.000	SSDS Reps : Charlie Basden (25), Travis Basden (25)
Hole Size (in) : 6.125	Casing ID (in) :	

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
5866.00	88.46	358.15	4490.74	1733.37	N02.10W

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

BHA 5: 4237.85 ft; Bit #4 (22.75 hrs), PDM # (22.75 hrs), Sub, Sub, Other, Sub, Sub, 1x DC, Sub, 1x DC, Sub, Sub, DP (S), HWDP

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>3</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.2	53	17	15.0	9.0 / 21.0		9.8	6.50	0.25	

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	06:30	0.50	5269.00	5	Trouble Shoot MWD
06:30	07:15	0.75	5279.00	5	Slide 10' @ 180gtf
07:15	07:30	0.25	5283.00	5	Rotate 4'
07:30	07:45	0.25	5283.00	5	Deviation Survey and connection
07:45	08:30	0.75	5314.00	5	Rotate 31'
08:30	08:45	0.25	5314.00	5	Deviation Survey
08:45	09:30	0.75	5329.00	5	Slide 15' @ 180gtf
09:30	10:45	1.25	5378.00	5	Rotate 49'
10:45	11:00	0.25	5378.00	5	Deviation Survey and connection
11:00	12:00	1.00	5403.00	5	Slide 25' @ 180gtf
12:00	13:00	1.00	5441.00	5	Rotate 38'
13:00	13:30	0.50	5461.00	5	Slide 20' @180gtf
13:30	14:00	0.50	5473.00	5	Rotate 12'
14:00	14:15	0.25	5473.00	5	Deviation Survey and connection
14:15	16:30	2.25	5568.00	5	Rotate 95'
16:30	16:45	0.25	5568.00	5	Deviation Survey and connection
16:45	17:30	0.75	5599.00	5	Rotate 31'
17:30	19:30	2.00	5639.00	5	Slide 40' @ 150R
19:30	20:15	0.75	5662.00	5	Rotate 33'
20:15	21:00	0.75	5662.00	5	Deviation Survey and connection -- Issues getting survey
21:00	21:45	0.75	5692.00	5	Slide 30' @ 150R
21:45	23:15	1.50	5757.00	5	Rotate 65'
23:15	23:30	0.25	5757.00	5	Deviation Survey and connection

**COMMENTS**

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 ADR Resistivity \$1500 Pressure while drilling \$1500

Field estimate daily charge = \$15,100  
 Field estimate job total = \$288,825



**CURRENT STATUS Report # 25 12/4/2011**

<b>Total Depth (ft) :</b>	5915	<b>Casing Depth (ft) :</b>	5152.00	<b>Operator Reps :</b>	Lee Rother, Ray Hawkins
<b>Drilled last 24 hrs (ft) :</b>	646	<b>Casing Diameter (in) :</b>	7.000	<b>SSDS Reps :</b>	Charlie Basden (25), Travis Basden (25)
<b>Hole Size (in) :</b>	6.125	<b>Casing ID (in) :</b>			

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
5866.00	88.46	358.15	4490.74	1733.37	N02.10W

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

BHA 5: 4237.85 ft; Bit #4 (22.75 hrs), PDM # (22.75 hrs), Sub, Sub, Other, Sub, Sub, 1x DC, Sub, 1x DC, Sub, Sub, DP (S), HWDP

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.2	53	17	15.0	9.0 / 21.0		9.8	6.50	0.25	

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
23:30	00:15	0.75	5789.00	5	Rotate 32'
00:15	01:00	0.75	5814.00	5	Slide 25' @ 90R
01:00	02:00	1.00	5852.00	5	Rotate 38'
02:00	02:30	0.50	5852.00	5	Deviation Survey and connection
02:30	03:45	1.25	5877.00	5	Slide 25' @ 150R
03:45	06:00	2.25	5915.00	5	Rotate 32'

**COMMENTS**

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 ADR Resistivity \$1500 Pressure while drilling \$1500

Field estimate daily charge = \$15,100

Field estimate job total = \$288,825

# sperry-sun DRILLING SERVICES

## Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

**CURRENT STATUS** Report # 24 12/3/2011

Total Depth (ft) : 5269	Casing Depth (ft) : 5152.00	Operator Reps : Lee Rother, Ray Hawkins
Drilled last 24 hrs (ft) : 102	Casing Diameter (in) : 7.000	SSDS Reps : Charlie Basden (24), Travis Basden (24)
Hole Size (in) : 6.125	Casing ID (in) :	

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
5233.00	93.03	355.64	4500.33	1102.16	N00.51W

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

BHA 5: 4237.85 ft; Bit #4 (2. hrs), PDM # (2. hrs), Sub, Sub, Other, Sub, Sub, 1x DC, Sub, 1x DC, Sub, Sub, DP (S), HWDP

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.2	53	17	15.0	9.0 / 21.0		9.8	6.50	0.25	

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	14:45	8.75	5167.00		Run Casing / Cement Standby
14:45	18:15	3.50	5167.00	5	PU BHA #5
18:15	00:00	5.75	5167.00	5	Trip In
00:00	01:30	1.50	5167.00	5	Install rotating rubber
01:30	02:30	1.00	5167.00	5	Trip In
02:30	04:30	2.00	5269.00	5	Rotate 84'
04:30	05:00	0.50	5269.00	5	Attempt Survey
05:00	06:00	1.00	5269.00	5	Trouble Shoot MWD

**COMMENTS**

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 ADR Resistivity \$1500 Tubular recuts & Inspection \$3675  
 Pressure while drilling \$1500 EM Batteries \$4000  
 Pressure while drilling Maintenance \$1000 ADR Maintenance \$1000  
 Field estimate daily charge = \$24,775  
 Field estimate job total = \$273,725

# sperry-sun DRILLING SERVICES

## Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

### CURRENT STATUS Report # 23 12/2/2011

Total Depth (ft) :	5167	Casing Depth (ft) :	5152.00	Operator Reps :	Lee Rother, Ray Hawkins
Drilled last 24 hrs (ft) :	0	Casing Diameter (in) :	7.000	SSDS Reps :	Charlie Basden (23), Travis Basden (23)
Hole Size (in) :		Casing ID (in) :			

### LAST SURVEY

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
5104.00	91.54	356.53	4505.46	973.54	N00.04W

### LAST FORMATION TOP

Formation Name	MD Top (ft)	TVD Top (ft)

### BHA SUMMARY

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### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>3</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.2	53	17	15.0	9.0 / 21.0		9.8	6.50	0.25	

### TIME BREAKDOWN

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	06:00	24.00	5167.00		Standby -- Intermediate casing break

### COMMENTS

Stand-By \$6,500  
 Per Diem \$ 300

Field estimate daily charge = \$6,800  
 Field estimate job total = \$248,950



# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

CURRENT STATUS Report # 21 11/30/2011

Total Depth (ft) :	5167	Casing Depth (ft) :	5152.00	Operator Reps :	Lee Rother, Ray Hawkins
Drilled last 24 hrs (ft) :	0	Casing Diameter (in) :	7.000	SSDS Reps :	Charlie Basden (21), Travis Basden (21)
Hole Size (in) :		Casing ID (in) :			

LAST SURVEY

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
5104.00	91.54	356.53	4505.46	973.54	N00.04W

LAST FORMATION TOP

Formation Name	MD Top (ft)	TVD Top (ft)

BHA SUMMARY

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MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.2	53	17	15.0	9.0 / 21.0		9.8	6.50	0.25	

TIME BREAKDOWN

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	06:00	24.00	5167.00		Standby -- Intermediate casing break

COMMENTS

Stand-By \$6,500  
 Per Diem \$ 300

Field estimate daily charge = \$6,800  
 Field estimate job total = \$235,350

# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

#### CURRENT STATUS Report # 20 11/29/2011

Total Depth (ft) :	5167	Casing Depth (ft) :	5152.00	Operator Reps :	Lee Rother, Ray Hawkins
Drilled last 24 hrs (ft) :	0	Casing Diameter (in) :	7.000	SSDS Reps :	Charlie Basden (20), Travis Basden (20)
Hole Size (in) :		Casing ID (in) :			

#### LAST SURVEY

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
5104.00	91.54	356.53	4505.46	973.54	N00.04W

#### LAST FORMATION TOP

Formation Name	MD Top (ft)	TVD Top (ft)

#### BHA SUMMARY

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#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.2	53	17	15.0	9.0 / 21.0		9.8	6.50	0.25	

#### TIME BREAKDOWN

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	06:00	24.00	5167.00		Standby -- Intermediate casing break

