

**FORGE Energy**  
**UL 18 Dyk 1H**  
**API Number: 42-475-37122**

**08/18/2016**

Rig Name:  
Depth = 0.0 Progress = 0.0  
07:00 Location is clear for permitting and construction

**08/23/2016**

Rig Name:  
Depth = 0.0 Progress = 0.0  
07:00 Construction: Pad is 55% cleared

**08/24/2016**

Rig Name:  
Depth = 0.0 Progress = 0.0  
07:00 Construction: pad is 50% cleared, road is 100% cleared

**08/25/2016**

Rig Name:  
Depth = 0.0 Progress = 0.0  
07:00 Construction: clear rest of location, cleared road, started setting cattle guard

**08/26/2016**

Rig Name:  
Depth = 0.0 Progress = 0.0  
07:00 Construction: Hauling caliche to pad, finish building reserve pits set cellar

**08/27/2016**

Rig Name:  
Depth = 0.0 Progress = 0.0  
07:00 Construction: Hauled caliche to location and road. Pushed up reserve pits, set cellar.

**08/28/2016**

Rig Name:  
Depth = 0.0 Progress = 0.0  
07:00 Construction: Finished location, road and reserve pits.

**08/29/2016**

Rig Name:  
Depth = 0.0 Progress = 0.0  
07:00 Construction: Lined pits, started filling pits with water

**08/30/2016**

Rig Name:  
Depth = 0.0 Progress = 0.0  
07:00 Construction: Filled pits with water. Location is ready for rig

**09/02/2016**

Rig Name:  
Depth = 0.0 Progress = 0.0  
07:00 Ran 40' of 20" 0.250 wall conductor pipe and cemented around it. Mouse hole will be dug after surface is ran.

**09/11/2016**

Rig Name:  
Depth = 0.0 Progress = 0.0  
06:00 SURFACE DRILLERS OF TEXAS SET ACHORS & DRILLES RAT HOLE FOR KELLY SHUCK. THE RIG WILL START MOVING IN ON 9-11-16

**09/12/2016**

Rig Name: SURFACE DRILLERS OF TEXAS RIG 2  
Depth = 151.0 Progress = 111.0  
06:00 RIG MOVE; SUB & UNIT ON LOCATION @ NOON; SET SUB OVER THE HOLE @ 1:00; SPOT UNIT OVER THE HOLE AND ON SUB BASE; RAISE DERRICK @ 2:00; RIGGING UP GUIDE WIRES & BACK YARD; WELD ON CONDUCTOR PIPE; RIG UP BACK YARD; FILL WATER TANKS & PITS;  
21:30 STRAP BHA, RIG HAS 4-8" DRILL COLLARS 13-6 1/2 DRILL COLLARS 25 JOINTS OF DRILL PIPE; PUSHER HAD TO GO PICK UP BIT SUB FOR 7 5/8 REG TO 6 5/8 REG FOR 17 1/2" BIT,  
01:00 PICK UP BIT AND SHOCK SUB 8" DC  
01:30 SPUD WELL DRLG F/ 40' T/ 151' = 111' @ 26.6 FPH; ALL WOB; 80 RPM;

**09/13/2016**

Rig Name: SURFACE DRILLERS OF TEXAS RIG 2

Depth = 488.0 Progress = 337.0

06:00 FLOW-LINE PLUGGED UP WITH RED BEDS; TAKE APART & CLEAN OUT - UNPLUG FLOW LINE; PUT BACK TOGETHER & TEST FLOW-LINE FLUID TRAVEL.

08:30 ROT DRLG F/ 151' T/ 488' = 337' @ 44.93 FPH WOB 25; RPM 60-80; PUMP PSI 430 GPM 500; NOTE - Surf rig used a 10' kb so td is 478'

16:00 CIRC. HOLE CLEAN

17:00 POOH LAYING DOWN DRILL STRING & BHA BREAK BIT & GRADE BIT.

19:00 PJSM/ WITH CASING CREW & LAY DOWN TRUCK & RIG CREW; RIGGING UP CASING CREW & LAY EQUIPMENT.

20:00 RUN 12 JTS 54.5# J-55 BTC 13 3/8" CASING RAN TO 488'. ON FIRST JT OF CASING MADE UP TEXAS PATTERN SHOE WITH THREAD LOCK, STOP RING AND CENTRALIZER PLACED 10' ABOVE SHOE. MADE UP FLOAT COLLAR AND 1ST JT OF CASING WITH THREAD LOCK. PICKED UP AND RAN 1 MORE JT. OF CASING PLACING 1 LOCK RING AND CENTRALIZER 3' ABOVE FLOAT COLLAR AND CENTRALIZED EVERY 3RD COLLAR TO SURFACE, TORQUING ALL CONNECTIONS TO 5,140 FT/LBS.; TEST FLOAT COLLAR; HOLDING GOOD. WASHED THE LAST 25 FT. TO BOTTOM.

22:30 CIRC. BOTTOMS UP & RIGGING DOWN CASING CREW TO SWAP OVER TO HALLIBURTON CEMENTING.

00:00 RIG UP HALLIBURTON, TEST LINES TO 1500; TEST OK; PUMP CEMENT JOB AS FOLLOWS: 20 BBLS GEL RED DYE SPACER; LEAD CEMENT: 540 SKS, 14.8 PPG, 1.356 YIELD, 6.26 GAL/SK; 69 BBLS OF FW DISPLACEMENT; LANDED PLUG @ 2AM WITH 1000 PSI; BROUGHT UP TO 1500 PSI AND HELD FOR 5 MINS; FLOATS HELD; GOT 1/2 BBL BACK FROM LINES; 100% RETURNS THROUGHOUT JOB; CIRCULATED 59 BBLS OR 244 SKS TO SURFACE.

02:00 RIG DOWN HALLIBURTON CEMENTERS.

02:30 CUT OFF CONDUCTOR PIPE; MAKE RUFF CUT ON CASING; LAY DOWN CUT OFF AND CONDUCTOR; PREP CASING FOR WELL HEAD.

03:00 WELD ON WELL HEAD; TEST VOID TO 500 PSI TESTED GOOD.

05:00 RIG RELEASE 9/13/16 @ 5:00 JETTING PITS; RIGGING DOWN

Vis (s/qt): 28, Dens (lb/gal): 8.50, pH: 0.0

#### 09/14/2016

Rig Name: SURFACE DRILLERS OF TEXAS RIG 2

Depth = 488.0 Progress = 0.0

06:00 RIGGING DOWN; CLEANING & MOVING OUT LOADS WITH 3 TRUCKS; MOVE OUT MIC. EQUIPMENT; RELEASING EQUIPMENT; UNIT, SUB, PIPE RACKS, DRILL COLLARS, PIPE, TOP DOG HOUSE & PIT STILL ON LOCATION.

15:00 STILL ON LOCATION AT 6 AM IS UNIT, DOG HOUSE, MUD, ONE WATER TANK, AND 13 3/8" CASING

19:00 WAITING ON TRUCKS; 13 3/8" CASING STILL ON LOCATION; WAITING FOR PICKUP AT 0700 AM

Vis (s/qt): 28, Dens (lb/gal): 8.50, pH: 0.0

#### 09/15/2016

Rig Name: SURFACE DRILLERS OF TEXAS RIG 2

Depth = 488.0 Progress = 0.0

06:00 RIG MOVE; MOVED 5 LOADS; ALL LOADS & EQUIPMENT OFF LOCATION

13:00 FENCED OFF CELLARS; AND RESERVE PITS; AND BACK DRUG 2 LOCATIONS. RIG READY.

#### 12/21/2016

Rig Name: H&P 602

Depth = 488.0 Progress = 0.0

18:00 DOCK TDS & UNSPOOL, RIG DOWN FLOOR & ALL HOISTS, RIG DOWN DRILLERS CABIN & DEFUB, RIG DOWN PITS & GET THEM READY TO LOAD OUT, SHUT DOWN POWER & RIG DOWN GEN PACKAGE & VFD HOUSE, SCOPE IN WIRE TRAY & L/D DEFUB ARM, R/D WATER TANKS & WORK MRC'S & PIN TO DERRICK, L/D DERRICK @ 14:00, L/D SUBS, MOVE RIG COMPONENTS TO NEW LOCATION

75% R/D

15% MOVED

22:00 WAIT ON DAYLIGHT & HOLD PJSM, CONTINUE TO R/D & MOVE RIG

#### 12/22/2016

Rig Name: H&P 602

Depth = 488.0 Progress = 0.0

06:00 MOVE IN AND RIG UP GEN SETS, MUD PITS AND PUMPS, VFD HOUSE, MCC HOUSE; SET AND ASSEMBLE SUB; RAISE FLOOR; RIG UP FLOOR;

#### 12/23/2016

Rig Name: H&P 602

Depth = 488.0 Progress = 0.0

06:00 HOLD PJSM WITH H&P RIG CREW & H&P TRUCKING, CONTINUE TO RIG UP & CONDUCT ANNUAL RIG INSPECTION PER H&P COA - HAVE REPAIRED 3 WELDS IN THE DERRICK, C/O BEARING ON MRC. INSTALL ADDITIONAL MUD PUMP & FAB IN SUCTION LINES & STAND PIPE LINE. DERRICK RAISED @ 16:00:

18:00 RIG UP VIBRATOR LINES IN BACKYARD; RIG UP ELECTRIC ON PITS, PUMPS,  
ALL BACKYARD, DOGHOUSE, SUBSTRUCTURE, RIG FLOOR AND DERRICK,

## 12/24/2016

Rig Name: H&P 602

Depth = 488.0 Progress = 0.0

06:00 CONDUCTED PRE-SPUD INSPECTION; CONTINUE TO RIG UP MISL. EQUIPMENT  
IN BACKYARD. FILL PITS WITH 10.0 PPG BRINE OUT OF RESERVE PIT & R/U  
ALL PVC & TRANSFER PUMPS TO CIRC. RESERVE PIT WHILE DRILLING 1ST  
INTERMEDIATE HOLE SECTION.

11:30 N/U BOPS & CHOKE LINE TO CHOKE MANIFOLD, N/U WELLHEAD SPOOL, N/U  
SPACER SPOOL, N/U BOP STACK, CONNECT ALL HYDRAULIC LINES, CHOKE  
LINE, KILL LINE. REMOVED 3.5" x 5" VBR'S AND INSTALLED 4.5" x 7" VBR'S IN  
LOWER RAMS WHILE BOP IS ON STUMP. INSTALL BOP OVER HOLE & N/U TO  
WELLHEAD. CHANGED OUT SAVER SUB ON TOP DRIVE.

18:30 TEST BOP AND ALL BOP EQUIPMENT TO 5,000 PSI FOR 5 MIN AND 250 PSI  
FOR 5 MIN; TEST ANNULAR TO 3,500 PSI FOR 5 MIN AND 250 PSI FOR 5 MIN;  
TEST CHOKE MANIFOLD AND CHOKE LINE TO 5,000 PSI FOR 5 MIN AND 250  
PSI FOR 5 MIN; ALL TESTS GOOD.

01:00 RU TESTER AND TEST MUD LINES FROM TOP DRIVE TO MUD PUMPS; 2  
GASKETS FAILED ON TEST CAP @ 5,500 PSI; TEST HOSE BEGAN LEAKING ON  
3RD ATTEMPT, REPLACED AND RE-TESTED; LEAKS ON PLUMBING ON NEW  
MUD PUMP @ 5,100 PSI; BROKE APART PLUMBING AND FOUND NO GASKET IN  
1502 UNION ON NEW MUD PUMP;

02:30 TAKE APART ALL HIGH PRESSURE CONNECTIONS ON NEW MUD PUMP AND  
CHECK GASKETS; PUT PLUMBING BACK TOGETHER; RE-TEST; 2" BLEED OFF  
VALVE ON STANDPIPE IS LEAKING @ PACKING; REPLACE PACKING IN VALVE;

05:00 RE-TEST MUD LINES FROM TOP DRIVE TO MUD PUMPS; 7,500 PSI FOR 10 MIN.  
GOOD TEST.

05:30 FILL UP STACK; CLOSE BLIND RAMS RU TESTER AND BEGIN TESTING 13 3/8"  
CASING TO 1,500 PSI FOR 30 MINUTES; CHANGING OUT LINERS AND SWABS  
IN #3 MUD PUMP FROM 5" TO 6".

## 12/25/2016

Rig Name: H&P 602

Depth = 2,107.0 Progress = 1604.0

06:00 TEST 13 3/8" CASING TO 1500 PSI & HELP FOR 30 MIN. - GOOD TEST

06:30 C/O LINERS IN MUD PUMP #3 F/5" - T6" LINERS

11:30 INSTALL WEAR BUSHING

12:00 P/U 1ST INTERMEDIATE SECTION BHA AS FOLLOWS  
12.25" DF616X2 BIT DRESSED WITH 7-15's, 1-9 5/8" WEATHERFORD M.MTR  
6/7 LOBE, 5.0 STAGE, 0.12 RPG, 7.69 BIT-BEND, 1-12 1/8" R.RMR, 1-8" PONY  
NMDC, 1-HEL/LWD, 1-8" NMDC, 1-12 1/8" R.RMR, 1-8" SHOCK SUB, X/O,  
10-6.5" DC's, X/O, 26 JOINTS 5" HWDP.  
TIH F/SURFACE - T/437' - TAGED CMT

17:00 DRILL CEMENT & SHOE TRACK F/ 437' - T/ 503', TAGGED CMT @ 437' AND  
FLOAT COLLAR @ 438' DRILLED FIRM CMT IN SHOE TRACK, TAGGED SHOE @  
502'.