#### COMMENTS

Stand-By \$6,500  
 Per Diem \$ 300

Field estimate daily charge = \$6,800  
 Field estimate job total = \$228,550



# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

**CURRENT STATUS** Report # 18 11/27/2011

Total Depth (ft) :	5167	Casing Depth (ft) :	5152.00	Operator Reps :	John Boyd, Ray Hawkins
Drilled last 24 hrs (ft) :	0	Casing Diameter (in) :	7.000	SSDS Reps :	Charlie Basden (18), Travis Basden (18)
Hole Size (in) :		Casing ID (in) :			

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
5104.00	91.54	356.53	4505.46	973.54	N00.04W

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

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**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.2	53	17	15.0	9.0 / 21.0		9.8	6.50	0.25	

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	06:00	24.00	5167.00		Standby -- Intermediate casing break

**COMMENTS**

Stand-By \$6,500  
 Per Diem \$ 300

Field estimate daily charge = \$6,800  
 Field estimate job total = \$214,950



# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

CURRENT STATUS Report # 17 11/26/2011

Total Depth (ft) :	5167	Casing Depth (ft) :	5152.00	Operator Reps :	John Boyd, Ray Hawkins
Drilled last 24 hrs (ft) :	0	Casing Diameter (in) :	7.000	SSDS Reps :	Charlie Basden (17), Travis Basden (17)
Hole Size (in) :		Casing ID (in) :			

#### LAST SURVEY

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
5104.00	91.54	356.53	4505.46	973.54	N00.04W

#### LAST FORMATION TOP

Formation Name	MD Top (ft)	TVD Top (ft)

#### BHA SUMMARY

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#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.2	53	17	15.0	9.0 / 21.0		9.8	6.50	0.25	

#### TIME BREAKDOWN

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	06:00	24.00	5167.00		Standby -- Intermediate Casing Break

#### COMMENTS

Stand-By \$6,500  
 Per Diem \$ 300

Field estimate daily charge = \$6,800  
 Field estimate job total = \$208,150

# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

#### CURRENT STATUS Report # 16 11/25/2011

Total Depth (ft) :	5167	Casing Depth (ft) :	5152.00	Operator Reqs :	John Boyd, Robert Hurst
Drilled last 24 hrs (ft) :	0	Casing Diameter (in) :	7.000	SSDS Reqs :	Charlie Basden (16), Travis Basden (16)
Hole Size (in) :	8.750	Casing ID (in) :			

#### LAST SURVEY

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
5104.00	91.54	356.53	4505.46	973.54	N00.04W

#### LAST FORMATION TOP

Formation Name	MD Top (ft)	TVD Top (ft)

#### BHA SUMMARY

BHA 4: 2699.24 ft; Bit #3rr1 (43.5 hrs), PDM # (53.75 hrs), Sub, Sub, Sub, Pony, Flex, Flex, Sub, Sub, 1x DC, Sub, Sub, DP (S), HWDP, Sub, HWDP

#### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.2	53	17	15.0	9.0 / 21.0		9.8	6.50	0.25	

#### TIME BREAKDOWN

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	08:30	2.50	5167.00	4	Trip Out (at Surface)
08:30	10:30	2.00	5167.00	4	PU/LD BHA
10:30	11:00	0.50	5167.00	4	Misc Directional Work Download MWD
11:00	11:30	0.50	5167.00	4	PU/LD BHA
11:30	06:00	18.50	5167.00		Run Casing / Cement

#### COMMENTS

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 EWR Phase 4 Resistivity \$1500 Pressure while drilling \$1500

Field estimate daily charge = \$15,100  
 Field estimate job total = \$201,350

# sperry-sun DRILLING SERVICES

## Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

**CURRENT STATUS** Report # 15 11/24/2011

Total Depth (ft) : 5167	Casing Depth (ft) : 5152.00	Operator Reps : John Boyd, Robert Hurst
Drilled last 24 hrs (ft) : 671	Casing Diameter (in) : 7.000	SSDS Reps : Charlie Basden (15), Travis Basden (15)
Hole Size (in) : 8.750	Casing ID (in) :	

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
5104.00	91.54	356.53	4505.46	973.54	N00.04W

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

BHA 4: 2699.24 ft; Bit #3rr1 (43.5 hrs), PDM # (53.75 hrs), Sub, Sub, Sub, Pony, Flex, Flex, Sub, Sub, 1x DC, Sub, Sub, DP (S), HWDP, Sub, HWDP

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.2	53	17	15.0	9.0 / 21.0		9.8	6.50	0.25	

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	06:30	0.50	4562.00	4	Slide 66' @ 1gff
06:30	07:30	1.00	4598.00	4	Rotate 36"
07:30	07:45	0.25	4598.00	4	Deviation Survey
07:45	08:15	0.50	4629.00	4	Rotate 31'
08:15	08:30	0.25	4629.00	4	Deviation Survey
08:30	09:15	0.75	4649.00	4	Slide 20' @ HS
09:15	10:00	0.75	4649.00	4	Circulate clean hole
10:00	10:30	0.50	4661.00	4	Slide 12' @ HS
10:30	10:45	0.25	4661.00	4	Deviation Survey
10:45	11:30	0.75	4693.00	4	Slide 32' @ HS
11:30	11:45	0.25	4693.00	4	Deviation Survey
11:45	13:00	1.25	4724.00	4	Slide 31' @ HS
13:00	13:15	0.25	4724.00	4	Deviation Survey
13:15	14:15	1.00	4756.00	4	Slide 32' @ HS
14:15	14:30	0.25	4756.00	4	Deviation Survey
14:30	16:00	1.50	4788.00	4	Slide 32' @ HS
16:00	16:15	0.25	4788.00	4	Deviation Survey
16:15	17:00	0.75	4819.00	4	Slide 31' @ HS
17:00	17:15	0.25	4819.00	4	Deviation Survey
17:15	17:45	0.50	4851.00	4	Rotate 32'
17:45	18:00	0.25	4851.00	4	Deviation Survey
18:00	18:30	0.50	4883.00	4	Rotate 32'

**COMMENTS**

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 EWR Phase 4 Resistivity \$1500 Pressure while drilling \$1500

Field estimate daily charge = \$15,100  
 Field estimate job total = \$186,250

**CURRENT STATUS Report # 15 11/24/2011**

<b>Total Depth (ft) :</b> 5167	<b>Casing Depth (ft) :</b> 5152.00	<b>Operator Reps :</b> John Boyd, Robert Hurst
<b>Drilled last 24 hrs (ft) :</b> 671	<b>Casing Diameter (in) :</b> 7.000	<b>SSDS Reps :</b> Charlie Basden (15), Travis Basden (15)
<b>Hole Size (in) :</b> 8.750	<b>Casing ID (in) :</b>	

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
5104.00	91.54	356.53	4505.46	973.54	N00.04W

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

BHA 4: 2699.24 ft; Bit #3rr1 (43.5 hrs), PDM # (53.75 hrs), Sub, Sub, Sub, Pony, Flex, Flex, Sub, Sub, 1x DC, Sub, Sub, DP (S), HWDP, Sub, HWDP

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.2	53	17	15.0	9.0 / 21.0		9.8	6.50	0.25	

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
18:30	19:15	0.75	4914.00	4	Rotate 31'
19:15	19:30	0.25	4914.00	4	Circulate - Circ out sweep
19:30	19:45	0.25	4914.00	4	Deviation Survey
19:45	20:15	0.50	4941.00	4	Slide 27' @ HS
20:15	20:30	0.25	4946.00	4	Rotate 5'
20:30	20:45	0.25	4946.00	4	Deviation Survey
20:45	21:00	0.25	4970.00	4	Slide 24' @ -10
21:00	21:15	0.25	4978.00	4	Rotate 8'
21:15	21:30	0.25	4978.00	4	Deviation Survey
21:30	21:45	0.25	5000.00	4	Slide 22' @ -10
21:45	22:00	0.25	5009.00	4	Rotate 9'
22:00	22:15	0.25	5009.00	4	Deviation Survey
22:15	22:45	0.50	5019.00	4	Slide 10' @ 10
22:45	23:15	0.50	5028.00	4	Rotate 9'
23:15	23:45	0.50	5041.00	4	Slide 13' @ 10
23:45	00:00	0.25	5041.00	4	Deviation Survey
00:00	00:30	0.50	5073.00	4	Rotate 32'
00:30	00:45	0.25	5073.00	4	Misc Directional Work -- Relog 20' from 5000'-5020'
00:45	01:00	0.25	5073.00	4	Deviation Survey
01:00	01:30	0.50	5104.00	4	Rotate 31'
01:30	01:45	0.25	5104.00	4	Deviation Survey
01:45	02:15	0.50	5136.00	4	Rotate 32'
02:15	02:30	0.25	5136.00	4	Deviation Survey
02:30	02:45	0.25	5167.00	4	Rotate 31'
02:45	04:30	1.75	5167.00	4	Circulate -- Get MWD Survey and circulate prior to trip.
04:30	06:00	1.50	5167.00	4	Trip Out