INSTALLED DITCH MAGNETS IN POSSUM BELLIES\*\*

18:30 DRILLING 12 1/4" INTERM1 HOLE F/ 503' - T/ 643' ( 140' @ 140 FPH). WOB :  
10-15K, SPM: 150, TOP DRV RPM: 30 - 50. GPM: 576. MUD MTR RPM:69, TOP  
DRV TRQ: 4,500-8,500 FT/LBS ON BTM, DIFF PSI: 250-500, MW IN 10.0 PPG  
DRILLING THROUGH FLOWLINE. CIRCULATING INSIDE RESERVE PIT

19:30 DRILLING 12 1/4" INTERM1 HOLE F/ 643' - T/ 1,245' ( 602' @ 150.5 FPH).  
WOB : 45K, SPM: 200, TOP DRV RPM: 75/85. GPM: 768. MUD MTR RPM: 92,  
TOP DRV TRQ: 18,500 FT/LBS ON BTM, DIFF PSI: 600/900, MW IN 10.0 PPG  
DRILLING THROUGH FLOWLINE. CIRCULATING INSIDE RESERVE PIT

23:30 DRILLING 12 1/4" INTERM1 HOLE F/ 1,245' - T/ 1,875' ( 630' @ 180 FPH).  
WOB : 45K/50K, SPM: 231/246, TOP DRV RPM: 75/100. GPM: 887/945; MUD  
MTR RPM: 107/113; TOP DRV TRQ: 18,500/20,000 FT/LBS ON BTM, DIFF PSI:  
600/900, MW IN 10.0 PPG DRILLING THROUGH FLOWLINE. CIRCULATING  
INSIDE RESERVE PIT

03:00 REPLACE GASKET IN ROTATING HEAD; HARD TIME BREAKING DP CONN;  
41,000 FT/LBS.

04:00 DRILLING 12 1/4" INTERM1 HOLE F/ 1,875' - T/ 2,107' ( 232' @ 116 FPH).  
WOB : 25K/35K, SPM: 270, TOP DRV RPM: 45/85. GPM: 1,037; MUD MTR RPM:  
125; TOP DRV TRQ: 3500/8500 FT/LBS ON BTM, DIFF PSI: 600/900, MW IN  
10.0 PPG DRILLING THROUGH FLOWLINE. CIRCULATING INSIDE RESERVE PIT

Vis (s/qt): 28, Dens (lb/gal): 10.00, pH: 7.0

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
578.0	577.98	0.80	329.30	3.74	0.14	3.32	-1.97
729.0	728.97	0.84	318.24	5.76	0.11	5.05	-3.25
910.0	909.94	0.96	302.43	8.10	0.15	6.85	-5.41
1,091.0	1,090.94	0.31	199.11	8.84	0.59	7.20	-6.85
1,242.0	1,241.93	0.88	327.67	9.62	0.73	7.80	-7.60

1,431.0	1,430.91	0.63	330.82	12.03	0.13	9.93	-8.89
1,620.0	1,619.90	0.93	10.12	14.41	0.32	12.35	-9.12
1,810.0	1,809.86	1.42	30.68	17.40	0.34	15.89	-7.65
1,999.0	1,998.79	1.56	34.96	20.61	0.09	20.01	-4.98

## 12/26/2016

Rig Name: H&P 602

Depth = 4,406.0 Progress = 2299.0

06:00 DRILLING 12 1/4" INTERM1 HOLE F/ 2,107' - T/ 2,610' ( 503' @ 126 FPH).  
WOB : 25K/35K, SPM: 270, TOP DRV RPM: 45/85. GPM: 1,037; MUD MTR RPM: 125; TOP DRV TRQ: 3500/8500 FT/LBS ON BTM, DIFF PSI: 600/900, MW IN 10.0 PPG DRILLING THROUGH FLOWLINE. CIRCULATING INSIDE RESERVE PIT

10:00 DRILLING 12 1/4" INTERM1 HOLE F/ 2,610' - T/ 2,822' ( 212' @ 84 FPH). WOB : 25K/35K, SPM: 270, TOP DRV RPM: 45/85. GPM: 1,037; MUD MTR RPM: 125; TOP DRV TRQ: 3500/8500 FT/LBS ON BTM, DIFF PSI: 600/900, MW IN 10.0 PPG DRILLING THROUGH FLOWLINE. CIRCULATING INSIDE RESERVE PIT

12:30 SLIDE DRILL F/ 2,822' - T/ 2,877' ( 55' @ 55 FPH )- GTF: 220, WOB : 25K/35K, SPM: 270, TOP DRV RPM: 45/85. GPM: 1,037; MUD MTR RPM: 125; TOP DRV TRQ: 0/0 FT/LBS ON BTM, DIFF PSI: 200/300, MW IN 10.0 PPG DRILLING THROUGH FLOWLINE. CIRCULATING INSIDE RESERVE PIT

13:30 DRILLING 12 1/4" INTERM1 HOLE F/ 2,877' - T/ 3,200' ( 323' @ 129 FPH). WOB : 35K/45K, SPM: 270, TOP DRV RPM: 45/85. GPM: 1,037; MUD MTR RPM: 125; TOP DRV TRQ: 3500/8500 FT/LBS ON BTM, DIFF PSI: 600/900, MW IN 10.0 PPG DRILLING THROUGH FLOWLINE. CIRCULATING INSIDE RESERVE PIT

16:00 RIG SERVICE

16:30 DRILLING 12 1/4" INTERM1 HOLE F/ 3,200' - T/ 3,633' ( 433' @ 108.25 FPH). WOB : 35K/45K, SPM: 270, TOP DRV RPM: 45/85. GPM: 1,037; MUD MTR RPM: 125; TOP DRV TRQ: 3500/16,000 FT/LBS ON BTM, DIFF PSI: 250/650, MW IN 10.0 PPG DRILLING THROUGH FLOWLINE. CIRCULATING INSIDE RESERVE PIT

20:30 DRILLING 12 1/4" INTERM1 HOLE F/ 3,633' - T/ 4,055' ( 422' @ 105.5 FPH). WOB : 35K/45K, SPM: 270, TOP DRV RPM: 45/85. GPM: 1,037; MUD MTR RPM: 125; TOP DRV TRQ: 5500/20,000 FT/LBS ON BTM, DIFF PSI: 475/800, MW IN 10.0 PPG DRILLING THROUGH FLOWLINE. CIRCULATING INSIDE RESERVE PIT

00:30 DRILLING 12 1/4" INTERM1 HOLE F/ 4,055' - T/ 4,150' ( 95' @ 100 FPH). WOB : 35K/45K, SPM: 270, TOP DRV RPM: 45/85. GPM: 1,037; MUD MTR RPM: 125; TOP DRV TRQ: 5500/20,000 FT/LBS ON BTM, DIFF PSI: 475/800, MW IN 10.0 PPG DRILLING THROUGH FLOWLINE. CIRCULATING INSIDE RESERVE PIT

02:00 SLIDE DRILL F/ 4,150' - T/ 4,240' ( 90' @ 45 FPH )- GTF: 180, WOB : 35K/50K, SPM: 270, TOP DRV RPM: 45/85. GPM: 1,037; MUD MTR RPM: 125; TOP DRV TRQ: 0/0 FT/LBS ON BTM, DIFF PSI: 275/550, MW IN 10.0 PPG DRILLING THROUGH FLOWLINE. CIRCULATING INSIDE RESERVE PIT

04:00 DRILLING 12 1/4" INTERM1 HOLE F/ 4,240' - T/ 4,338' ( 98' @ 98 FPH). WOB : 35K/45K, SPM: 270/200, TOP DRV RPM: 85/110. GPM: 1,037/768; MUD MTR RPM: 125/92; TOP DRV TRQ: 5500/20,000 FT/LBS ON BTM, DIFF PSI: 475/800, MW IN 10.0 PPG DRILLING THROUGH FLOWLINE. CIRCULATING INSIDE RESERVE PIT

05:00 \*\*NOTE\*\* SLOWED TO 2 PUMPS DUE TO LEAKING ROTATING HEAD RUBBER.

05:00 REPLACE LEAKING ROTATING HEAD RUBBER.

05:30 DRILLING 12 1/4" INTERM1 HOLE F/ 4,338' - T/ 4,406' ( 68' @ 136 FPH). WOB : 35K/45K, SPM: 270, TOP DRV RPM: 45/85. GPM: 1,037; MUD MTR RPM: 125; TOP DRV TRQ: 5500/20,000 FT/LBS ON BTM, DIFF PSI: 475/800, MW IN 10.0 PPG DRILLING THROUGH FLOWLINE. CIRCULATING INSIDE RESERVE PIT

Vis (s/qt): 28, Dens (lb/gal): 10.00, pH: 7.0

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
2,193.0	2,192.70	1.91	35.89	24.24	0.18	24.80	-1.57
2,377.0	2,376.58	2.22	42.01	27.99	0.21	29.93	2.61
2,567.0	2,566.42	2.59	46.59	31.88	0.22	35.61	8.19
2,757.0	2,756.19	3.03	49.11	35.93	0.24	41.85	15.10
2,946.0	2,945.10	0.31	140.91	37.53	1.62	44.73	19.20
3,136.0	3,135.10	0.14	124.29	36.88	0.09	44.20	19.72
3,325.0	3,324.10	0.06	323.52	36.79	0.10	44.15	19.85
3,515.0	3,514.10	0.49	51.80	37.19	0.26	44.73	20.43
3,705.0	3,704.09	0.44	61.76	37.64	0.05	45.58	21.71
3,894.0	3,893.07	1.15	83.32	37.48	0.40	46.14	24.24
4,084.0	4,082.97	2.48	77.65	36.87	0.71	47.24	30.15
4,273.0	4,271.75	4.55	186.08	29.65	3.08	40.66	33.35

## 12/27/2016

Rig Name: H&P 602

Depth = 5,072.0 Progress = 666.0

06:00 DRILLING 12 1/4" INTERM1 HOLE F/ 4,406' - T/ 4,433' ( 27' @ 54 FPH). WOB : 35K/45K, SPM: 270, TOP DRV RPM: 45/85. GPM: 1,037; MUD MTR RPM: 125; TOP DRV TRQ: 5500/20,000 FT/LBS ON BTM, DIFF PSI: 475/800, MW IN 10.0 PPG DRILLING THROUGH FLOWLINE. CIRCULATING INSIDE RESERVE PIT

06:30 SLIDE DRILL F/ 4,433' - T/ 4,474' ( 41' @ 41 FPH )- GTF: 180, WOB : 35K/50K, SPM: 270, TOP DRV RPM: 0/0. GPM: 1,037; MUD MTR RPM: 125; TOP DRV TRQ: 0/0 FT/LBS ON BTM, DIFF PSI: 275/550, MW IN 10.0 PPG DRILLING THROUGH FLOWLINE. CIRCULATING INSIDE RESERVE PIT

07:30 DRILLING 12 1/4" INTERM1 HOLE F/ 4,474' - T/ 4,860' ( 386' @ 96 FPH). WOB : 35K/45K, SPM: 270, TOP DRV RPM: 45/85. GPM: 1,037; MUD MTR RPM: 125; TOP DRV TRQ: 5500/20,000 FT/LBS ON BTM, DIFF PSI: 475/800, MW IN 10.0 PPG DRILLING THROUGH FLOWLINE. CIRCULATING INSIDE RESERVE PIT

11:30 DRILLING 12 1/4" INTERM1 HOLE F/ 4,860' - T/ 5,072' ( 212' @ 70 FPH). WOB : 35K/45K, SPM: 255, TOP DRV RPM: 45/85. GPM: 980; MUD MTR RPM: 117; TOP DRV TRQ: 5500/20,000 FT/LBS ON BTM, DIFF PSI: 475/800, MW IN 10.0 PPG DRILLING THROUGH FLOWLINE. CIRCULATING INSIDE RESERVE PIT

14:30 PUMP 50 BBL, 65 VIS SWEEP TO CLEAN HOLE FOR 9 5/8" CSG; SWEEP BACK WITH 25% SCREEN COVERAGE OF MED AND FINE CUTTINGS; CLEANED UP IMMEDIATELY AFTER SWEEP. SHUT DOWN PUMPS AND FLOW CHECK WELL; WELL IS STATIC.

16:30 SLM OUT OF HOLE F/5,072' - T/SURFACE; LD 8" BHA AND REAMERS; DRAIN MOTOR, BREAK AND DULL GRADE BIT; WELL IS TAKING PROPER FILL; BIT GRADE 1-1 FULL GAUGE, NO VISIBLE WEAR; LD MOTOR; NO UNUSUAL DRAG; SLM= 5,072', NO CORRECTIONS MADE TO TALLY.

23:30 PULL WEAR BUSHING; PU AND RU CRT TOOL; PREPARE FLOOR FOR 9 5/8" CSG RUN.

02:00 MAKE UP FS, 1 JT OF 40#. HCL-80, LTC, 9 5/8" CSG, AND FC; THREAD LOCKING ALL CONNECTIONS AND TORQUING TO 7,200 FT/LBS; PUMP THROUGH FLOATS, FLOATS ARE GOOD; RUN 9.625" CASING F/ SURFACE - T/5062', WITH NORMAL DRAG & WELL STATIC, AS FOLLOWS, 1-9.625" FLOAT S., 1-JT 9.625" 40# HCL-80 LTC CSG, 1-9.625" NON-ROT. FLOAT C., 111 - JTS OF 9.625" HCL-80 40.0# LTC CSG, FLOW CHECKED FLOATS, GOOD, INSTALLED 1 BOW SPRING CENT ON SHOE JOINT 10' FROM SHOE, ONE BOW SPRING CENT 10' ABOVE FLOAT COLLAR, THEN ONE EVERY THIRD JOINT BACK TO SURFACE FOR A TOTAL OF 38 BOW SPRING CENTRALIZERS, P/U LANDING JOINT AND LAND OUT CASING WITH CACTUS FLUTED MANDRELL HANGER. FLOAT C. @ 5,012', SHOE @ 5,062.3'; TOTAL PIPE @ REPORT TIME= 55 JTS IN HOLE TO 2,515'.

Vis (s/qt): 31, Dens (lb/gal): 10.00, pH: 9.5

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
4,463.0	4,461.38	2.52	198.74	19.26	1.14	29.20	31.21
4,652.0	4,650.25	1.62	188.18	13.43	0.52	22.63	29.49
4,841.0	4,839.18	1.56	178.91	8.52	0.14	17.41	29.16
5,007.0	5,005.12	1.59	170.82	4.05	0.14	12.88	29.57

## 12/28/2016

Rig Name: H&P 602

Depth = 5,313.0 Progress = 241.0

06:00 RUN 9.625" CASING F/ SURFACE - T/5062.3', WITH NORMAL DRAG & WELL STATIC, AS FOLLOWS, 1-9.625" FLOAT S., 1-JT 9.625" 40# HCL-80 LTC CSG, 1-9.625" NON-ROT. FLOAT C., 111 - JTS OF 9.625" HCL-80 40.0# LTC CSG, FLOW CHECKED FLOATS, GOOD, INSTALLED 1 BOW SPRING CENT ON SHOE JOINT 10' FROM SHOE, ONE BOW SPRING CENT 10' ABOVE FLOAT COLLAR, THEN ONE EVERY THIRD JOINT BACK TO SURFACE FOR A TOTAL OF 38 BOW SPRING CENTRALIZERS, P/U LANDING JOINT AND LAND OUT CASING WITH CACTUS FLUTED MANDRELL HANGER. FLOAT C. @ 5,012', SHOE @ 5,062.3'

11:00 CIRC 1 CSG CAPACITY @ 7 BPM, CIRC 1 CSG CAPACITY @ 10 BPM, HPJSM W/ CMT COMPANY & RIG CREW & FORGE

12:30 CIRCULATE WHILE WAITING ON HALLIBURTON PUMP TRUCK & CMT CREW TO ARRIVE ON LOCATION - HALLIBURTON HAD 24 HOUR NOTICE & WAS SCHEDULED TO BE ON LOCATION @ 06:00. HALLIBURTON ARRIVED @ 13:00. WE WILL CONTINUE TO CIRCULATE WHILE HALLIBURTON GETS SPOTED IN & R/U STEEL LINES

14:30 CEMENT 9 5/8" CSG AS FOLLOWS: PRESSURE TEST LINES TO 4K, PUMPED 20 BBL FRESH WATER GEL SPACER, PUMPED 1010 SX (505 BBLs) 11.0 PPG LEAD NEOCEM @ 2.81 YIELD 17.401 GAL/SK FW, W/ 110% XS PUMPED AT 6 BPM, PUMPED 160 SX (38 BBLs) 14.8 PPG TAIL HALCEM @ 1.332 YIELD 6.419 GAL/SK FW; W/ 20% XS PUMPED AT 6 BPM, STING OUT WITH CRT & DROP NON-ROT PLUG & DISPLACE WITH 380 BBLs OF FW. BUMP PLUG @ 3 BPM @ 700 PSI WITH 500 PSI OVER = 1200 PSI, HELD FOR 5 MIN, BLEAD OFF GAINED 2 BBLs, FLOATS HOLDING. HAD FULL RETURNS THE ENTIRE JOB - NO CEMENT CIRCULATED BACK TO SURFACE. HALLIBURTON CAL. TOC @ 612'

17:30 WHILE WOC- RIG DOWN HALLIBURTON; RIG DOWN CRT TOOL AND CLEAR FLOOR; BACKOFF LANDING JOINT; RUN WASHOUT TOOL IN WELLHEAD; INSTALL PACKOFF AND PULL TEST TO 40K; GOOD TEST; PRESSURE TEST PACKOFF TO 5,000 PSI; GOOD TEST; INSTALL WEAR BUSHING;

20:30 WHILE WOC, P/U 2ND INTERMEDIATE SECTION BHA AS FOLLOWS  
8.75" SMITH Z619 PDC BIT DRESSED WITH 6-14's(TFA 0.902), 1- 6 3/4" WEATHERFORD M.MTR 9/10 LOBE, 8.0 STAGE, 0.27 RPG, 3.88' BIT-BEND, 1.15 DEG ABH, 1- 8.5" R.RMR, 1- 6.5" MULESHOE NMDC, 1-HPTC, 1- 6.5" NMDC,

1-8.5" R.RMR, X/O, 12-6.5" DC's, X/O, 21 JOINTS 5" HWDP.  
 TIH F/SURFACE - T/5,006' - TAGGED CMT

01:30 BREAK CIRCULATION TO REMOVE ALL AIR FROM CASING AND DRILL STRING;  
 PERFORM CASING TEST TO 2,700 PSI FOR 30 MINUTES AND CHARTED ON  
 TOTCO; GOOD TEST, 1.5% LEAK OFF F/2,716 PSI T/2,669 PSI.

03:00 DRILL CEMENT & SHOE TRACK F/ 5,006' - T/ 5,072', TAGGED CMT @ 5,006'  
 AND FLOAT COLLAR @ 5,013' DRILLED FIRM CMT IN SHOE TRACK, TAGGED  
 SHOE @ 5,061'; 15 WOB; 450 GPM; 40 RPM; 175 PSI DIFF; 1,550 SPP;  
 MMRPM 122; TORQ ON BTM: 3300 FT/LBS.

04:00 DRILLING 8 3/4" INTERM2 HOLE F/ 5,072' - T/ 5,173' ( 101' @ 101 FPH). WOB  
 : 15K/25K, SPM: 154, TOP DRV RPM: 40/50. GPM: 600; MUD MTR RPM: 162;  
 TOP DRV TRQ: 3500/5500 FT/LBS ON BTM, DIFF PSI: 500/700, MW IN 9.1 PPG  
 DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT

05:00 DRILLING 8 3/4" INTERM2 HOLE F/ 5,173' - T/ 5,313' ( 140' @ 140 FPH). WOB  
 : 40K/45K, SPM: 190, TOP DRV RPM: 100. GPM: 691; MUD MTR RPM: 187; TOP  
 DRV TRQ: 14,500/16,500 FT/LBS ON BTM, DIFF PSI: 450/575, MW IN 9.1 PPG  
 DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT

Vis (s/qt): 28, Dens (lb/gal): 9.10, pH: 9.5

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
5,200.0	5,198.05	1.54	171.06	-1.18	0.03	7.67	30.40

## 12/29/2016

Rig Name: H&P 602

Depth = 7,323.0 Progress = 2010.0

06:00 DRILLING 8 3/4" INTERM2 HOLE F/ 5,313' - T/ 5,765' (452' @ 113 FPH). WOB :  
 40K/45K, SPM: 190, TOP DRV RPM: 85. GPM: 691; MUD MTR RPM: 187; TOP  
 DRV TRQ: 14,500/16,500 FT/LBS ON BTM, DIFF PSI: 450/575, MW IN 9.1 PPG  
 DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT

10:00 DRILLING 8 3/4" INTERM2 HOLE F/ 5,765' - T/ 6,215' (450' @ 112.5 FPH).  
 WOB : 40K/45K, SPM: 190, TOP DRV RPM: 85. GPM: 691; MUD MTR RPM: 187;  
 TOP DRV TRQ: 14,500/16,500 FT/LBS ON BTM, DIFF PSI: 450/575, MW IN 9.1  
 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT

14:00 SLIDE DRILL F/ 6,215' - T/ 6,267' ( 52' @ 52 FPH )- GTF: 180, WOB : 35K/50K,  
 SPM: 180,SPP: 3050, TOP DRV RPM: 0/0. GPM: 690; MUD MTR RPM: 186; TOP  
 DRV TRQ: 0/0 FT/LBS ON BTM, DIFF PSI: 150/350, MW IN 9.1 PPG DRILLING  
 THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT

15:00 DRILLING 8 3/4" INTERM2 HOLE F/ 6,267' - T/ 6,312' (45' @ 45 FPH). WOB :  
 40K/45K, SPM: 190, TOP DRV RPM: 85. GPM: 691; MUD MTR RPM: 187; TOP  
 DRV TRQ: 14,500/16,500 FT/LBS ON BTM, DIFF PSI: 450/575, MW IN 9.1 PPG  
 DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT

16:00 SERVICE RIG AND TDS; GREASE CROWN.

16:30 DRILLING 8 3/4" INTERM2 HOLE F/ 6,312' - T/ 6,437' (125' @ 83 FPH). WOB :  
 40K/45K, SPM: 190, TOP DRV RPM: 85. GPM: 691; MUD MTR RPM: 187; TOP  
 DRV TRQ: 14,500/16,500 FT/LBS ON BTM, DIFF PSI: 450/575, MW IN 9.1 PPG  
 DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT

18:00 DRILLING 8 3/4" INTERM2 HOLE F/ 6,437' - T/ 6,730' (293' @ 73 FPH). WOB :  
 40K/48K, SPM: 180, TOP DRV RPM: 85/90. GPM: 685; MUD MTR RPM: 185;  
 TOP DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/375, MW IN 9.3  
 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT  
 (CLOSE LOOP 1 HR NO LOSSES OR GAINS)

22:00 DRILLING 8 3/4" INTERM2 HOLE F/ 6,730' - T/ 7,030' (300' @ 75 FPH). WOB :  
 45K/48K, SPM: 180, TOP DRV RPM: 85. GPM: 685; MUD MTR RPM: 185; TOP  
 DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/375, MW IN 9.3 PPG  
 DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT

02:00 DRILLING 8 3/4" INTERM2 HOLE F/ 7,030' - T/ 7,323' (293' @ 73.25 FPH).  
 WOB : 45K/48K, SPM: 180, TOP DRV RPM: 85. GPM: 685; MUD MTR RPM: 185;  
 TOP DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/375, MW IN 9.3  
 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT  
 (CLOSE LOOP 1 HR NO LOSSES OR GAINS)

Vis (s/qt): 29, Dens (lb/gal): 9.20, pH: 11.0

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
5,390.0	5,387.98	1.51	171.20	-6.19	0.02	2.67	31.18
5,579.0	5,576.92	1.44	171.63	-11.01	0.04	-2.14	31.91
5,768.0	5,765.85	1.54	172.61	-15.87	0.05	-7.00	32.58
5,958.0	5,955.78	1.55	172.89	-20.93	0.01	-12.09	33.23
6,148.0	6,145.71	1.66	177.52	-26.14	0.09	-17.39	33.66
6,337.0	6,334.68	1.61	313.28	-26.51	1.60	-18.30	31.85
6,527.0	6,524.59	1.77	316.00	-21.61	0.09	-14.36	27.87
6,717.0	6,714.49	1.98	312.01	-16.22	0.13	-10.05	23.39
6,906.0	6,903.38	1.92	304.03	-11.00	0.15	-6.09	18.34
7,096.0	7,093.28	1.92	299.98	-6.25	0.07	-2.72	12.95

## 12/30/2016

Rig Name: H&P 602

Depth = 8,465.0 Progress = 1142.0

06:00 DRILLING 8 3/4" INTERM2 HOLE F/ 7,323' - T/ 7,545' (222' @ 55.5 FPH). WOB : 45K/48K, SPM: 180, TOP DRV RPM: 85. GPM: 685; MUD MTR RPM: 185; TOP DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/375, MW IN 9.3 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

10:00 DRILLING 8 3/4" INTERM2 HOLE F/ 7,545' - T/ 7,638' (93' @ 38 FPH). WOB : 45K/48K, SPM: 180, TOP DRV RPM: 85. GPM: 685; MUD MTR RPM: 185; TOP DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/375, MW IN 9.3 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

12:30 CHANGE OUT ROTATING HEAD RUBBER AND CLAMP ON ROTATING HEAD DUE TO LEAKS.

13:30 DRILLING 8 3/4" INTERM2 HOLE F/ 7,638' - T/ 7,773' (135' @ 90 FPH). WOB : 45K/48K, SPM: 180, TOP DRV RPM: 85. GPM: 685; MUD MTR RPM: 185; TOP DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/375, MW IN 9.3 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

15:00 SHUT DOWN TO REPAIR AIR LINE ON ORBIT VALVE, PUMPS OFF FOR 15 MINUTES WELL BEGAN FLOWING; DIVERTED FLOW TO CHOKE AND GAS SEPARATOR; 1 PUMP ON THE HOLE @ 40 SPM TO CIRCULATE OUT INFLUX AND BEGAN WORKING STRING. TRIED TO PACK OFF BUT BROKE FREE WITH 24,000 FT/LBS TORQUE AT 15 RPM'S; AFTER FREE, ROTATED @ 50 RPM AND RECIPROCATED STRING, BOTTOMS UP WITH 3,800 UNITS OF GAS AND 25' FLARE FOR 10/12 MINUTES; PUMPED 15 BBLS OF 65 VIS SWEEP TO INSURE WELL BORE IS CLEAN; SWEEP CAME BACK CLEAN WITH 1,844 UNITS OF GAS AND 2'5' LAZY INTERMITTENT FLARE.

16:30 DRILLING 8 3/4" INTERM2 HOLE F/ 7,773' - T/ 7,828' (55' @ 36.6 FPH). WOB : 45K/48K, SPM: 180, TOP DRV RPM: 85. GPM: 685; MUD MTR RPM: 185; TOP DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/375, MW IN 9.3 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT. RAISING MW TO 9.4+; CONNECTION GAS AVERAGE 3,800 UNITS; WITH 5'/10' CONNECTION FLARE 2/3 MINUTES.