**COMMENTS**

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 EWR Phase 4 Resistivity \$1500 Pressure while drilling \$1500

Field estimate daily charge = \$15,100  
 Field estimate job total = \$186,250

# sperry-sun DRILLING SERVICES

## Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

**CURRENT STATUS** Report # 14 11/23/2011

Total Depth (ft) :	4496	Casing Depth (ft) :	805.00	Operator Reps :	John Boyd, Robert Hurst
Drilled last 24 hrs (ft) :	557	Casing Diameter (in) :	9.625	SSDS Reps :	Charlie Basden (14), Travis Basden (14)
Hole Size (in) :	8.750	Casing ID (in) :			

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
4471.00	58.37	356.71	4332.70	378.61	N03.59E

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

BHA 4: 2699.24 ft; Bit #3rr1 (28.25 hrs), PDM # (35.75 hrs), Sub, Sub, Sub, Pony, Flex, Flex, Sub, Sub, 1x DC, Sub, Sub, DP (S), HWDP, Sub, HWDP

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.2	45	13	11.0	7.0 / 17.0		5.6	6.50	0.50	

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	07:30	1.50	3939.00	4	Reaming / Washing
07:30	08:15	0.75	3964.00	4	Slide 25' @ -5gtf
08:15	08:30	0.25	3964.00	4	Deviation Survey
08:30	09:15	0.75	3996.00	4	Slide 32' @ -5gtf
09:15	09:30	0.25	3996.00	4	Deviation Survey
09:30	10:15	0.75	4028.00	4	Slide 32' @ -5gtf
10:15	10:30	0.25	4028.00	4	Deviation Survey
10:30	12:00	1.50	4028.00	4	Misc Directional Work
12:00	12:45	0.75	4059.00	4	Slide 31' @ 1
12:45	13:00	0.25	4059.00	4	Deviation Survey
13:00	14:30	1.50	4091.00	4	Sliding 32' @ -1
14:30	14:45	0.25	4091.00	4	Deviation Survey
14:45	16:15	1.50	4123.00	4	Slide 32' @ 1gtf
16:15	16:30	0.25	4123.00	4	Deviation Survey
16:30	17:15	0.75	4154.00	4	Slide 31' @ 1gtf
17:15	17:30	0.25	4154.00	4	Deviation Survey
17:30	18:30	1.00	4186.00	4	Slide 32' @ -10
18:30	18:45	0.25	4186.00	4	Deviation Survey
18:45	19:45	1.00	4218.00	4	Slide 32' @ -10
19:45	20:00	0.25	4218.00	4	Deviation Survey
20:00	21:00	1.00	4249.00	4	Slide 31' @ -10
21:00	21:15	0.25	4249.00	4	Deviation Survey

**COMMENTS**

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 EWR Phase 4 Resistivity \$1500 Pressure while drilling \$1500

Field estimate daily charge = \$15,100  
 Field estimate job total = \$171,150

**CURRENT STATUS Report # 14 11/23/2011**

<b>Total Depth (ft) :</b> 4496	<b>Casing Depth (ft) :</b> 805.00	<b>Operator Reps :</b> John Boyd, Robert Hurst <b>SSDS Reps :</b> Charlie Basden (14), Travis Basden (14)
<b>Drilled last 24 hrs (ft) :</b> 557	<b>Casing Diameter (in) :</b> 9.625	
<b>Hole Size (in) :</b> 8.750	<b>Casing ID (in) :</b>	

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
4471.00	58.37	356.71	4332.70	378.61	N03.59E

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

BHA 4: 2699.24 ft; Bit #3rr1 (28.25 hrs), PDM # (35.75 hrs), Sub, Sub, Sub, Pony, Flex, Flex, Sub, Sub, 1x DC, Sub, Sub, DP (S), HWDP, Sub, HWDP

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.2	45	13	11.0	7.0 / 17.0		5.6	6.50	0.50	

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
21:15	21:30	0.25	4269.00	4	Slide 20' @ -10
21:30	21:45	0.25	4281.00	4	Rotate 12'
21:45	22:00	0.25	4281.00	4	Deviation Survey
22:00	22:15	0.25	4296.00	4	Slide 15' @ -10
22:15	22:30	0.25	4313.00	4	Rotate 17'
22:30	22:45	0.25	4313.00	4	Deviation Survey
22:45	23:30	0.75	4330.00	4	Slide 17' @ -15
23:30	23:45	0.25	4344.00	4	Rotate 14'
23:45	00:00	0.25	4344.00	4	Deviation Survey
00:00	00:30	0.50	4362.00	4	Slide 18' @ -10
00:30	00:45	0.25	4376.00	4	Rotate 14'
00:45	01:00	0.25	4376.00	4	Deviation Survey
01:00	01:30	0.50	4392.00	4	Slide 16' @ 0
01:30	02:00	0.50	4408.00	4	Rotate 16'
02:00	02:15	0.25	4408.00	4	Deviation Survey
02:15	02:45	0.50	4428.00	4	Slide 20' @ 20 R
02:45	03:00	0.25	4439.00	4	Rotate 11'
03:00	03:15	0.25	4439.00	4	Deviation Survey
03:15	04:15	1.00	4467.00	4	Slide 28' @ 20R
04:15	04:30	0.25	4471.00	4	Rotate 4'
04:30	04:45	0.25	4471.00	4	Deviation Survey
04:45	06:00	1.25	4496.00	4	Slide 25' @ 10R

**COMMENTS**

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 EWR Phase 4 Resistivity \$1500 Pressure while drilling \$1500

Field estimate daily charge = \$15,100  
 Field estimate job total = \$171,150

# sperry-sun DRILLING SERVICES

## Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

### CURRENT STATUS Report # 13 11/22/2011

Total Depth (ft) :	3939	Casing Depth (ft) :	805.00	Operator Reps :	John Boyd, Robert Hurst
Drilled last 24 hrs (ft) :	282	Casing Diameter (in) :	9.625	SSDS Reps :	Charlie Basden (13), Travis Basden (13)
Hole Size (in) :	8.750	Casing ID (in) :			

### LAST SURVEY

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
3933.00	16.17	1.73	3927.15	58.85	N37.77E

### LAST FORMATION TOP

Formation Name	MD Top (ft)	TVD Top (ft)

### BHA SUMMARY

BHA 3: 2704.66 ft; Bit # (8.5 hrs), PDM # (16. hrs), Stab, Sub, Sub, Sub, Pony, Flex, Flex, Sub, Sub, 1x DC, Sub, Sub, DP (S), HWDP  
 BHA 4: 2699.24 ft; Bit #3r1 (10. hrs), PDM # (17.5 hrs), Sub, Sub, Sub, Pony, Flex, Flex, Sub, Sub, 1x DC, Sub, Sub, DP (S), HWDP, Sub, HWDP

### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.4	37	10	13.0	7.0 / 15.0	6	9.3	7.50	0.50	

### TIME BREAKDOWN

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	07:45	1.75	3748.00	3	Slide @ -1mtf
07:45	08:00	0.25	3748.00	3	Deviation Survey
08:00	08:30	0.50	3780.00	3	Slide @ -1mtf
08:30	08:45	0.25	3780.00	3	Deviation Survey
08:45	09:45	1.00	3812.00	3	Slide @ -10gtf
09:45	10:00	0.25	3812.00	3	Deviation Survey
10:00	10:45	0.75	3843.00	3	Slide @ -10gtf
10:45	11:15	0.50	3843.00	3	Deviation Survey
11:15	12:15	1.00	3875.00	3	Slide @ -10gtf
12:15	12:30	0.25	3875.00	3	Deviation Survey
12:30	13:30	1.00	3907.00	3	Slide @ -10gtf
13:30	13:45	0.25	3907.00	3	Deviation Survey
13:45	14:15	0.50	3938.00	3	Slide @ -10gtf
14:15	14:30	0.25	3938.00	3	Deviation Survey
14:30	16:00	1.50	3938.00	3	Circulate - Prepare to trip to dial up motor.
16:00	21:30	5.50	3938.00	3	Trip Out (at Surface)
21:30	01:30	4.00	3938.00	3	PU/LD BHA - Dial up motor, instal kick pad, Run MWD tool test
01:30	04:30	3.00	3938.00	4	Trip In
04:30	06:00	1.50	3939.00	4	Slide @ -10gtf

### COMMENTS

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 EWR Phase 4 Resistivity \$1500 Pressure while drilling \$1500

Field estimate daily charge = \$15,100  
 Field estimate job total = \$156,050







# sperry-sun DRILLING SERVICES

## Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

### CURRENT STATUS Report # 10 11/19/2011

Total Depth (ft) : 2897	Casing Depth (ft) : 805.00	Operator Reps : John Boyd, Robert Hurst
Drilled last 24 hrs (ft) : 1512	Casing Diameter (in) : 9.625	SSDS Reps : Charlie Basden (10), Travis Basden (10)
Hole Size (in) : 8.750	Casing ID (in) :	