18:00 DRILLING 8 3/4" INTERM2 HOLE F/ 7,828' - T/ 7,923' (95' @ 47.5 FPH). WOB : 45K/48K, SPM: 180, TOP DRV RPM: 85. GPM: 685; MUD MTR RPM: 185; TOP DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/375, MW IN 9.3 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT. RAISING MW TO 9.4+;

20:00 SLIDE DRILL F/ 7,923' - T/ 7,968' ( 45' @ 22.5 FPH )- GTF: 55R, WOB : 35K/50K, SPM: 180,SPP: 3050, TOP DRV RPM: 0/0. GPM: 690; MUD MTR RPM: 186; TOP DRV TRQ: 0/0 FT/LBS ON BTM, DIFF PSI: 150/350, MW IN 9.1 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT

22:00 DRILLING 8 3/4" INTERM2 HOLE F/ 7,968' - T/ 8,215' (247' @ 61.7 FPH). WOB : 50K/54K, SPM: 180, TOP DRV RPM: 65/75. GPM: 685; MUD MTR RPM: 185; TOP DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/375, MW IN 9.3 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT. RAISING MW TO 9.4+;

02:00 DRILLING 8 3/4" INTERM2 HOLE F/ 8,215' - T/ 8,465' (250' @ 62.5 FPH). WOB : 50K/55K, SPM: 180, TOP DRV RPM: 65. GPM: 685; MUD MTR RPM: 185; TOP DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.3 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT. RAISING MW TO 9.4+;

Vis (s/qt): 29, Dens (lb/gal): 9.30, pH: 11.0

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
7,285.0	7,282.16	2.07	291.92	-1.85	0.17	0.13	7.04
7,475.0	7,472.05	2.13	238.33	-0.66	1.00	-0.44	0.85
7,664.0	7,660.89	2.62	235.12	-2.97	0.27	-4.75	-5.68
7,854.0	7,850.65	3.10	234.97	-6.00	0.25	-10.19	-13.45
8,044.0	8,040.56	0.41	146.50	-8.30	1.64	-13.70	-17.29
8,233.0	8,229.54	0.94	185.12	-10.39	0.35	-15.81	-17.05

## 12/31/2016

Rig Name: H&P 602

Depth = 9,860.0 Progress = 1395.0

06:00 DRILLING 8 3/4" INTERM2 HOLE F/ 8,465' - T/ 8,681' (216' @ 72 FPH). WOB : 50K/55K, SPM: 180, TOP DRV RPM: 65. GPM: 685; MUD MTR RPM: 185; TOP DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

09:00 SLIDE DRILL F/ 8,681' - T/ 8,736' ( 55' @ 36.7 FPH )- GTF: 20R, WOB : 35K/50K, SPM: 180,SPP: 3050, TOP DRV RPM: 0/0. GPM: 690; MUD MTR RPM: 186; TOP DRV TRQ: 0/0 FT/LBS ON BTM, DIFF PSI: 150/350, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT

10:30 DRILLING 8 3/4" INTERM2 HOLE F/ 8,736' - T/ 9,061' (325' @ 72.23 FPH). WOB : 50K/55K, SPM: 180, TOP DRV RPM: 65. GPM: 685; MUD MTR RPM: 185; TOP DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

15:00 SLIDE DRILL F/ 9,061' - T/ 9,110' ( 49' @ 25 FPH )- GTF: 20R, WOB : 35K/50K, SPM: 180,SPP: 3050, TOP DRV RPM: 0/0. GPM: 690; MUD MTR RPM: 186; TOP DRV TRQ: 0/0 FT/LBS ON BTM, DIFF PSI: 150/350, MW IN 9.4+ PPG DRILLING

17:00 THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT  
 DRILLING 8 3/4" INTERM2 HOLE F/ 9,110' - T/ 9,420' (310' @ 62 FPH). WOB :  
 40K/50K, SPM: 180, TOP DRV RPM: 60. GPM: 685; MUD MTR RPM: 185; TOP  
 DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+  
 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

22:00 DRILLING 8 3/4" INTERM2 HOLE F/ 9,420' - T/ 9,675' (255' @ 63.7 FPH). WOB  
 : 40K/50K, SPM: 180, TOP DRV RPM: 60. GPM: 685; MUD MTR RPM: 185; TOP  
 DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+  
 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

02:00 DRILLING 8 3/4" INTERM2 HOLE F/ 9,675' - T/ 9,819' (144' @ 63.7 FPH). WOB  
 : 40K/50K, SPM: 180, TOP DRV RPM: 60. GPM: 685; MUD MTR RPM: 185; TOP  
 DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+  
 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

04:00 SLIDE DRILL F/ 9,819' - T/ 9,860' ( 41' @ 20.5 FPH )- GTF: 90R, WOB :  
 35K/50K, SPM: 180,SPP: 3050, TOP DRV RPM: 0/0. GPM: 690; MUD MTR RPM:  
 186; TOP DRV TRQ: 0/0 FT/LBS ON BTM, DIFF PSI: 150/350, MW IN 9.4+ PPG  
 DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT

Vis (s/qt): 30, Dens (lb/gal): 9.35, pH: 9.5

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
8,423.0	8,419.49	1.75	185.73	-14.53	0.43	-20.25	-17.48
8,612.0	8,608.31	3.17	176.72	-22.29	0.78	-28.34	-17.47
8,802.0	8,798.19	0.91	135.33	-28.74	1.35	-34.66	-16.11
8,991.0	8,987.12	2.08	181.10	-33.33	0.84	-39.15	-15.12
9,181.0	9,177.09	1.04	0.61	-34.97	1.64	-40.88	-15.17
9,370.0	9,366.05	1.35	324.64	-31.23	0.42	-37.35	-16.44
9,560.0	9,555.96	2.28	322.29	-25.59	0.49	-32.53	-20.04
9,750.0	9,745.76	2.93	319.78	-17.64	0.35	-25.83	-25.49

## 01/01/2017

Rig Name: H&P 602

Depth = 10,487.0 Progress = 627.0

06:00 SLIDE DRILL F/ 9,860' - T/ 9,873' ( 13' @ 13 FPH )- GTF: 90R, WOB : 35K/50K,  
 SPM: 180,SPP: 3050, TOP DRV RPM: 0/0. GPM: 690; MUD MTR RPM: 186; TOP  
 DRV TRQ: 0/0 FT/LBS ON BTM, DIFF PSI: 150/350, MW IN 9.4+ PPG DRILLING  
 THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT

07:00 DRILLING 8 3/4" INTERM2 HOLE F/ 9,873' - T/ 10,085' (212' @ 53 FPH). WOB :  
 40K/50K, SPM: 180, TOP DRV RPM: 60. GPM: 685; MUD MTR RPM: 185; TOP  
 DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+  
 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

11:00 DRILLING 8 3/4" INTERM2 HOLE F/ 10,085' - T/ 10,198' (113' @ 56.5 FPH).  
 WOB : 40K/50K, SPM: 180, TOP DRV RPM: 60. GPM: 685; MUD MTR RPM: 185;  
 TOP DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN  
 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE  
 PIT.

13:00 SLIDE DRILL F/ 10,198' - T/ 10,205' ( 7' @ 7 FPH )- GTF: 90R, WOB : 35K/50K,  
 SPM: 180,SPP: 3050, TOP DRV RPM: 0/0. GPM: 690; MUD MTR RPM: 186; TOP  
 DRV TRQ: 0/0 FT/LBS ON BTM, DIFF PSI: 150/350, MW IN 9.4+ PPG DRILLING  
 THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT

13:30 DRILLING 8 3/4" INTERM2 HOLE F/ 10,205' - T/ 10,387' (182' @ 52 FPH). WOB  
 : 40K/50K, SPM: 180, TOP DRV RPM: 60. GPM: 685; MUD MTR RPM: 185; TOP  
 DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+  
 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

17:00 RIG SERVICE AND COM CHECK

17:30 DRILLING 8 3/4" INTERM2 HOLE F/ 10,387' - T/ 10,487' (100' @ 50 FPH). WOB  
 : 40K/50K, SPM: 180, TOP DRV RPM: 60. GPM: 685; MUD MTR RPM: 185; TOP  
 DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+  
 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

19:30 PREPARE TO TOOH

20:00 CIRCULATE & CONDITION HOLE PUMPED 2-40 BBL 60 VIS SWEEPS; 1ST  
 SWEEP 10% SCREEN COVERAGE, 2ND SWEEP 5% SCREEN COVERAGE

23:00 PUMPED OUT 2 STDs; PUMPED 20 BBL SLUG & CHASED WITH 110 STKS;  
 CLOSED ORBIT VALVE ATTEMPTED TO FORCE FILL ROTATING HEAD LEAKING  
 BADLY; WELL FLOWING @ 5/6 BBLS/MIN; TRIED TO STRIP OUT WITH  
 ANNULAR & TOOL JOINTS WAS HANGING UP ON ANNULAR WITH 200 PSI ON  
 BAG;BULLHEADED DOWN BACKSIDE 5 BBLS/MIN @ 350 PSI; WELL TOOK  
 TOTAL 130 BBLS 12.5 MUD TO KILL WELL (PUMPED 50 BBLS THEN 50 MORE  
 BBLS THEN LAST 30 BBLS WELL STATIC)

01:00 TOOH F/10,287 T/8,593; FILLING BACKSIDE W/ CALCULATED FILL.  
 WELL IS STATIC.

02:30 CHANGE OUT DIES ON ST-80

03:00 TOOH F/8,593' T/2,284' FILLING BACKSIDE W/ CALCULATED FILL.  
 WELL IS STATIC.

Vis (s/qt): 31, Dens (lb/gal): 9.40, pH: 8.5

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
9,939.0	9,934.61	1.76	0.07	-10.43	1.03	-19.24	-28.61



10,129.0	10,124.52	1.84	324.87	-4.75	0.57	-13.83	-30.36
10,318.0	10,313.45	1.28	2.74	0.12	0.60	-9.24	-32.00

## 01/02/2017

Rig Name: H&P 602

Depth = 10,767.0 Progress = 280.0

06:00 TOO H F/2,284' T/SURFACE, FILLING BACKSIDE W/ CALCULATED FILL. WELL IS STATIC.

08:00 CHECK MOTOR AND DULL GRADE BIT; MOTOR BIT BOX SQUATTED TO HOUSING AND LOWER SEAL IS OUT, WILL NOT DRAIN AND HAS 1/8 OF A ROUND SLOP IN BIT BOX WHEN TRIED TO MOVE BY HAND; BIT GRADE- 7 INNER, 8 OUTER, FULL GAUGE, BEGINNING TO RING OUT; PU NEW 9:10 LOBE, 8.0 STAGE, 1.15 ABH, 0.27 RPG WEATHERFORD MOTOR AND ULTERRA U613M PDC BIT; TEST MOTOR AND MWD, GOOD TEST;

09:30 TIH W/ BHA #4 F/ SURFACE TO 5,050'; WELL IS GIVING PROPER DISPLACEMENT.

12:00 SERVICE RIG AND TDS; FLOW CHECK WELL; BOP DRILL

12:30 TIH W/ BHA #4 F/ 5,050' T/10,288'; WELL IS GIVING PROPER DISPLACEMENT.

15:30 INSURE BACKSIDE IS FULL; FILL PIPE AND ATTEMPT TO CIRCULATE W/ NO SUCCESS; BULLHEADED 271 BBLS OF 9.4# SYSTEM MUD DOWN BACKSIDE @ 5 BBLS/MIN W/310 ANN PSI TO INDUCE FLOW; OPEN WELL TO TT AND WELL IS FLOWING @ 5 BBLS/MIN;

18:00 SAFETY WASH F/10,288'- T/10,487'; SPM: 180, TOP DRV RPM: 40. GPM: 691; SPP 3300 PSI; MUD MTR RPM: 187; TOP DRV TRQ: 12,500/15,500 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG.

18:30 DRILLING 8 3/4" INTERM2 HOLE F/ 10,487' - T/ 10,767' (280' @ 80 FPH). WOB : 35K/45K, SPM: 180, TOP DRV RPM: 65. GPM: 685; MUD MTR RPM: 185; TOP DRV TRQ: 12,500/16,500 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

22:00 CIRCULATE & CONDITION HOLE; PUMP 2- 40 BBL 60 VIS SWEEPS; 1ST SWEEP 10% SCREEN COVERAGE; 2ND SWEEP 5% SCREEN COVERAGE;

00:00 PUMP OUT 2 STDs; BULLHEADED DOWN BACKSIDE 5 BBLS/MIN @ 220 PSI; WELL TOOK TOTAL 80 BBLS 12.5 MUD TO KILL WELL;

01:00 TOO H F/10,543 T/1,500; FILLING BACKSIDE W/ CALCULATED FILL. WELL IS STATIC.

Vis (s/qt): 31, Dens (lb/gal): 9.40, pH: 9.5

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
10,413.0	10,408.43	1.57	64.46	1.33	1.56	-7.62	-30.78
10,603.0	10,598.39	0.82	77.61	1.66	0.42	-6.21	-27.10
10,698.0	10,693.38	0.22	45.14	1.70	0.68	-5.93	-26.31

## 01/03/2017

Rig Name: H&P 602

Depth = 10,935.0 Progress = 168.0

06:00 TOO H F/1,500' T/SURFACE; FILLING BACKSIDE W/ CALCULATED FILL. WELL IS STATIC; LD DC'S AND DIRECTIONAL BHA; MOTOR DRAINED GOOD, NO VISIBLE DAMAGE; BIT GRADE 1-1 FULL GAUGE, NO VISIBLE DAMAGE;

10:30 PU CURVE ASSEMBLY AS FOLLOWS BAKER 8 3/4: KYMERA KM624 BIT, WENZEL FIXED BEND 2.38 DEG, 5.5' BIT TO BEND, 4/5 LOBE, 7.0 STAGE, 0.497 RPG MOTOR; NM PONY; MULESHOE; HPTC; FLEX NMDC; 61 JTS OF 5" DP; XO SUB; 21 JTS 5" HWD; 5 " DP TO SURFACE; TEST MOTOR AND MWD, GOOD TEST.

12:30 TIH F/106'- T/5,024' W/ 8 3/4" CURVE ASSEMBLY; WELL IS GIVING PROPER DISPLACEMENT.