### LAST SURVEY

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
2832.00	0.19	219.28	2830.68	30.44	N87.36E

### LAST FORMATION TOP

Formation Name	MD Top (ft)	TVD Top (ft)

### BHA SUMMARY

BHA 2: 999.16 ft; Bit #2 (25. hrs), PDM # (42.75 hrs), Stab, Sub, Sub, Sub, Sub, Pony, Flex, Flex, Sub, Sub, 1x DC, Sub, Sub, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC

### MUD DATA

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.5	35	6	21.0	9.0 / 15.0					

### TIME BREAKDOWN

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	07:15	1.25	1473.00	2	Rotate 88'
07:15	07:45	0.50	1473.00	2	Deviation Survey, Connection, Install wiper rubber
07:45	08:45	1.00	1568.00	2	Rotate 95'
08:45	09:00	0.25	1568.00	2	Deviation Survey & Connection
09:00	09:45	0.75	1663.00	2	Rotate 95'
09:45	10:00	0.25	1663.00	2	Deviation Survey
10:00	10:15	0.25	1663.00	2	Miscellaneous Drawworks fire
10:15	10:45	0.50	1758.00	2	Rotate 95'
10:45	11:00	0.25	1758.00	2	Deviation Survey & Connection
11:00	12:45	1.75	1853.00	2	Rotate 95'
12:45	13:00	0.25	1853.00	2	Deviation Survey & Connection
13:00	13:15	0.25	1872.00	2	Rotate 19'
13:15	14:00	0.75	1872.00	2	Rig Repair Pump
14:00	14:15	0.25	1874.00	2	Rotate 2'
14:15	14:45	0.50	1874.00	2	Rig Repair, Pump
14:45	15:30	0.75	1948.00	2	Rotate 74'
15:30	15:45	0.25	1948.00	2	Deviation Survey & Connection
15:45	16:30	0.75	2043.00	2	Rotate 95'
16:30	16:45	0.25	2043.00	2	Deviation Survey & Connection
16:45	17:30	0.75	2138.00	2	Rotate 95'
17:30	17:45	0.25	2138.00	2	Deviation Survey & Connection
17:45	18:30	0.75	2233.00	2	Rotate 95'

### COMMENTS

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 Float Valve \$ 750  
 Field estimate daily charge = \$12,850  
 Field estimate job total = \$109,900

**CURRENT STATUS Report # 10 11/19/2011**

<b>Total Depth (ft) :</b> 2897	<b>Casing Depth (ft) :</b> 805.00	<b>Operator Reps :</b> John Boyd, Robert Hurst
<b>Drilled last 24 hrs (ft) :</b> 1512	<b>Casing Diameter (in) :</b> 9.625	<b>SSDS Reps :</b> Charlie Basden (10), Travis Basden (10)
<b>Hole Size (in) :</b> 8.750	<b>Casing ID (in) :</b>	

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
2832.00	0.19	219.28	2830.68	30.44	N87.36E

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

BHA 2: 999.16 ft; Bit #2 (25. hrs), PDM # (42.75 hrs), Stab, Sub, Sub, Sub, Sub, Pony, Flex, Flex, Sub, Sub, 1x DC, Sub, Sub, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	9.5	35	6	21.0	9.0 / 15.0					

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
18:30	18:45	0.25	2233.00	2	Deviation Survey & Connection
18:45	19:30	0.75	2233.00	2	Rig Repair – Pumps
19:30	20:15	0.75	2328.00	2	Rotate 95'
20:15	20:45	0.50	2328.00	2	Deviation Survey, Connection, and Slow pump rates
20:45	21:45	1.00	2423.00	2	Rotate 95'
21:45	22:00	0.25	2423.00	2	Deviation Survey & Connection
22:00	23:00	1.00	2518.00	2	Rotate 95'
23:00	23:15	0.25	2518.00	2	Deviation Survey & Connection
23:15	00:15	1.00	2613.00	2	Rotate 95'
00:15	00:30	0.25	2613.00	2	Deviation Survey & Connection
00:30	01:45	1.25	2707.00	2	Rotate 94'
01:45	02:00	0.25	2707.00	2	Deviation Survey & Connection
02:00	04:00	2.00	2802.00	2	Rotate 95'
04:00	04:15	0.25	2802.00	2	Deviation Survey & Connection
04:15	05:00	0.75	2897.00	2	Rotate 95'
05:00	06:00	1.00	2897.00	2	Circulate

**COMMENTS**

Day Rate \$10,800 EM MWD \$ 500  
 Per Diem \$ 300 Filter Sub \$ 500  
 Float Valve \$ 750  
 Field estimate daily charge = \$12,850  
 Field estimate job total = \$109,900

# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

**CURRENT STATUS** Report # 9 11/18/2011

<b>Total Depth</b> (ft) : 1385	<b>Casing Depth</b> (ft) : 805.00	<b>Operator Reps</b> : John Boyd, Robert Hurst
<b>Drilled last 24 hrs</b> (ft) : 575	<b>Casing Diameter</b> (in) : 9.625	<b>SSDS Reps</b> : Charlie Basden (9), Travis Basden (9)
<b>Hole Size</b> (in) : 8.750	<b>Casing ID</b> (in) :	

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
1313.00	0.62	330.24	1311.71	34.43	S82.40E

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

BHA 2: 999.16 ft; Bit #2 (8.5 hrs), PDM # (25.25 hrs), Stab, Sub, Sub, Sub, Sub, Pony, Flex, Flex, Sub, Sub, 1x DC, Sub, Sub, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	8.7	34	8	15.0	10.0 / 15.0			2.50	0.25	

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	12:00	6.00	810.00	2	Pick up BHA #2
12:00	12:30	0.50	810.00	2	Rig Repair -- Flow Line
12:30	13:30	1.00	810.00	2	Misc Directional Work -- Troubleshoot EM Tool
13:30	14:00	0.50	810.00	2	Pick up BHA #2
14:00	16:00	2.00	810.00	2	Misc Directional Work -- Troubleshoot EM Tool
16:00	19:00	3.00	810.00	2	Trip In -- Pick up drill collars, heavy weight
19:00	22:30	3.50	810.00	2	Reaming / Washing -- Tag bottom, Drill out shoe.
22:30	23:00	0.50	843.00	2	Rotate 33'
23:00	23:30	0.50	843.00	2	Service Rig
23:30	00:00	0.50	843.00	2	Pick up Jars
00:00	00:30	0.50	905.00	2	Rotate 62'
00:30	00:45	0.25	905.00	2	Connection and Deviation Survey
00:45	01:30	0.75	999.00	2	Rotate 94'
01:30	01:45	0.25	999.00	2	Connection and Deviation Survey
01:45	02:45	1.00	1094.00	2	Rotate 95'
02:45	03:00	0.25	1094.00	2	Connection and Deviation Survey
03:00	03:30	0.50	1188.00	2	Rotate 94'
03:30	03:45	0.25	1188.00	2	Connection and Deviation Survey
03:45	04:45	1.00	1283.00	2	Rotate 95'
04:45	05:00	0.25	1283.00	2	Connection and Deviation Survey
05:00	05:30	0.50	1378.00	2	Rotate 95'
05:30	05:45	0.25	1378.00	2	Connection and Deviation Survey

**COMMENTS**

Day Rate \$10,800 Motor Inspection \$1,500  
 Per Diem \$ 300 Filter Sub \$ 500  
 EM MWD \$ 500  
 Tubular Inspectings / Recuts BHA 2 \$5,075

Field estimate daily charge = \$18,675  
 Field estimate job total = \$97,050

<b>CURRENT STATUS</b> Report # 9 11/18/2011					
Total Depth (ft) :	1385	Casing Depth (ft) :	805.00	Operator Reps : John Boyd, Robert Hurst	
Drilled last 24 hrs (ft) :	575	Casing Diameter (in) :	9.625	SSDS Reps : Charlie Basden (9), Travis Basden (9)	
Hole Size (in) :	8.750	Casing ID (in) :			

<b>LAST SURVEY</b>						<b>LAST FORMATION TOP</b>		
Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction	Formation Name	MD Top (ft)	TVD Top (ft)
1313.00	0.62	330.24	1311.71	34.43	S82.40E			

**BHA SUMMARY**  
 BHA 2: 999.16 ft; Bit #2 (8.5 hrs), PDM # (25.25 hrs), Stab, Sub, Sub, Sub, Sub, Pony, Flex, Flex, Sub, Sub, 1x DC, Sub, Sub, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC, 1x DC