15:00 SERVICE RIG AND TDS; FILL PIPE; COM CHECK.

15:30 TIH F/5,024'- T/10,687' W/ 8 3/4" CURVE ASSEMBLY; WELL IS GIVING PROPER DISPLACEMENT.

19:00 INSURE BACKSIDE IS FULL; FILL PIPE AND ATTEMPT TO CIRCULATE W/ NO SUCCESS; BULLHEADED 300 BBLS OF 9.4# SYSTEM MUD DOWN BACKSIDE @ 5 BBLS/MIN W/315 ANN PSI TO INDUCE FLOW; OPEN WELL TO TT AND WELL IS FLOWING @ 5 BBLS/MIN; CIRCULATE BOTTOM UP THREW CHOKE; FLARE 5-10' F/15 MIN;

21:00 SAFETY WASH F/10,687'- T/10,767'; SPM: 120, GPM: 458; SPP 1500 PSI; MUD MTR RPM: 224;

21:30 SLD DRLG F/ 10,767' - T/ 10,807' (40' @ 16 FPH). TF HS; WOB : 20K/25K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

00:00 ROT DRLG F/ 10,807' - T/ 10,814' (7' @ 14 FPH). WOB : 15K/20K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

00:30 SLD DRLG F/ 10,814' - T/ 10,839' (25' @ 25 FPH). TF HS; WOB : 20K/25K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

01:30 ROT DRLG F/ 10,839' - T/ 10,845' (6' @ 12 FPH). WOB : 15K/20K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH

02:00 FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.  
SLD DRLG F/ 10,845' - T/ 10,870' (25' @ 25 FPH). TF HS; WOB : 20K/25K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

03:00 ROT DRLG F/ 10,870' - T/ 10,877' (7' @ 14 FPH). WOB : 15K/20K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

03:30 SLD DRLG F/ 10,877' - T/ 10,935' (58' @ 23 FPH). TF HS; WOB : 20K/25K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

Vis (s/qt): 29, Dens (lb/gal): 9.50, pH: 9.0

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
10,708.0	10,703.38	0.43	4.59	1.74	2.99	-5.88	-26.29
10,740.0	10,735.38	0.44	335.57	1.97	0.68	-5.65	-26.33
10,771.0	10,766.37	1.96	358.36	2.61	5.04	-5.01	-26.40
10,803.0	10,798.32	4.52	358.54	4.35	8.00	-3.20	-26.45
10,834.0	10,829.15	7.34	354.48	7.48	9.19	-0.01	-26.67

## 01/04/2017

Rig Name: H&P 602

Depth = 11,697.0 Progress = 762.0

06:00 ROT DRLG F/ 10,935' - T/ 10,941' (6' @ 24 FPH). WOB : 15K/20K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

06:30 SLD DRLG F/ 10,941' - T/ 10,965' (24' @ 32 FPH). TF HS; WOB : 20K/25K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

07:00 ROT DRLG F/ 10,965' - T/ 10,971' (6' @ 12 FPH). WOB : 15K/20K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

07:30 SLD DRLG F/ 10,971' - T/ 10,991' (20' @ 40 FPH). TF HS; WOB : 20K/25K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

08:00 ROT DRLG F/ 10,991' - T/ 11,004' (13' @ 26 FPH). WOB : 15K/20K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

08:30 SLD DRLG F/ 11,004' - T/ 11,031' (27' @ 54 FPH). TF HS; WOB : 20K/25K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

09:00 ROT DRLG F/ 11,031' - T/ 11,034' (3' @ 12 FPH). WOB : 15K/20K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

09:30 SLD DRLG F/ 11,034' - T/ 11,059' (25' @ 33.34 FPH). TF HS; WOB : 20K/25K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

10:00 ROT DRLG F/ 11,059' - T/ 11,066' (7' @ 14 FPH). WOB : 15K/20K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

10:30 SLD DRLG F/ 11,066' - T/ 11,091' (25' @ 50 FPH). TF HS; WOB : 20K/25K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

11:00 ROT DRLG F/ 11,091' - T/ 11,097' (6' @ 24 FPH). WOB : 15K/20K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

11:30 SLD DRLG F/ 11,097' - T/ 11,121' (24' @ 48 FPH). TF HS; WOB : 20K/25K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

12:00 ROT DRLG F/ 11,121' - T/ 11,129' (8' @ 32 FPH). WOB : 15K/20K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

12:30 SERVICE RIG AND TDS, REPAIR LOOSE WIRE IN VFD.

13:00 SLD DRLG F/ 11,129' - T/ 11,151' (22' @ 44 FPH). TF HS; WOB : 20K/25K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

13:30 ROT DRLG F/ 11,151' - T/ 11,159' (8' @ 32 FPH). WOB : 15K/20K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

14:00 SLD DRLG F/ 11,159' - T/ 11,183' (24' @ 48 FPH). TF HS; WOB : 20K/25K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

14:30 ROT DRLG F/ 11,183' - T/ 11,192' (9' @ 36 FPH). WOB : 15K/20K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

15:00 SLD DRLG F/ 11,192' - T/ 11,218' (26' @ 52 FPH). TF HS; WOB : 20K/25K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

15:30 ROT DRLG F/ 11,218' - T/ 11,224' (6' @ 24 FPH). WOB : 15K/20K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

16:00 SLD DRLG F/ 11,224' - T/ 11,246' (22' @ 44 FPH). TF HS; WOB : 20K/25K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT. @ 11,243'; BACKGROUND GAS INCREASED F/ 850 UNITS AVG. T/ 2,100 UNITS AVG. 5% FLOW INCREASE, CONTINUOUS DRILLING FLARE 3'/5'.

16:30 ROT DRLG F/ 11,246' - T/ 11,255' (9' @ 36 FPH). WOB : 15K/20K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT. CONTINUOUS DRILLING FLARE 3'/5'.

17:00 SLD DRLG F/ 11,255' - T/ 11,275' (20' @ 40 FPH). TF HS; WOB : 20K/25K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT. CONTINUOUS DRILLING FLARE 3'/5'.

17:30 ROT DRLG F/ 11,275' - T/ 11,287' (12' @ 48 FPH). WOB : 15K/20K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT. CONTINUOUS DRILLING FLARE 3'/5'.

18:00 SLD DRLG F/ 11,287' - T/ 11,305' (18' @ 36 FPH). TF 30L; WOB : 20K/25K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

18:30 ROT DRLG F/ 11,305' - T/ 11,318' (13' @ 26 FPH). WOB : 15K/20K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

19:00 SLD DRLG F/ 11,318' - T/ 11,338' (20' @ 40 FPH). TF 30L; WOB : 30K/35K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

19:30 ROT DRLG F/ 11,338' - T/ 11,350' (12' @ 24 FPH). WOB : 15K/20K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

20:00 SLD DRLG F/ 11,350' - T/ 11,407' (57' @ 57 FPH). TF 30L; WOB : 30K/35K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

21:00 ROT DRLG F/ 11,407' - T/ 11,413' (6' @ 12 FPH). WOB : 20K/30K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

21:30 SLD DRLG F/ 11,413' - T/ 11,440' (27' @ 54 FPH). TF 30L; WOB : 30K/35K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

22:00 ROT DRLG F/ 11,440' - T/ 11,445' (5' @ 10 FPH). WOB : 20K/30K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

22:30 SLD DRLG F/ 11,445' - T/ 11,468' (23' @ 46 FPH). TF 30L; WOB : 30K/35K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

23:00 ROT DRLG F/ 11,468' - T/ 11,476' (8' @ 16 FPH). WOB : 20K/30K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

23:30 SLD DRLG F/ 11,476' - T/ 11,497' (21' @ 42 FPH). TF 30L; WOB : 30K/35K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

00:00 ROT DRLG F/ 11,497' - T/ 11,508' 11' @ 22 FPH). WOB : 20K/30K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

00:30 SLD DRLG F/ 11,508' - T/ 11,526' (18' @ 36 FPH). TF 30L; WOB : 30K/35K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+

01:00 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT. ROT DRLG F/ 11,526' - T/ 11,539' 13' @ 26 FPH). WOB : 20K/30K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

01:30 SLD DRLG F/ 11,539' - T/ 11,557' (18' @ 36 FPH). TF 30L; WOB : 30K/35K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

02:00 ROT DRLG F/ 11,557' - T/ 11,581' (24' @ 48 FPH). WOB : 20K/30K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

02:30 SLD DRLG F/ 11,581' - T/ 11,598' (17' @ 34 FPH). TF 30L; WOB : 30K/35K, SPM: 130, GPM: 500; MUD MTR RPM: 245; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

03:00 ROT DRLG F/ 11,598' - T/ 11,619' (21' @ 42 FPH). WOB : 20K/30K, SPM: 130, TOP DRV RPM: 20. GPM: 500; MUD MTR RPM: 245; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT

03:30 SLD DRLG F/ 11,619' - T/ 11,634' (15' @ 30 FPH). TF 30L; WOB : 30K/35K, SPM: 130, GPM: 470; MUD MTR RPM: 230; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

04:00 ROT DRLG F/ 11,634' - T/ 11,654' (20' @ 40 FPH). WOB : 20K/30K, SPM: 130, TOP DRV RPM: 20. GPM: 470; MUD MTR RPM: 230; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT

04:30 SLD DRLG F/ 11,654' - T/ 11,681' (27' @ 54 FPH). TF 30L; WOB : 30K/35K, SPM: 130, GPM: 470; MUD MTR RPM: 230; DIFF PSI: 250/400, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT.

05:00 ROT DRLG F/ 11,681' - T/ 11,697' (TD)(16' @ 32 FPH). WOB : 20K/30K, SPM: 130, TOP DRV RPM: 20. GPM: 470; MUD MTR RPM: 230; TOP DRV TRQ: 12,000 FT/LBS ON BTM, DIFF PSI: 350/500, MW IN 9.4+ PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT

05:30 CIRCULATE & CONDITION HOLE PUMPED 1 - 40 BBLS 60 VIS SWEEPS;  
Vis (s/qt): 29, Dens (lb/gal): 9.50, pH: 9.0

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
10,866.0	10,860.75	10.77	357.81	12.39	10.84	5.01	-26.98
10,897.0	10,891.02	14.13	359.54	18.94	10.90	11.69	-27.12
10,929.0	10,921.81	17.40	359.77	27.20	10.22	20.39	-27.17
10,960.0	10,951.15	20.19	358.40	36.83	9.11	30.37	-27.34
10,992.0	10,980.97	22.37	355.28	48.14	7.67	41.96	-27.99
11,023.0	11,009.42	24.45	351.67	60.27	8.15	54.19	-29.41
11,055.0	11,038.18	27.49	349.20	74.18	10.08	68.00	-31.75
11,087.0	11,066.20	30.27	348.10	89.58	8.84	83.15	-34.80
11,118.0	11,092.66	32.55	347.29	105.69	7.48	98.93	-38.25
11,150.0	11,119.16	35.60	347.08	123.59	9.54	116.41	-42.22
11,181.0	11,143.83	38.91	347.15	142.32	10.68	134.71	-46.41
11,213.0	11,168.08	42.53	346.61	163.16	11.37	155.03	-51.15
11,244.0	11,190.38	45.45	344.68	184.67	10.36	175.88	-56.50
11,276.0	11,212.41	47.53	342.66	207.88	7.95	198.15	-63.03
11,307.0	11,232.95	49.48	342.52	231.09	6.30	220.30	-69.97
11,339.0	11,253.31	51.49	343.34	255.77	6.58	243.90	-77.22
11,371.0	11,272.72	53.83	344.95	281.21	8.33	268.38	-84.16
11,402.0	11,290.18	57.59	345.43	306.81	12.20	293.13	-90.71
11,434.0	11,306.54	60.92	344.95	334.30	10.49	319.72	-97.74
11,465.0	11,320.84	64.11	344.68	361.79	10.32	346.25	-104.94
11,497.0	11,334.02	67.25	345.05	390.94	9.87	374.40	-112.55
11,528.0	11,345.40	69.69	345.23	419.77	7.89	402.27	-119.95
11,560.0	11,356.03	71.49	344.60	449.94	5.92	431.41	-127.80
11,591.0	11,365.21	74.06	344.63	479.54	8.29	459.96	-135.66
11,623.0	11,373.20	77.03	345.16	510.52	9.42	489.87	-143.73

**01/05/2017**

Rig Name: H&P 602

Depth = 11,697.0 Progress = 0.0

06:00 CIRCULATE & CONDITION HOLE 1ST SWEEP 80% COVERAGE PUMPED 3 MORE 45 BBL, 65 VIS SWEEPS; 2ND SWEEP BACK W/ 70% SCREEN COVERAGE OF MOSTLY CUTTINGS AND SOME LARGE OVERBURDEN; 3RD SWEEP BACK W/ 50% FINE CUTTINGS, 3% OF CUTTINGS LARGE OVERBURDEN; 4TH SWEEP 5% FINE CUTTING 0% CUTTINGS LARGE OVERBURDEN, CLEAN AFTER SWEEP; WELL IS FLOWING @ 5 BBLS/MIN; PUMP 55 BBLS OF 12.6 PPG MUD CHASED WITH 123 BBLS OF SYSTEM 9.4 PPG MUD, 20 BBLS OF 12.6 PPG MUD AND 15 BBLS OF 9.4 PPG MUD TO SPOT HEAVY PILL IN CURVE AND SLUG PIPE FOR