<b>MUD DATA</b>										
Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	8.7	34	8	15.0	10.0 / 15.0			2.50	0.25	

<b>TIME BREAKDOWN</b>					
From	To	Hours	TMD (ft)	BHA #	Activity
05:45	06:00	0.25	1385.00	2	Rotate 7'

**COMMENTS**

Day Rate \$10,800 Motor Inspection \$1,500  
 Per Diem \$ 300 Filter Sub \$ 500  
 EM MWD \$ 500  
 Tubular Inspectings / Recuts BHA 2 \$5,075

Field estimate daily charge = \$18,675  
 Field estimate job total = \$97,050





# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

**CURRENT STATUS** Report # 6 11/15/2011

Total Depth (ft) :	810	Casing Depth (ft) :	805.00	Operator Reps :	John Boyd, Robert Hurst
Drilled last 24 hrs (ft) :	0	Casing Diameter (in) :	9.625	SSDS Reps :	Charlie Basden (6), Travis Basden (6)
Hole Size (in) :	12.250	Casing ID (in) :			

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
758.00	1.42	97.85	756.73	33.21	S79.29E

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

BHA 1: 676.43 ft; Bit #1 (15.25 hrs), PDM # (16.75 hrs), Stab, Sub, Pony, Pony, Sub, Sub, 1x DC, Sub, Stab, DC, DC, DC, Sub, DC, DC, DC, DC, DC, Sub, HWDP, HWDP, HWDP, HWDP, HWDP, HWDP, HWDP, HWDP, HWDP

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	8.7	34	8	15.0	10.0 / 15.0			2.50	0.25	

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	08:00	2.00	810.00	1	PU/LD Collars
08:00	11:00	3.00	810.00	1	PU/LD Directional Tools
11:00	06:00	19.00	810.00		Run Casing / Cement

**COMMENTS**

Operating Charges \$10,800  
 Per Diem \$ 300  
 Tubular Inspection / Recuts for BHA 1 \$2,275  
 EM MWD (11-14-11 and 11-15-11) \$1000  
  
 Field estimate daily charge = \$14,375  
 Field estimate job total = \$64,775



# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

**CURRENT STATUS** Report # 5 11/14/2011

Total Depth (ft) :	810	Casing Depth (ft) :	805.00	Operator Reps :	Lee Rother, Robert Hurst
Drilled last 24 hrs (ft) :	728	Casing Diameter (in) :	9.625	SSDS Reps :	Charlie Basden (5), Travis Basden (5)
Hole Size (in) :	12.250	Casing ID (in) :			

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
758.00	1.42	97.85	756.73	33.21	S79.29E

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

BHA 1: 676.43 ft; Bit #1 (15.25 hrs), PDM # (16.75 hrs), Stab, Sub, Pony, Pony, Sub, Sub, 1x DC, Sub, Stab, DC, DC, DC, Sub, DC, DC, DC, DC, DC, Sub, HWDP, HWDP, HWDP, HWDP, HWDP, HWDP, HWDP, HWDP, HWDP

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lbf/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	8.7	34	8	15.0	10.0 / 15.0			2.50	0.25	

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	08:00	2.00	82.00	1	Misc Directional Work trip in
08:00	13:00	5.00	202.00	1	Rotate 120'
13:00	13:15	0.25	222.00	1	Slide 20' @ 90MTF
13:15	13:45	0.50	233.00	1	Rotate 11'
13:45	14:15	0.50	233.00	1	Connection and Deviation Survey
14:15	14:30	0.25	253.00	1	Slide 20' @ 90mtf
14:30	14:45	0.25	264.00	1	Rotate 11'
14:45	15:00	0.25	264.00	1	Connection and Deviation Survey
15:00	16:00	1.00	264.00	1	Rig Repair
16:00	16:15	0.25	295.00	1	Rotate 31'
16:15	16:30	0.25	295.00	1	Connection and Deviation Survey
16:30	17:00	0.50	326.00	1	Slide 31' @ 90mtf
17:00	17:15	0.25	326.00	1	Connection and Deviation Survey
17:15	18:00	0.75	387.00	1	Rotate 61'
18:00	18:15	0.25	387.00	1	Connection and Deviation Survey
18:15	18:45	0.50	422.00	1	Slide 35' @ 90MTF
18:45	19:30	0.75	485.00	1	Rotate 63'
19:30	19:45	0.25	485.00	1	Connection and Deviation Survey
19:45	20:45	1.00	550.00	1	Rotate 65'
20:45	21:00	0.25	550.00	1	Rig Repair -- Pumps
21:00	21:15	0.25	580.00	1	Rotate 30'
21:15	21:30	0.25	580.00	1	Connection and Deviation Survey

**COMMENTS**

Operating Charges \$10,800  
 Per Diem \$ 300 Motor Inspection \$1500  
 EM Battery \$2000 Float Valve \$ 750

Field estimate daily charge = \$15,350  
 Field estimate job total = \$50,400



# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

**CURRENT STATUS** Report # 4 11/13/2011

Total Depth (ft) :	82	Casing Depth (ft) :	5152.00	Operator Reps :	Lee Rother, Robert Hurst
Drilled last 24 hrs (ft) :	82	Casing Diameter (in) :	7.000	SSDS Reps :	Charlie Basden (4), Travis Basden (4)
Hole Size (in) :	12.250	Casing ID (in) :			

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
0.00	0.00	0.00	0.00	0.00	N00.00E

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

BHA 1: 676.43 ft; Bit #1 (0.75 hrs), PDM # (0.75 hrs), Stab, Sub, Pony, Pony, Sub, Sub, 1x DC, Sub, Stab, DC, DC, DC, Sub, DC, DC, DC, DC, DC, DC, Sub, HWDP, HWDP, HWDP, HWDP, HWDP, HWDP, HWDP, HWDP, HWDP, HWDP

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	8.8				/					

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	00:45	18.75	0.00		Standby -- Wait on rig
00:45	04:00	3.25	0.00		PU/LD BHA
04:00	04:15	0.25	0.00	1	Trip In
04:15	05:00	0.75	82.00	1	Spud Hole -- Drill and pick up BHA as we make hole
05:00	06:00	1.00	82.00	1	Misc Directional Work -- Continue picking up BHA and EM Tool

**COMMENTS**

Operating Charges \$10,800  
 Per Diem \$ 300

Field estimate daily charge = \$11,100  
 Field estimate job total = \$35,050





# sperry-sun

## DRILLING SERVICES

### Daily Drilling Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

**CURRENT STATUS** Report # 1 11/10/2011

Total Depth (ft) :	0	Casing Depth (ft) :	5152.00	Operator Reps :	Lee Rother, Robert Hurst
Drilled last 24 hrs (ft) :	0	Casing Diameter (in) :	7.000	SSDS Reps :	Charlie Basden (1), Travis Basden (1)
Hole Size (in) :		Casing ID (in) :			

**LAST SURVEY**

Depth (ft)	Inclination	Azimuth	TVD (ft)	Displ (ft)	Direction
0.00	0.00	0.00	0.00	0.00	N00.00E

**LAST FORMATION TOP**

Formation Name	MD Top (ft)	TVD Top (ft)

**BHA SUMMARY**

--	--	--	--	--	--	--	--	--	--

**MUD DATA**

Type	Weight (ppg)	FV (sec)	PV (cp)	YP (lb/100ft <sup>2</sup> )	Gels	Fluid Loss	pH	Solids (%)	Sand (%)	Oil (%)
Gel/Freshwater	8.8				/					

**TIME BREAKDOWN**

From	To	Hours	TMD (ft)	BHA #	Activity
06:00	14:00	8.00	0.00		Travel to rig
14:00	06:00	16.00	0.00		No Activity

**COMMENTS**

Standby Charges \$6500  
 Mileage 1320mi \$3300  
 Per-diem \$300  
 EOW logs \$250

Field estimate daily charge = \$10,350  
 Field estimate job total = \$10,350

# sperry-sun

## DRILLING SERVICES

### BHA Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

BHA# 1

BHA# 1 : Date In : 11/13/201 MD In (ft) : 0 TVD In (ft) : 0 Date Out : 11/15/201 MD Out (ft) : 810 TVD Out (ft) : 809

#### BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in <sup>2</sup> )	Dull Condition
1	12.250	Halliburton	Tricone	PT3307	3x14, 1x13	0.581	1-1-CT-A - - - -TD

#### MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs
6.750		SSDS	SperryDrill	10909029	1.15°		48	16.75

#### COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (ft)	Bit - Center Blade (ft)
1	Bit	PT3307	12.250	3.000	12.250	377.57	P 6-5/8" Reg	1.00	
2	6-3/4" SperryDrill Lobe 7/8 - 3.3stg	10909029	6.750	4.469	8.125	68.49	B 4-1/2" IF	30.78	3.03
3	Integral Blade Stabilizer	Rig	8.430	2.500	12.000	173.49	B 6-5/8" Reg	6.67	35.12
4	Float Sub	11533632	7.810	2.750		143.02	B 6-5/8" Reg	2.99	
5	Non-Mag Pony collar	1524075	7.750	3.500		127.98	B 6-5/8" Reg	9.18	
6	Non-Mag Pony collar	11512538	6.500	3.312		83.73	B 4-1/2" IF	9.81	
7	Non-Mag Index sub	11159774	8.060	3.430		142.39	B 6-5/8" Reg	3.04	
8	Non-Mag Antanna Sub	220510	8.000	3.430		139.81	B 6-5/8" Reg	2.92	
9	1x Non-Mag Drill collar	11474444	6.750	2.875		99.83	B 4-1/2" IF	30.11	
10	Cross Over Sub (6 5/8 Reg Pin to NC 56 B Rig		8.188	2.810		158.32	B N.C. 56	3.02	
11	Integral Blade Stabilizer	Rig	8.430	2.750	12.000	169.97	B N.C. 56	7.63	103.34
12	1jt Drill collar		8.000	2.813		150.12	B N.C. 56	30.82	
13	1jt Drill collar		8.000	2.875		149.18	B N.C. 56	31.04	
14	1jt Drill collar	Rig	8.000	2.810		150.00	B N.C. 56	31.04	
15	Cross Over Sub (NC 56 Pin to 4 1/2 XH Bc	Rig	8.000	2.437		155.41	B 4-1/2" XH	2.86	
16	1jt Drill collar	Rig	6.500	2.875		90.96	B 4-1/2" XH	31.05	
17	1jt Drill collar	Rig	6.500	2.875		90.96	B 4-1/2" XH	31.07	
18	1jt Drill collar	Rig	6.500	2.875		90.96	B 4-1/2" XH	30.73	
19	1jt Drill collar	Rig	6.438	2.875		88.82	B 4-1/2" XH	30.70	
20	1jt Drill collar	Rig	6.438	2.875		88.82	B 4-1/2" XH	31.23	
21	1jt Drill collar	Rig	6.500	2.875		90.96	B 4-1/2" XH	30.04	
22	Cross Over Sub (4 1/2 XH Pin to XT39 Box	Rig	6.562	2.688		95.92	B 4-1/2" Mod	3.57	
23	1jt HWDP		5.000	2.625		48.47	B 4-1/2" Mod	31.66	
24	1jt HWDP		5.000	2.625		48.47	B 4-1/2" Mod	31.70	
25	1jt HWDP		4.875	2.625		45.17	B 4-1/2" Mod	31.68	
26	1jt HWDP		4.875	2.625		45.17	B 4-1/2" Mod	31.67	
27	1jt HWDP		4.875	2.625		45.17	B 4-1/2" Mod	31.67	
28	1jt HWDP		4.938	2.938		42.16	B 4-1/2" Mod	31.73	
29	1jt HWDP		4.875	2.625		45.17	B 4-1/2" Mod	31.67	
30	1jt HWDP		5.000	2.625		48.47	B 4-1/2" Mod	31.64	
31	1jt HWDP		4.875	2.625		45.17	B 4-1/2" Mod	31.71	

676.43

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## DRILLING SERVICES

### BHA Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

**BHA# 1**

Parameter	Min	Max	Ave
WOB (lbs) :	5	15	10
RPM (rpm) :	40	45	43
Flow (gpm) :	462	850	722
SPP (psi) :	575	2525	1765

Activity	Hrs
Drilling :	15.25
Reaming :	0.00
Circ-Other :	1.50
<b>Total :</b>	<b>16.75</b>

BHA Weight	(lb)
in Air (Total) :	56165
in Mud (Total) :	48632
in Air (Bel Jars) :	0
in Mud (Bel Jars) :	0

Drill String	OD(in)	Len(ft)

PERFORMANCE		
	In	Out
Inclination (deg)	0.00	0.72
Azimuth (deg)	0.00	95.24

	Distance(ft)	ROP (ft/hr)	Build (°/100')	Turn (°/100')	DLS (°/100')
Oriented :	215.93	38			
Rotated :	594.07	59			
<b>Total :</b>	<b>810.00</b>	<b>53</b>	<b>0.09</b>	<b>0.00</b>	<b>0.09</b>

**COMMENTS**  
 Bit to Survey = 52'  
 GPM - 300-900  
 Revs/Gal = .17  
 Max Diff = 620



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## DRILLING SERVICES

### BHA Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

BHA# 2

BHA# 2 : Date In : 11/18/201 MD In (ft) : 810 TVD In (ft) : 809 Date Out 11/21/2011 MD Out (ft) : 3657 TVD Out (ft) : 3656

#### BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in <sup>2</sup> )	Dull Condition
2	8.750	Halliburton	PDC	11857344	5x12	0.552	

#### MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs
6.750		SSDS	SperryDrill	10909029	1.15°		125	51.75

#### COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (ft)	Bit - Center Blade (ft)
1	PDC 8.75 FX55M	11857344	8.750	2.500	8.750	188.20	P 4-1/2" Reg	1.00	
2	6-3/4" SperryDrill Lobe 7/8 - 3.3stg	10909029	6.750	4.469	8.125	68.49	B 4-1/2" IF	30.78	3.03
3	Integral Blade Stabilizer	Rig	6.313	2.438	7.875	90.77	B 4-1/2" IF	5.75	34.86
4	Non-Mag Float Sub	11882667	6.750	2.813		100.77	B 4-1/2" IF	3.15	
5	Non-Mag Hang-off Sub Gamma	11677169	6.813	2.875		102.12	B 4-1/2" IF	9.20	
6	Non-Mag HCIM Sub	11717380	6.750	2.000		111.25	B 4-1/2" IF	10.70	
7	Non-Mag Pulser Hang-off Collar	1112533	6.750	2.875		99.83	B 4-1/2" IF	15.56	
8	Non-Mag Pony collar	11512538	6.500	3.312		83.73	B 4-1/2" IF	9.81	
9	Pony Non-Mag Flex Drill Collar	11568018	6.813	2.813		103.06	B 4-1/2" IF	12.13	
10	Pony Non-Mag Flex Drill Collar	11497874	6.750	2.813		100.77	B 4-1/2" IF	8.06	
11	Non-Mag Index Sub	11736555	6.563	2.813		94.11	B 4-1/2" IF	3.12	
12	Non-Mag Antenna Sub	11367473	6.500	3.250		84.82	B 4-1/2" IF	3.32	
13	1x Non-Mag Drill collar	11474555	6.875	2.875		104.39	B 4-1/2" IF	29.77	
14	Filter Sub	675-236	6.500	2.375		97.99	B 4-1/2" IF	7.97	
15	Cross Over Sub	11157859	6.688	2.500		103.00	B 4-1/2" IF	3.47	
16	1x Drill collar		6.500	2.875		90.96	B 4-1/2" XH	31.27	
17	1x Drill collar		6.563	2.875		93.17	B 4-1/2" XH	31.10	
18	1x Drill collar		6.500	2.875		90.96	B 4-1/2" XH	31.05	
19	1x Drill collar		6.623	2.875		95.28	B 4-1/2" XH	31.07	
20	1x Drill collar		6.438	2.875		88.82	B 4-1/2" XH	30.94	
21	1x Drill collar		6.563	2.875		93.17	B 4-1/2" XH	29.46	
22	1x Drill collar	rig	6.500	2.875		90.96	B 4-1/2" XH	31.05	
23	1x Drill collar		6.500	2.875		90.96	B 4-1/2" XH	31.07	
24	1x Drill collar		6.500	2.875		90.96	B 4-1/2" XH	30.73	
25	1x Drill collar		6.438	2.875		88.82	B 4-1/2" XH	30.70	
26	1x Drill collar		6.438	2.875		88.82	B 4-1/2" XH	31.23	
27	1x Drill collar		6.500	2.875		90.96	B 4-1/2" XH	30.04	
28	Cross Over Sub 4 1/2xh X 4 1/2 xt39	rig	6.500	2.500		96.36	B 4-1/2" XT39	3.57	
29	1x HWDP		5.000	2.625		48.47	B 4-1/2" XT39	31.66	
30	1x HWDP		5.000	2.625		48.47	B 4-1/2" XT39	31.70	
31	1x HWDP		4.875	2.625		45.17	B 4-1/2" XT39	31.68	
32	1x HWDP		4.875	2.625		45.17	B 4-1/2" XT39	31.67	
33	1x HWDP		4.875	2.625		45.17	B 4-1/2" XT39	31.67	
34	1x HWDP		4.938	2.938		42.16	B 4-1/2" XT39	31.73	
35	1x HWDP		4.875	2.625		45.17	B 4-1/2" XT39	31.67	
36	1x HWDP		5.000	2.625		48.47	B 4-1/2" XT39	31.64	
37	1x HWDP		4.875	2.625		45.17	B 4-1/2" XT39	31.71	
38	JARS	7460419	5.063	2.250		55.06	B 4-1/2" XT39	31.35	
39	1x HWDP		4.875	2.563		46.03	B 4-1/2" XT39	31.02	
40	1x HWDP		4.875	2.563		46.03	B 4-1/2" XT39	31.25	
41	1x HWDP		4.438	2.563		35.14	B 4-1/2" XT39	31.11	
42	1x HWDP		4.838	2.563		45.07	B 4-1/2" XT39	31.03	