TRIP;  
12:00 TOO H STRIPPING OUT 10 STANDS F/11,697' T/10,757' ABOVE CURVE FORCE FILLING CALCULATED FILL OF 12.6 PPG KWM DOWN BACKSIDE.  
12:30 SHUT IN WELL BY CLOSING ANNULAR; BULLHEADED 80 BBLS OF 12.6 PPG KILL MUD DOWN BACKSIDE @ 220 CASING PSI; OPENED CHOKE- WELL IS STATIC  
13:00 LDDP F/11,600' T/4,955', FILLING BACK SIDE W/ 4 BBL PER 5 STDs; (CLEANING PIN & BOX WITH PRESSURE WASHER, DOPING THREADS & INSTALLING THREAD PROTECTORS)  
20:30 PUMP CALCULATED FILL ON BACKSIDE, MONITOR WELL - STATIC. INSTALL TIW, CLOSE ANNULAR, OPEN CHOKE, LINE UP TO TRIP TANK TO MONITOR WELL.  
21:00 HELD PJSM. SLIP AND CUT 76' OF DRILL LINE.  
22:30 PULL ROTATING HEAD RUBBER. INSTALL TRIP NIPPLE. MUD LEVEL IS AT WELLHEAD. WELL STATIC  
23:30 LDDP F/4,955' T/2,354', FILLING BACK SIDE W/ CALCULATED FILL; (SEVERAL TIGHT JOINT OF DRILL PIPE)  
01:30 TIH WITH 10 STANDS OF DP FROM DERRICK. NO MUD DISPLACEMENT.  
02:00 LDDP F/ 3306' T/ DIRECTIONAL TOOLS, FILLING BACK SIDE W/ CALCULATED FILL; (SEVERAL TIGHT JOINTS OF DRILL PIPE)  
05:00 LAYING DOWN DIRECTIONAL TOOLS;  
Vis (s/qt): 30, Dens (lb/gal): 9.50, pH: 9.0

### 01/06/2017

Rig Name: H&P 602

Depth = 11,697.0 Progress = 0.0

06:00 LAY DOWN DIRECTIONAL TOOLS; BREAK & GRADE BIT 3 INNER 5 OUTER IN GAUGE;  
06:30 CLEAN AND ORGANIZE FLOOR; PULL WEAR BUSHING  
07:30 PJSM & RIG CRT TOOL & CALIBRATE EQUIPMENT  
09:00 MAKE UP 2 JT SHOE TRACK; FLOAT SHOE, 2 JTS OF 7", 32#, HCP-110 CASING; FLOAT COLLAR; ALL THREAD LOCKED AND MADE UP TO DIAMOND FOR BTC; PUMP THROUGH AND TEST FLOATS, FLOATS ARE GOOD;  
09:30 ADJUSTING BOP WITH CHAINS AND BOOMERS; COLLAR ON CASING HANGING UP ON WELL HEAD; UNABLE TO MOVE WELLHEAD ENOUGH TO CLEAR COLLAR FROM HITTING WELLHEAD;  
10:30 RUN A TOTAL OF 257 JTS OF 7", 32#, HCP-110, LTC CASING; AVG TORQUE= 8,500 FT/LBS; CASING SHOE SET @ 11,672'; FLOAT COLLAR SET @ 11,577.8'; PLACED 1 STOP COLLAR AND SOLID BODY CENTRALIZER 10' ABOVE FS; 1 STOP COLLAR AND SOLID BODY CENTRALIZER JUST BELOW FC; PLACED SOLID BODY CENTRALIZERS EVERY OTHER JOINT TO KOP; THEN BOW SPRING CENTRALIZERS EVERY 3RD JT F/KOP T/5,051'; LANDED CASING ON HANGER IN CACTUS MULTI-BOWL WELL HEAD; PU- 320K, SO- 280  
05:30 INDUCING WELL; BULLHEADING 160 BBLS WITH 9.5 ACTIVE PUMPING 5 BPM ON BACKSIDE;  
Vis (s/qt): 31, Dens (lb/gal): 9.50, pH: 8.8

### 01/07/2017

Rig Name: H&P 602

Depth = 11,697.0 Progress = 0.0

06:00 FINISH INDUCE WELL BY BULLHEADING 160 BBLS 1750 STROKES DOWN BACK SIDE; WELL IS FLOWING @ 5 BBLS/MIN; CIRCULATE 2200 STROKES 200 BBLS THROUGH CASING TO MOVE PILL UP HOLE, NO RETURNS OTHER THAN 5 BBL/MIN FLOW; PUMPED 200 BBLS THROUGH CASING WITH ANNULAR CLOSED TO PUSH HEAVY PILL AWAY; CIRCULATED 600 STROKES, FULL RETURNS ACHIEVED; LOST RETURNS WHILE CIRCULATING; PUMPED 200 MORE BBLS THROUGH CASING WITH ANNULAR CLOSED TO PUSH HEAVY PILL AWAY; NO FLOW; BULLHEADED 1750 STROKES 160 BBLS ON BACK SIDE; NO FLOW; REPEATED PUMPING LONG WAY & DOWN BACKSIDE 3 MORE TIMES BEFORE GETTING RETURNS; CIRCULATE 2 BOTTOMS UP 7,010 STKS; SOME GAS CUT MUD; (WHILE CIRCULATING 1ST BOTTOMS UP WE GAINED 100 PLUS BBLS WITH NO MUD WT CHANGE OR SIGNIFICANT AMOUNTS OF GAS)  
15:00 PJSM; RIG UP LINES TO STAND PIPE AND TEST TO 5,000 PSI. GOOD TEST; BLEED OFF PRESSURE AND PUMPED JOB AS FOLLOWS; 20 BBLS FRESH WATER SPACER; 20 BBL FRESH WATER GEL SPACER; FOLLOWED BY LEAD TUNED LIGHT CEMENT 198.5 BBLS (365 SACKS) @ 5 BBL/MIN, 10.2 PPG, 3.053 YIELD, 16.6 GAL/SK; FOLLOWED BY TAIL HALCEM H 85 BBLS (400 SACKS) @ 5 BBL/MIN, 15.6 PPG, 1.196 YIELD, 5.42 GAL/SK; SHUT IN WELL AND DROPPED NO-ROTATE WIPER PLUG; PUMPED 417 BBLS OF ACTIVE DISPLACEMENT @ 4 BBL/MIN, THEN 3 BBL/MIN FOR FINAL 30 BBLS. BUMPED PLUG ON SCHEDULE WITH 1268 PSI, PRESSURED UP TO 1768 PSI AND HELD FOR 5 MIN. BLED BACK 2 BBLS FROM LINES; FLOATS ARE HOLDING; FULL RETURNS THRU JOB; BUMPED PLUG @ 17:45 HRS 1/6/2017. (1 TO 2 FT LAZY FLARE 20 MIN) (BARREL IN & OUT DETAILS) AT 300 BBLS IN WE STARED 4 BBL IN @ 3 BBL OUT; DISPLACEMENT CAUGHT CEMENT @ 333 BBLS; THEN @ 387 BBLS WE WENT TO 3BBLS IN AND 2 BBLS OUT WHEN PLUG WAS BUMPED; SHUT IN AND SHUT IN CASING PRESSURE WAS 134;

18:00 WOC; CLEAN PITS, RIG DOWN PCV & TRASH PUMPS, CHANGE SWAB & LINERS  
IN #1 & #2 MUD PUMPS; SPOT DRYER SHAKERS AND CUTTINGS TANKS.

Vis (s/qt): 30, Dens (lb/gal): 9.50, pH: 8.5

### 01/08/2017

Rig Name: H&P 602

Depth = 11,697.0 Progress = 0.0

06:00 WOC; FINISH CHANGING LINERS & SWABS IN MUD PUMPS #1 & #2; INSTALL  
MOUSE HOLE & RIG DOWN CRT TOOL; PICK UP 4" HANDLING TOOLS;  
BUILDING STANDS OF 4" DRILL PIPE IN DERRICK; RIGGING UP FOR OBM  
THIRD PARTY EQUIPMENT (KATCH CAN); CHANGE OUT SHAKER SCREENS; FILL  
PITS WITH OBM; RIGGING UP NOV SOLID CONTROL; BUILD 60 BBLs 15 PPG  
KWM; CASING PSI @ 7:00 276; 8:00 275; 9:00 267; 10:00 255; 11:00 255;  
12:00 255;  
12:00 WOC; STRAP 4" DRILL PIPE & BUILDING STANDS OF 4" DRILL PIPE IN  
DERRICK; RIGGING UP FOR OBM THIRD PARTY EQUIPMENT (NOV); CASING  
PSI @ 1:00 256; 2:00 253; 3:00 250; 4:00 247; 5:00 246; 6:00 248;  
18:00 INSTALL DUMP LINE; EMPTY TRIP TANKS; BLEED CASING PRESSURE FROM  
250 PSI TO ZERO WITH 1 BBL GAIN. OBSERVE WELL. NO FLOW.  
19:00 CHANGE ELEVATORS TO 5"; LOAD PACK-OFF SETTING TOOLS AND TEST PLUG  
TO RIG FLOOR.  
19:30 ANNULAR PREVENTER ELEMENT WILL NOT RELAX OPEN ENOUGH TO ALLOW  
PACK-OFF TO PASS THROUGH DUE TO COLD WEATHER & HYDRAULIC FLUID  
BEING SO COLD; CYCLE ANNULAR MULTIPLE TIMES ON LANDING JT UNTIL  
OPEN ENOUGH TO ALLOW SETTING PACK-OFF. (H&P BOP TECH ON LOCATION)  
20:30 PULL AND LAY DOWN LANDING JT; PICK UP 1 JT 5" DRILL PIPE; MAKE UP  
PACK-OFF SETTING TOOL.; SET LOWER PACK-OFF AND PULL TEST TO 40K  
LBS, PRESSURE TEST PICKOFF TO 5,000 PSI - GOOD; LAY DOWN SETTING  
TOOL.  
21:30 WORK ON GETTING ANNULAR ELEMENT OPEN ENOUGH TO RUN BIT GUIDE;  
HAD TO USE TAPERED WEAR BUSHING TO FORCE ELEMENT OPEN WHILE  
CYCLING ACCUMULATOR PSI DUE TO COLD WEATHER; (H&P BOP TECH ON  
LOCATION)  
00:30 INSTALL BIT GUIDE AND TIGHTEN SET SCREWS TO COMPLETE PACK OFF  
ASSEMBLY;  
02:00 CHANGE VARIABLE RAMS F/5.5 X 7 T/ 3.5 X 5 VBR; CHANGE DOOR GASKETS;  
03:30 CHANGE OUT FLOOR TOOLS AND ELEVATORS TO 4". RU AND SET TEST PLUG  
04:30 TEST BOP; RAMS & CHOKE 10,000 HIGH 250 LOW 10 MIN; ANNULAR 5000  
HIGH 250 LOW 10 MIN; i(TEST GOOD)  
Vis (s/qt): 29, Dens (lb/gal): 9.40, pH: 8.5

### 01/09/2017

Rig Name: H&P 602

Depth = 11,697.0 Progress = 0.0

06:00 TEST BOP BLIND RAMS 10,000 HIGH 250 LOW F/10 MIN; (TEST GOOD)  
07:00 INSTALL WEAR BUSHING & CHANGE SAVER SUB ON TOP DRIVE; REMOVE  
CORROSION RING; BUILD 4" ROTATING HEAD RUBBER; CLEAN FLOOR;  
REMOVE ALL 5" TOOLS FROM FLOOR; PREPARE FLOOR TO PICK UP BHA & TIH;  
11:00 PICK UP HALLIBURTON 6" MM53D BIT WITH 4" GAUGE JETTED W/ 5-12'S  
(TFA-.552); WEATHERFORD HYPERLINE 250 4.75 MOTOR QME 5683 (5/6 LOBE  
8.3 STAGE) 1.5 BEND (.96 RPG);TEST MOTOR & MWD; PICK UP 2-PONY  
NMDC;HEL TOOL; FLEX NMDC;  
13:30 TIH ; 60 JOINT DP; X-O; AGITATOR; X-O; 1 JT DRILL PIPE TEST AGITATOR  
(TEST GOOD) @ 60 SPM 700 PSI BEFORE 900 PSI AFTER PICK UP (200 PSI  
PRESSURE DROP)(STRAPPING 60 JTS DRILL PIPE ON RACK). DRIFT DP WHILE  
PICKING IT UP. FILL EVERY 30 STANDS.  
16:00 TIH 90 JOINTS DP @ 5454'. DRIFT DP WHILE PICKING IT UP. FILL EVERY 30  
STANDS.  
18:00 DOWN DUE TO CABLE ON OPERATING VALVE ON ST-80 BROKE; NO SPARE;  
PARTS BEING DELIVERED OUT OF ODESSA;  
19:30 LUBRICATE RIG  
20:00 TIH PICKING UP 120 JOINTS DP @ 9157'. DRIFT DP WHILE PICKING IT UP.  
01:00 TIH PICKING UP 57 JTS 4" HWDP @ 10,892'. DRIFT PIPE WHILE PICKING IT  
UP. THREE JOINTS WOULD NOT DRIFT. FILL PIPE.  
04:00 TIH PICKING UP 20 JTS DP'. TAGGED CEMENT @ 11,486'. DRIFT PIPE WHILE  
PICKING IT UP. INSTALL ROTATING HEAD.  
05:00 CIRCULATE & CONDITION MUD ONE FULL CIRCULATION AT 240 GPM UNTIL  
CONSISTENT MUD WT OF 9.5 PPG. MOVE PIPE SLOWLY WHILE CIRCULATING.  
Vis (s/qt): 30, Dens (lb/gal): 9.40, pH: 8.5

### 01/10/2017

Rig Name: H&P 602

Depth = 12,662.0 Progress = 965.0

06:00 FINISH CIRCULATING & CONDITIONING HOLE  
06:30 TEST CASING @ TARGET PSI OF 4,800 PSI; PUMPED @ 3 STKS/MIN F/ 0 PSI T/  
2,000 PSI; TOTAL OF 31 STKS (1.9685 BBLs); MONITORED FOR 5 MINUTES,  
NO LEAK OFF: PUMPED 3 STKS (0.1905 BBLs/3 STKS) TOTAL OF 2.0955 BBLs

W/ 2,182 PSI; 3 STKS, 2.286 BBLS W/ 2,374 PSI; 3 STKS, 2.4765 BBLS W/ 2,605 PSI; 3 STKS, 2.7305 BBLS W/ 2,795 PSI; 3 STKS, 2.921 BBLS W/ 2,985 PSI; 3 STKS, 3.1115 BBLS W/ 3,216 PSI; 3 STKS, 3.302 BBLS W/ 3,396 PSI; 3 STKS, 3.4925 BBLS W/ 3,609 PSI; 3 STKS, 3.683 BBLS W/ 3,786 PSI; 3 STKS, 3.8735 BBLS W/ 4,015 PSI; 3 STKS, 4.064 BBLS W/ 4,196 PSI; 3 STKS, 4.191 BBLS W/ 4,373 PSI; 3 STKS, 4.445 BBLS W/ 4,582 PSI; 3 STKS, 4.6355 BBLS W/ 4,779 PSI; 3 STKS, 4.699 BBLS W/ 4,856 PSI; HELD PRESSURE FOR 30 MINUTES RECORDING PSI EVERY 5 MIN; 16 PSI LEAK OFF AFTER 30 MINUTES; GOOD TEST.

08:30 DRLG CEMENT & FLOAT EQUIPMENT; F/11,458' T/11,697'; TAGGED FLOAT COLLAR @ 11,577;

09:00 ROT DRLG F/ 11,697' - T/ 11,707' (10' @ 20 FPH). WOB : 10K/20K, SPM:70, TOP DRV RPM: 30. GPM: 188; MUD MTR RPM: 180; TOP DRV TRQ: 8,000 FT/LBS ON BTM, DIFF PSI: 600/650, MW IN 9.4 PPG DRILLING THROUGH FLOWLINE. CIRCULATING OUTSIDE RESERVE PIT

09:30 CIRCULATE BOTTOMS UP/MUD WT 9.4 IN/OUT

10:30 FIT TEST @ TARGET PSI OF 4,795 PSI; PUMPED @ 3 STKS/MIN F/ 0 PSI T/ 2,000 PSI; TOTAL OF 48 STKS (3.048 BBLS); MONITORED FOR 5 MINUTES, NO LEAK OFF; PUMPED 3 STKS (0.1905 BBLS/3 STKS) TOTAL OF 3.2385 BBLS W/ 2,051 PSI; 3 STKS, 3.429 BBLS W/ 2,149 PSI; 3 STKS, 3.6195 BBLS W/ 2,266 PSI; 3 STKS, 3.81 BBLS W/ 2,361 PSI; 3 STKS, 4.0005 BBLS W/ 2,463 PSI; 3 STKS, 4.191 BBLS W/ 2,550 PSI; 3 STKS, 4.3815 BBLS W/ 2,663 PSI; 3 STKS, 4.572 BBLS W/ 2,757 PSI; 3 STKS, 4.7625 BBLS W/ 2848 PSI; 3 STKS, 4.953 BBLS W/ 2955 PSI; 3 STKS, 5.1435 BBLS W/ 3,052 PSI; 3 STKS, 5.334 BBLS W/ 3,140 PSI; 3 STKS, 5.5245 BBLS W/ 3227 PSI; 3 STKS, 5.715 BBLS W/ 3311 PSI; 3 STKS, 5.9055 BBLS W/ 3376 PSI; 3 STKS, 6.096 BBLS W/ 3439 PSI; 3 STKS, 6.2865 BBLS W/ 3503 PSI; 3 STKS, 6.477 BBLS W/ 3583 PSI; 3 STKS, 6.6675 BBLS W/ 3,650 PSI; ; 3 STKS, 6.858 BBLS W/ 3705 PSI; 3 STKS, 7.0485 BBLS W/ 3785 PSI; 3 STKS, 7.239 BBLS W/ 3850 PSI; 3 STKS, 7.4295 BBLS W/ 3924 PSI; 3 STKS, 7.62 BBLS W/ 3982 PSI; 3 STKS, 7.8105 BBLS W/ 4052 PSI; 3 STKS, 8.001 BBLS W/ 4138 PSI; ; 3 STKS, 8.1915 BBLS W/ 4190 PSI; 3 STKS, 8.382 BBLS W/ 4284 PSI; 3 STKS, 8.5725 BBLS W/ 4322 PSI; 3 STKS, 8.763 BBLS W/ 4372 PSI; 3 STKS, 8.9535 BBLS W/ 4428 PSI; 3 STKS, 9.144 BBLS W/ 4472 PSI; 3 STKS, 9.3345 BBLS W/ 4488 PSI; ; 3 STKS, 9.444 BBLS W/ 4534 PSI; 3 STKS, 9.5535 BBLS W/ 4533 PSI; PRESSURE DROP F/4525 T/4485 FOR 10 MINUTES RECORDING PSI EVERY 2 MIN; 2 MIN 4521 - 4 MIN 4515 - 6 MIN 4507 - 8 MIN 4496 - 10 MIN 4485

12:30 DISPLACE ACTIVE WITH OBM; GPM 240; RPM 20; 3900 PSI

14:30 CIRCULATE BOTTOMS UP & CONDITION OBM; GPM 240; RPM 20; 3900 PSI; FILL CHOKE MANIFOLD & SEPARATOR W/OBM;

16:30 SLD DRLG F/ 11,707' - T/ 11,746' (39' @ 26 FPH). TF HS; WOB : 20K/25K, SPM: 89, GPM: 250; MUD MTR RPM: 240; DIFF PSI: 350/450, PU 220 SO 189 ROT 204

18:00 ROT DRLG F/ 11,746' - T/ 11,808' (62' @ 62 FPH). WOB : 18K/20K, SPM: 99, TOP DRV RPM: 50. GPM: 263; MUD MTR RPM: 252; TOP DRV TRQ: 8,000 FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 800/900, PU 220 SO 185 ROT 205

19:00 SLD DRLG F/ 11,808' - T/ 11,834' (26' @ 26 FPH). TF HS; WOB : 8K/10K, SPM: 99, GPM: 263; MUD MTR RPM: 252; DIFF PSI: 250/300, MW IN/OUT: 12.5 PPG/12.3+ PPG, PU 220 SO 185 ROT 205

20:00 ROT DRLG F/ 11,834' - T/ 11,842' (EOC) (8' @ 16 FPH). WOB : 18K/20K, SPM: 99, TOP DRV RPM: 50. GPM: 263; MUD MTR RPM: 252; TOP DRV TRQ: 8,000 FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 800/900, PU 220 SO 185 ROT 205 LANDED CURVE AT 11,842' MD/11392.70' TVD SURVEY @ 11,842' MD, INC: 90.68 DEG, AZ: 345.87

20:30 ROT DRLG F/ 11,842' - T/ 11,905' (63' @ 126 FPH). WOB : 18K/20K, SPM: 99, TOP DRV RPM: 50. GPM: 263; MUD MTR RPM: 252; TOP DRV TRQ: 8,000 FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 800/900, PU 220 SO 185 ROT 205 LANDED CURVE AT 11,842' MD/11392.70' TVD SURVEY @ 11,842' MD, INC: 90.68 DEG, AZ: 345.87

21:00 SLD DRLG F/ 11,905' - T/ 11,936' (31' @ 31 FPH). TF 240L; WOB : 8K/10K, SPM: 99, GPM: 263; MUD MTR RPM: 252; DIFF PSI: 250/300, MW IN/OUT: 12.5 PPG/12.3 PPG, PU 220 SO 185 ROT 205

22:00 ROT DRLG F/ 11,936' - T/ 12,030' (94' @ 188 FPH). WOB : 18K/20K, SPM: 99, TOP DRV RPM: 80. GPM: 263; MUD MTR RPM: 252; TOP DRV TRQ: 8,000 FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 800/900, PU 220 SO 182 ROT 200

22:30 SLD DRLG F/ 12,030' - T/ 12,052' (22' @ 44 FPH). TF 50R; WOB : 8K/10K, SPM: 99, GPM: 263; MUD MTR RPM: 252; DIFF PSI: 250/300, MW IN/OUT: 12.5 PPG/12.5 PPG, PU 220 SO 182 ROT 200

23:00 ROT DRLG F/ 12,052' - T/ 12,315' (263' @ 105 FPH). WOB : 18K/20K, SPM: 99, TOP DRV RPM: 90. GPM: 263; MUD MTR RPM: 252; TOP DRV TRQ: 6,500 FT/LBS ON BTM, 4,000 OFF BTM; DIFF PSI: 600/900, PU 220 SO 182 ROT 200

01:30 SLD DRLG F/ 12,315' - T/ 12,336' (21' @ 42 FPH). TF 120R; WOB : 8K/10K, SPM: 99, GPM: 263; MUD MTR RPM: 252; DIFF PSI: 250/300, MW IN/OUT: 12.5 PPG/12.4 PPG, PU 222 SO 182 ROT 200

02:00 ROT DRLG F/ 12,336' - T/ 12,410' (74' @ 148 FPH). WOB : 18K/20K, SPM: 99, TOP DRV RPM: 80-90. GPM: 263; MUD MTR RPM: 252; TOP DRV TRQ: 6,500

02:30 FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 600/900, PU 222 SO 182 ROT 200  
SLD DRLG F/ 12,410' - T/ 12,443' (33' @ 66 FPH). TF 140R; WOB : 8K/10K,  
SPM: 99, GPM: 263; MUD MTR RPM: 252; DIFF PSI: 250/300, MW IN/OUT:  
12.5 PPG/12.5 PPG, PU 222 SO 182 ROT 200

03:00 ROT DRLG F/ 12,443' - T/ 12,599' (156' @ 104 FPH). WOB : 12K/18K, SPM:  
99, TOP DRV RPM: 100. GPM: 263; MUD MTR RPM: 252; TOP DRV TRQ: 8,000  
FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 600/900, PU 222 SO 178 ROT 200

04:30 SLD DRLG F/ 12,599' - T/ 12,625' (26' @ 26 FPH). TF 40R; WOB : 8K/10K,  
SPM: 99, GPM: 263; MUD MTR RPM: 252; DIFF PSI: 250/300, MW IN/OUT:  
12.5 PPG/12.5 PPG, PU 222 SO 182 ROT 200

05:30 ROT DRLG F/ 12,625' - T/ 12,662' (37' @ 74 FPH). WOB : 12K/18K, SPM: 99,  
TOP DRV RPM: 80. GPM: 263; MUD MTR RPM: 252; TOP DRV TRQ: 8,000  
FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 600/800, PU 222 SO 178 ROT 200

Vis (s/qt): 65, Dens (lb/gal): 12.50, pH: 0.0

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
11,716.0	11,387.81	84.87	346.24	602.23	8.51	578.80	-166.39
11,747.0	11,389.94	87.28	346.03	633.13	7.80	608.82	-173.80
11,779.0	11,391.38	87.53	346.32	665.07	1.20	639.86	-181.44
11,811.0	11,392.52	88.40	346.22	697.01	2.74	670.93	-189.03
11,842.0	11,392.77	90.68	345.87	727.98	7.44	701.01	-196.50
11,874.0	11,392.36	90.80	346.16	759.95	0.98	732.06	-204.23
11,968.0	11,393.57	87.72	340.40	853.89	6.95	822.03	-231.26
12,063.0	11,394.80	90.80	344.00	948.83	4.99	912.45	-260.29
12,158.0	11,393.57	90.68	341.97	1,043.81	2.14	1,003.27	-288.08
12,253.0	11,392.04	91.17	339.69	1,138.67	2.45	1,092.99	-319.27
12,348.0	11,389.18	92.28	342.05	1,233.50	2.74	1,182.70	-350.39
12,443.0	11,388.82	88.15	342.20	1,328.45	4.35	1,273.09	-379.54
12,537.0	11,393.07	86.67	342.23	1,422.32	1.57	1,362.50	-408.22

**01/11/2017**

Rig Name: H&P 602

Depth = 14,401.0 Progress = 1739.0

06:00 ROT DRLG F/ 12,662' - T/ 12,789' (127' @ 63.5 FPH). WOB : 14K, SPM: 104,  
TOP DRV RPM: 80. GPM: 277; MUD MTR RPM: 266; TOP DRV TRQ: 8,000  
FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 600/1000, PU 230 SO 170 ROT 200

08:00 SLD DRLG F/ 12,789' - T/ 12,830' (41' @ 41 FPH). TF HS; WOB : 8K/10K, SPM:  
104, GPM: 266; MUD MTR RPM: 266; DIFF PSI: 300/400, MW IN/OUT: 12.5  
PPG/12.5 PPG, PU 230 SO 170 ROT 200

09:00 ROT DRLG F/ 12,830' - T/ 12,883' (53' @ 53 FPH). WOB : 14/18K, SPM: 104,  
TOP DRV RPM: 70-90. GPM: 277; MUD MTR RPM: 266; TOP DRV TRQ: 8,000  
FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 600/1000, PU 230 SO 170 ROT 200

10:00 SLD DRLG F/ 12,883' - T/ 12,901' (18' @ 18 FPH). TF 188; WOB : 8K/10K,  
SPM: 104, GPM: 266; MUD MTR RPM: 266; DIFF PSI: 300/400, MW IN/OUT:  
12.5 PPG/12.5 PPG, PU 230 SO 170 ROT 200

11:00 ROT DRLG F/ 12,901' - T/ 13,073' (172' @ 115 FPH). WOB : 10/14K, SPM: 104,  
TOP DRV RPM: 80-90. GPM: 277; MUD MTR RPM: 266; TOP DRV TRQ: 8,000  
FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 600/1000, PU 230 SO 170 ROT 200