# sperry-sun

## DRILLING SERVICES

### BHA Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

**BHA# 2**

43	1x HWDP		4.750	2.563		42.81	B 4-1/2" XT39	31.20	
								999.16	

Parameter	Min	Max	Ave
WOB (lbs) :	8	15	13
RPM (rpm) :	50	75	57
Flow (gpm) :	420	550	533
SPP (psi) :	1150	2600	2236

Activity	Hrs
Drilling :	28.75
Reaming :	3.50
Circ-Other :	2.75
<b>Total :</b>	<b>35.00</b>

BHA Weight	(lb)
in Air (Total) :	70083
in Mud (Total) :	60469
in Air (Bel Jars) :	61664
in Mud (Bel Jars) :	53205

Drill String	OD(in)	Len (ft)

#### PERFORMANCE

	In	Out
Inclination (deg)	0.72	1.10
Azimuth (deg)	95.24	45.84

	Distance (ft)	ROP (ft/hr)	Build (°/100')	Turn (°/100')	DLS (°/100')
Oriented :	0.00	0			
Rotated :	2847.00	99			
<b>Total :</b>	<b>2847.00</b>	<b>99</b>	<b>0.01</b>	<b>0.00</b>	<b>0.03</b>

#### COMMENTS

Flow Range 300-600  
 Revs/Gal -- .17  
 Max Diff -- 410

Mud Pulse Tool Offsets:  
 Bit to Gamma = 65'  
 Bit to Survey = 45'

EM Tool Offsets:  
 Bit to Gamma = 87'  
 Bit to Survey = 92'

# sperry-sun

## DRILLING SERVICES

### BHA Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

BHA# 3

BHA# 3 : Date In : 11/21/201 MD In (ft) : 3657 TVD In (ft) : 3656 Date Out : 11/22/2011 MD Out (ft) : 3938 TVD Out (ft) : 3932

#### BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in <sup>2</sup> )	Dull Condition
8.750		Halliburton	PDC	11703563	6x12	0.663	

#### MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs
6.750		SSDS	SperryDrill	11418176	1.83°		157	16.00

#### COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (ft)	Bit - Center Blade (ft)
1	PDC 8.75" Halliburton FX64DM	11703563	8.750	2.500	8.750	188.20	P 4-1/2" Reg	1.00	
2	6-3/4" SperryDrill Lobe 6/7 - 5.0 stg	11418176	6.750	4.498	7.875	67.81	B 4-1/2" IF	27.22	1.98
3	Integral Blade Stabilizer	Rig	6.313	2.438	7.875	90.77	B 4-1/2" IF	5.75	31.30
4	Non-Mag Float Sub	11882667	6.750	2.813		100.77	B 4-1/2" IF	3.15	
5	Non-Mag EWR-P4 MWD Collar	11301882	6.750	3.000		97.86	B 4-1/2" IF	27.80	
6	Non-Mag Pulser Hang-off Collar	1112533	6.750	2.875		99.83	B 4-1/2" IF	15.56	
7	Non-Mag Pony collar	11512538	6.500	3.312		83.73	B 4-1/2" IF	9.81	
8	Pony Non-Mag Flex Drill Collar	11568018	6.813	2.813		103.06	B 4-1/2" IF	12.13	
9	Pony Non-Mag Flex Drill Collar	11497874	6.750	2.813		100.77	B 4-1/2" IF	8.06	
10	Non-Mag Index Sub	11736555	6.563	2.813		94.11	B 4-1/2" IF	3.12	
11	Non-Mag Antenna Sub	11367473	6.500	3.250		84.82	B 4-1/2" IF	3.32	
12	1x Non-Mag Drill collar	11474555	6.875	2.875		104.39	B 4-1/2" IF	29.77	
13	Filter Sub	675-236	6.500	2.375		97.99	B 4-1/2" IF	7.97	
14	Cross Over Sub 4 1/2IF Pin X XT39 Box	Rig	6.625	2.625		99.04	B 4" XT 39	0.84	
15	DP (S) - XT 39 - 48 JOINTS		4.000	3.240		18.03	B 4" XT 39	1519.06	
16	33 JOINTS of HWDP		4.000	2.563		25.24	B 4" XT 39	1030.10	
								2704.66	

Parameter	Min	Max	Ave
WOB (lbs) :	13	15	13
RPM (rpm) :			
Flow (gpm) :	460	550	540
SPP (psi) :	2100	2650	2589

Activity	Hrs
Drilling :	6.50
Reaming :	2.00
Circ-Other :	1.50
<b>Total :</b>	<b>10.00</b>

BHA Weight (lb)	
in Air (Total) :	67970
in Mud (Total) :	58232
in Air (Bel Jars) :	0
in Mud (Bel Jars) :	0

Drill String	OD(in)	Len(ft)

#### PERFORMANCE

	In	Out
Inclination (deg)	1.10	16.41
Azimuth (deg)	45.84	1.56

	Distance(ft)	ROP (ft/hr)	Build (°/100')	Turn (°/100')	DLS (°/100')
Oriented :	281.00	43			
Rotated :	0.00	0			
<b>Total :</b>	<b>281.00</b>	<b>43</b>	<b>5.45</b>	<b>-15.76</b>	<b>5.57</b>

#### COMMENTS

Flow Range 300-600  
 Revs/Gal -- .29  
 Max Diff -- 715 psi

Mud Pulse Tool Offsets:  
 Bit to Gamma = 40.54'  
 Bit to Survey = 69'

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## DRILLING SERVICES

### BHA Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

BHA# 4

BHA# 4 : Date In : 11/22/201 MD In (ft) : 3938 TVD In (ft) : 3932 Date Out 11/25/201 MD Out (ft) : 5167 TVD Out (ft) : 4503

#### BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in <sup>2</sup> )	Dull Condition
3rr1	8.750	Halliburton	PDC	11703563	6x12	0.663	2-2-CT-S-X- -WT-TD

#### MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs
	6.750	SSDS	SperryDrill	11418176	2.12°		159	53.75

#### COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (ft)	Bit - Center Blade (ft)
1	PDC 8.75" Halliburton FX64DM	11703563	8.750	2.500	8.750	188.20	P 4-1/2" Reg	1.00	
2	6-3/4" SperryDrill Lobe 6/7 - 5.0 stg	11418176	6.750	4.498	7.875	67.81	B 4-1/2" IF	27.22	1.98
3	Non-Mag Float Sub	11882667	6.750	2.813		100.77	B 4-1/2" IF	3.15	
4	Non-Mag EWR-P4 MWD Collar	11301882	6.750	3.000		97.86	B 4-1/2" IF	27.80	
5	Non-Mag Pulser Hang-off Collar	1112533	6.750	2.875		99.83	B 4-1/2" IF	15.56	
6	Non-Mag Pony collar	11512538	6.500	3.312		83.73	B 4-1/2" IF	9.81	
7	Pony Non-Mag Flex Drill Collar	11568018	6.813	2.813		103.06	B 4-1/2" IF	12.13	
8	Pony Non-Mag Flex Drill Collar	11497874	6.750	2.813		100.77	B 4-1/2" IF	8.06	
9	Non-Mag Index Sub	11736555	6.563	2.813		94.11	B 4-1/2" IF	3.12	
10	Non-Mag Antenna Sub	11367473	6.500	3.250		84.82	B 4-1/2" IF	3.32	
11	1x Non-Mag Drill collar	11474555	6.875	2.875		104.39	B 4-1/2" IF	29.77	
12	Filter Sub	675-236	6.500	2.375		97.99	B 4-1/2" IF	7.97	
13	Cross Over Sub 4 1/2IF Pin X XT39 Box	Rig	6.625	2.625		99.04	B 4" XT 39	0.84	
14	DP (S) - XT 39 - 48 JOINTS		4.000	3.240		18.03	B 4" XT 39	1519.06	
15	9 JOINTS of HWDP		4.000	2.563		25.24	B 4" XT 39	285.13	
16	Jars	7460419	5.063	2.250		55.06	B 4" XT 39	31.35	
17	23 JOINTS HWDP		4.000	2.563		29.70	B 4" XT 39	713.95	
								2699.24	

Parameter	Min	Max	Ave
WOB (lbs) :	12	30	21
RPM (rpm) :	15	25	20
Flow (gpm) :	460	550	499
SPP (psi) :	2025	2925	2461

Activity	Hrs
Drilling :	33.50
Reaming :	1.50
Circ-Other :	2.75
<b>Total :</b>	<b>37.75</b>

BHA Weight (lb)	
in Air (Total) :	71573
in Mud (Total) :	61537
in Air (Bel Jars) :	0
in Mud (Bel Jars) :	0

Drill String	OD(in)	Len(ft)

#### PERFORMANCE

	In	Out
Inclination (deg)	16.41	92.26
Azimuth (deg)	1.56	355.93

	Distance(ft)	ROP (ft/hr)	Build (°/100')	Turn (°/100')	DLS (°/100')
Oriented :	746.00	26			
Rotated :	483.00	54			
<b>Total :</b>	<b>1229.00</b>	<b>37</b>	<b>6.17</b>	<b>-0.46</b>	<b>6.18</b>

#### COMMENTS

Flow Range 300-600  
 Revs/Gal -- .29  
 Max Diff -- 715 psi  
 Max Top Drive RPM = 40

Mud Pulse Tool Offsets:  
 Bit to Gamma = 34.79'  
 Bit to Survey = 63'

# sperry-sun

## DRILLING SERVICES

### BHA Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

BHA# 5

BHA# 5 : Date In :12/3/2011 MD In (ft) : 5167 TVD In (ft) : 4503 Date Cur.12/9/2011 MD Cur (ft) : 8623 TVD Cur (ft) : 4491

#### BIT DATA

Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in <sup>2</sup> )	Dull Condition
4	6.125	Varel	VM513PP	4002942	3x12, 2x14	0.632	

#### MOTOR DATA

Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs
4.750		SSDS	SperryDrill	11628674	1.50°		76	100.25

#### COMPONENT DATA

Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (ft)	Bit - Center Blade (ft)
1	PDC - Varel VM513PP	4002942	6.125	2.000	6.125	89.71	P 3-1/2" Reg	1.00	
2	4-3/4" SperryDrill Lobe 7/8 - 2.9 stg	11628674	4.750	2.901	5.625	37.87	B 3-1/2" IF	28.80	1.98
3	Non-Mag Float Sub	11737036	4.750	2.500		43.66	B 3-1/2" IF	2.28	
4	Non-Mag Gamma Hang off sub	11644766	4.750	2.625		41.95	B 3-1/2" IF	9.27	
5	ADR TOOL	90304371	5.250	2.628		55.29	B 3-1/2" IF	36.36	
6	Non-Mag MWD Hang off collar	202480	4.813	2.563		44.42	B 3-1/2" IF	16.27	
7	Non-Mag Pin by Pin Sub	11643463	4.813	2.313		47.68	P 3-1/2" IF	2.34	
8	1x Non-Mag EM Hang Off Collar	12066184	4.750	2.500		44.00	B 3-1/2" IF	32.02	
9	Non-Mag Antenna Sub	210105	4.750	2.563		42.81	B 3-1/2" IF	3.31	
10	1x Non-Mag Drill collar	11476233	4.813	2.250		48.45	B 3-1/2" IF	30.35	
11	Filter Sub	475-740	4.813	1.750		53.81	B 3-1/2" IF	5.69	
12	Cross Over Sub XT39B x 3 1/2 IFP	NOV525-006 3	5.125	2.250		56.75	B XT. 39	2.19	
13	DP (S) - XT 39 - 96Jts.		4.000	3.240		18.03	B XT 39	3037.87	
14	HWDP 33 Jts.		4.000	2.563		29.70	B XT 39	1030.10	
								4237.85	

Parameter	Min	Max	Ave
WOB (lbs) :	5	25	9
RPM (rpm) :	40	45	45
Flow (gpm) :	250	250	250
SPP (psi) :	1050	1325	1159

Activity	Hrs
Drilling :	92.50
Reaming :	2.50
Circ-Other :	5.25
<b>Total :</b>	<b>100.25</b>

BHA Weight (lb)	
in Air (Total) :	93332
in Mud (Total) :	80813
in Air (Bel Jars) :	0
in Mud (Bel Jars) :	0

Drill String	OD(in)	Len(ft)

#### PERFORMANCE

	In	Out
Inclination (deg)	92.26	92.04
Azimuth (deg)	355.93	358.08

	Distance(ft)	ROP (ft/hr)	Build (°/100')	Turn (°/100')	DLS (°/100')
Oriented :	650.00	30			
Rotated :	2806.00	39			
<b>Total :</b>	<b>3456.00</b>	<b>37</b>	<b>-0.01</b>	<b>0.06</b>	<b>0.06</b>

#### COMMENTS

Standard Flow Range = 150-250 GPM  
 Revs/Gal = 0.30  
 Max Operating Differential Pressure = 525 psi

Bit to Survey = 81'  
 Bit to Gamma = 36.23'

# sperry-sun

## DRILLING SERVICES

### BHA Report

Customer : Shell  
 Well Name : Senff 19-1H  
 State : Kansas  
 County : Harper  
 Rig : 180  
 Job # : OK-MJ-0008486596

! 6 (Proposed)

BHA# 6 : Date In : MD In (ft) : TVD In (ft) : Date Out MD Out (ft) : TVD Out (ft) :

BIT DATA							
Bit #	OD (in)	MFR	Style	Serial#	Nozzles (/32's)	TFA (in <sup>2</sup> )	Dull Condition
4rr1	6.125	Varel	VM513PP	4002942	3x12, 2x14	0.632	

MOTOR DATA								
Run #	OD (in)	MFR	Model	Serial#	Bend	Nzl (/32's)	Avg Dif (psi)	Cum Circ Hrs
4.750		SSDS	SperryDrill	11628674	1.50°			

COMPONENT DATA									
Item #	Description	Serial #	OD (in)	ID (in)	Gauge (in)	Weight (lbs/ft)	Top Con	Length (ft)	Bit - Center Blade (ft)
1	PDC -- Varel VM513PP	4002942	6.125	2.000	6.125	89.71	P 3-1/2" Reg	1.00	
2	4-3/4" SperryDrill Lobe 7/8 - 2.9 stg	11628674	4.750	2.901	5.625	37.87	B 3-1/2" IF	28.80	1.98
3	Non-Mag Float Sub	11737036	4.750	2.500		43.66	B 3-1/2" IF	2.28	
4	Non-Mag Gamma Hang off sub	11644766	4.750	2.625		41.95	B 3-1/2" IF	9.27	
5	ADR TOOL	90304371	5.250	2.628		55.29	B 3-1/2" IF	36.36	
6	Non-Mag MWD Hang off collar	202480	4.813	2.563		44.42	B 3-1/2" IF	16.27	
7	Non-Mag Pin by Pin Sub	11643463	4.813	2.313		47.68	P 3-1/2" IF	2.34	
8	1x Non-Mag EM Hang Off Collar	12066184	4.750	2.500		44.00	B 3-1/2" IF	32.02	
9	Non-Mag Antenna Sub	210105	4.750	2.563		42.81	B 3-1/2" IF	3.31	
10	1x Non-Mag Drill collar	11476233	4.813	2.250		48.45	B 3-1/2" IF	30.35	
11	Filter Sub	475-740	4.813	1.750		53.81	B 3-1/2" IF	5.69	
12	Cross Over Sub XT39B x 3 1/2 IFP	NOV525-006 3	5.125	2.250		56.75	B XT. 39	2.19	
13	DP (S) - XT 39 - 54 Stands. 162 jts.		4.000	3.240		18.03	B XT 39	5127.21	
14	HWDP 33 Jts.		4.000	2.563		29.70	B XT 39	1030.10	
								6327.19	

Parameter	Min	Max	Ave	Activity	Hrs	BHA Weight (lb)	Drill String	OD(in)	Len(ft)
WOB (lbs) :				Drilling :		in Air (Total) : 131003			
RPM (rpm) :				Reaming :		in Mud (Total) :			
Flow (gpm) :				Circ-Other :		in Air (Bel Jars) : 0			
SPP (psi) :				Total :	100.25	in Mud (Bel Jars) :			

PERFORMANCE			Distance(ft)	ROP (ft/hr)	Build (°/100')	Turn (°/100')	DLS (°/100')
Inclination (deg)	In	Out	Oriented :				
Azimuth (deg)			Rotated :				
			Total :				

**COMMENTS**

Standard Flow Range = 150-250 GPM  
 Revs/Gal = 0.30  
 Max Operating Differential Pressure = 525 psi

Bit to Survey = 81'  
 Bit to Gamma = 36.23'  
 Did not trip all the way out of hole. Short trip to rearrange push pipe.