12:30 SLD DRLG F/ 13,073' - T/ 13,093' (20' @ 20 FPH). TF HS; WOB : 8K/10K, SPM:  
104, GPM: 266; MUD MTR RPM: 266; DIFF PSI: 300/400, MW IN/OUT: 12.5  
PPG/12.5 PPG, PU 230 SO 170 ROT 200

13:30 ROT DRLG F/ 13,093' - T/ 13,357' (264' @ 132 FPH). WOB : 10/14K, SPM: 104,  
TOP DRV RPM: 80-90. GPM: 277; MUD MTR RPM: 266; TOP DRV TRQ: 8,000  
FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 600/1000, PU 230 SO 170 ROT 200

15:30 SERVICE RIG

16:00 ROT DRLG F/ 13,357' - T/ 13,547' (190' @ 190 FPH). WOB : 15/20K, SPM: 104,  
TOP DRV RPM: 80-90. GPM: 277; MUD MTR RPM: 266; TOP DRV TRQ: 8,000  
FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 600/1000, PU 230 SO 170 ROT 200

17:00 SLD DRLG F/ 13,547' - T/ 13,567' (20' @ 40 FPH). TF 240L; WOB : 8K/10K,  
SPM: 104, GPM: 295; MUD MTR RPM: 283; DIFF PSI: 300/400, MW IN/OUT:  
12.5 PPG/12.5 PPG, PU 230 SO 170 ROT 200

17:30 ROT DRLG F/ 13,567' - T/ 13,642' (75' @ 150 FPH). WOB : 15/20K, SPM: 104,  
TOP DRV RPM: 80-90. GPM: 277; MUD MTR RPM: 266; TOP DRV TRQ: 8,000  
FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 800/1000, PU 230 SO 170 ROT 198

18:00 SLD DRLG F/ 13,642' - T/ 13,667' (25' @ 50 FPH). TF 240L; WOB : 10K/12K,  
SPM: 104, GPM: 274; MUD MTR RPM: 263; DIFF PSI: 350/400, MW IN/OUT:  
12.5 PPG/12.5 PPG, PU 230 SO 170 ROT 200

18:30 ROT DRLG F/ 13,667' - T/ 13,737' (70' @ 70 FPH). WOB : 10/14K, SPM: 104,  
TOP DRV RPM: 100. GPM: 277; MUD MTR RPM: 266; TOP DRV TRQ: 7-10K  
FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 500/1000, PU 232 SO 167 ROT  
194, (OUT OF TARGET WINDOW 10.4' ABOVE LINE, 25.2' RIGHT OF LINE)  
ERRATIC TORQUE AND PRESSURE SPIKES AFFECTING ROP.

19:30 SLD DRLG F/ 13,737' - T/ 13,771' (34' @ 34 FPH). TF 260L; WOB : 10K/12K,  
SPM: 104, GPM: 274; MUD MTR RPM: 263; DIFF PSI: 350/400, MW IN/OUT:  
12.5 PPG/12.5 PPG, PU 232 SO 167 ROT 194

20:30 ROT DRLG F/ 13,771' - T/ 13,801' (30' @ 30 FPH). WOB : 10/14K, SPM: 104,



TOP DRV RPM: 90. GPM: 280; MUD MTR RPM: 268; TOP DRV TRQ: 7K FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 800/900, PU 232 SO 167 ROT 194. TAKE CHECK SHOT - BUILT 2.4 DEGREES INCLINATION ON 70' OF ROTATION ON PRIOR STAND; DISCUSS PLAN FORWARD TO CORRECT HOLE DIRECTION WITH PROJECT MANAGER AND DIRECTIONAL COORDINATOR.

21:30 SLD DRLG F/ 13,801' - T/ 13,816 (15' @ 30 FPH). TF 260L; WOB : 10K/12K, SPM: 104, GPM: 274; MUD MTR RPM: 263; DIFF PSI: 350/400, MW IN/OUT: 12.5 PPG/12.5 PPG, PU 232 SO 167 ROT 194

22:00 ROT DRLG F/ 13,816' - T/ 13,832' (16' @ 64 FPH). WOB : 10/14K, SPM: 104, TOP DRV RPM: 90. GPM: 280; MUD MTR RPM: 268; TOP DRV TRQ: 7K FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 800/900, PU 232 SO 167 ROT 194

22:15 SLD DRLG F/ 13,832' - T/ 13,847 (15' @ 60 FPH). TF 260L; WOB : 10K/12K, SPM: 104, GPM: 274; MUD MTR RPM: 263; DIFF PSI: 350/400, MW IN/OUT: 12.5 PPG/12.5 PPG, PU 232 SO 167 ROT 194

22:45 ROT DRLG F/ 13,847' - T/ 13,865' (18' @ 72 FPH). WOB : 10/12K, SPM: 104, TOP DRV RPM: 90. GPM: 277; MUD MTR RPM: 266; TOP DRV TRQ: 7K FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 800/900, PU 232 SO 167 ROT 194

23:00 SLD DRLG F/ 13,865' - T/ 13,883' (18' @ 72 FPH). TF 260L; WOB : 10K/12K, SPM: 104, GPM: 277; MUD MTR RPM: 266; DIFF PSI: 350/400, MW IN/OUT: 12.5 PPG/12.5 PPG, PU 232 SO 167 ROT 194

23:30 ROT DRLG F/ 13,883' - T/ 13,897' (14' @ 56 FPH). WOB : 10/12K, SPM: 104, TOP DRV RPM: 90. GPM: 277; MUD MTR RPM: 266; TOP DRV TRQ: 7K FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 800/900, PU 242 SO 155 ROT 194

23:45 SLD DRLG F/ 13,897' - T/ 13,920' (23' @ 72 FPH). TF 260L; WOB : 10K/12K, SPM: 104, GPM: 277; MUD MTR RPM: 266; DIFF PSI: 350/400, MW IN/OUT: 12.5 PPG/12.5 PPG, PU 242 SO 155 ROT 194

00:00 ROT DRLG F/ 13,920' - T/ 14,117' (197' @ 79 FPH). WOB : 8/10K, SPM: 104, TOP DRV RPM: 90. GPM: 277; MUD MTR RPM: 266; TOP DRV TRQ: 8.5K FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 700/900, PU 242 SO 152 ROT 194

02:30 SLD DRLG F/ 14,117' - T/ 14,142' (25' @ 72 FPH). TF 140R; WOB : 10K/12K, SPM: 104, GPM: 277; MUD MTR RPM: 266; DIFF PSI: 350/400, MW IN/OUT: 12.5 PPG/12.5 PPG, PU 242 SO 152 ROT 194

03:00 ROT DRLG F/ 14,142' - T/ 14,306' (164' @ 109 FPH). WOB : 8/10K, SPM: 104, TOP DRV RPM: 100. GPM: 277; MUD MTR RPM: 266; TOP DRV TRQ: 8.5K FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 700/900, PU 242 SO 152 ROT 194

04:30 SLD DRLG F/ 14,306' - T/ 14,338' (32' @ 32 FPH). TF 140R; WOB : 10K/12K, SPM: 113, GPM: 300; MUD MTR RPM: 288; DIFF PSI: 350/400, MW IN/OUT: 12.5 PPG/12.5 PPG, PU 242 SO 152 ROT 194

05:30 ROT DRLG F/ 14,338' - T/ 14,401' (63' @ 126 FPH). WOB : 8/10K, SPM: 113, TOP DRV RPM: 100. GPM: 300; MUD MTR RPM: 288; TOP DRV TRQ: 8.0K FT/LBS ON BTM, 3,000 OFF BTM; DIFF PSI: 600/700, PU 242 SO 152 ROT 194

Vis (s/qt): 62, Dens (lb/gal): 12.50, pH: 0.0

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
12,632.0	11,397.11	88.46	343.61	1,517.22	2.38	1,453.23	-436.10
12,727.0	11,400.79	87.09	343.42	1,612.14	1.46	1,544.25	-463.04
12,821.0	11,400.29	93.52	345.56	1,706.08	7.21	1,634.77	-488.16
12,916.0	11,397.28	90.12	345.02	1,800.98	3.62	1,726.60	-512.26
13,011.0	11,398.00	89.01	344.84	1,895.95	1.18	1,818.33	-536.96
13,106.0	11,397.95	91.05	343.89	1,990.94	2.37	1,909.81	-562.57
13,201.0	11,395.32	92.12	344.12	2,085.90	1.15	2,001.09	-588.73
13,296.0	11,393.36	90.25	344.45	2,180.87	2.00	2,092.52	-614.46
13,390.0	11,391.43	92.10	345.76	2,274.81	2.41	2,183.33	-638.61
13,485.0	11,387.90	92.16	347.71	2,369.61	2.05	2,275.73	-660.39
13,580.0	11,383.96	92.59	348.11	2,464.27	0.62	2,368.54	-680.28
13,675.0	11,381.35	90.56	349.01	2,558.89	2.34	2,461.62	-699.11
13,770.0	11,380.11	90.93	346.64	2,653.62	2.52	2,554.46	-719.14
13,865.0	11,379.04	90.37	344.14	2,748.57	2.70	2,646.38	-743.10
13,960.0	11,379.96	88.52	340.60	2,843.52	4.20	2,736.90	-771.87
14,055.0	11,381.08	90.12	339.81	2,938.33	1.88	2,826.27	-804.03
14,149.0	11,381.29	89.63	340.84	3,032.17	1.21	2,914.78	-835.68
14,244.0	11,380.58	91.23	340.38	3,127.03	1.75	3,004.39	-867.22

**01/12/2017**

Rig Name: H&P 602

Depth = 15,755.0 Progress = 1354.0

06:00 SLD DRLG F/ 14,401' - T/ 14,431' (30' @ 32 FPH). TF 150R; WOB : 20K, SPM: 113, GPM: 300; MUD MTR RPM: 288; DIFF PSI: 250, MW IN/OUT: 12.5 PPG/12.5 PPG, PU 240 SO 1140 ROT 189

07:30 ROT DRLG F/ 14,431' - T/ 14,496' (65' @ 130 FPH). WOB : 11K, SPM: 113, TOP DRV RPM: 100. GPM: 300; PRESS OFF B: 6000; MUD MTR RPM: 288; TOP DRV TRQ: 9.0K FT/LBS ON BTM, 5K OFF BTM; DIFF PSI: 750, PU 240 SO 149 ROT 189

08:00 SLD DRLG F/ 14,496' - T/ 14,537' (41' @ 21 FPH). TF 180; WOB : 20K, SPM: 104; PRESS OFF B: 4800; GPM: 277; MUD MTR RPM: 266; DIFF PSI: 250, MW

IN/OUT: 12.5 PPG/12.5 PPG, PU 240 SO 140 ROT 189

10:00 ROT DRLG F/ 14,537' - T/ 14,778' (241' @ 60 FPH). WOB : 11K, SPM: 113, TOP DRV RPM: 100. GPM: 300; PRESS OFF B: 6100; MUD MTR RPM: 288; TOP DRV TRQ: 8.0K FT/LBS ON BTM, 5K OFF BTM; DIFF PSI: 750, PU 238 SO 149 ROT 190

14:00 ROT DRLG F/ 14,778' - T/ 14,970' (192' @ 77 FPH). WOB : 10K/12k, SPM: 113, TOP DRV RPM: 100. GPM: 300; PRESS OFF B: 6100; MUD MTR RPM: 288; TOP DRV TRQ: 8.0K FT/LBS ON BTM, 4K OFF BTM; DIFF PSI: 400/600, PU 238 SO 149 ROT 190

16:30 LUBRICATE RIG

17:00 ROT DRLG F/ 14,970' - T/ 15,255' (285' @ 81.43 FPH). WOB : 10K/12k, SPM: 113, TOP DRV RPM: 100. GPM: 300; PRESS OFF B: 6100; MUD MTR RPM: 288; TOP DRV TRQ: 8.0K FT/LBS ON BTM, 4K OFF BTM; DIFF PSI: 400/600, PU 241 SO 130 ROT 184

20:30 SLD DRLG F/ 15,255' - T/ 15,290' (35' @ 23.34 FPH). TF 280L; WOB : 20K, SPM: 104; PRESS OFF B: 4800; GPM: 277; MUD MTR RPM: 266; DIFF PSI: 195, MW IN/OUT: 12.5 PPG/12.5 PPG, PU 240 SO 165 ROT 189

22:00 ROT DRLG F/ 15,290' - T/ 15,493' (203' @ 67.67 FPH). WOB : 10K/12k, SPM: 113, TOP DRV RPM: 100. GPM: 300; PRESS OFF B: 6100; MUD MTR RPM: 288; TOP DRV TRQ: 8.0K FT/LBS ON BTM, 4K OFF BTM; DIFF PSI: 400/600, PU 241 SO 115 ROT 186

01:00 SLD DRLG F/ 15,493' - T/ 15,518' (25' @ 50 FPH). TF 270L; WOB : 20K, SPM: 104; PRESS OFF B: 4800; GPM: 277; MUD MTR RPM: 266; DIFF PSI: 195, MW IN/OUT: 12.5 PPG/12.5 PPG, PU 240 SO 165 ROT 189

01:30 ROT DRLG F/ 15,518' - T/ 15,633' (115' @ 57.5 FPH). WOB : 10K/12k, SPM: 113, TOP DRV RPM: 100. GPM: 300; PRESS OFF B: 6100; MUD MTR RPM: 288; TOP DRV TRQ: 8.0K FT/LBS ON BTM, 4K OFF BTM; DIFF PSI: 400/600, PU 241 SO 115 ROT 186

03:30 SLD DRLG F/ 15,633' - T/ 15,649' (16' @ 32 FPH). TF 270L; WOB : 20K, SPM: 104; PRESS OFF B: 4800; GPM: 277; MUD MTR RPM: 266; DIFF PSI: 195, MW IN/OUT: 12.5 PPG/12.5 PPG, PU 240 SO 165 ROT 189

04:00 ROT DRLG F/ 15,649' - T/ 15,730' (81' @ 54 FPH). WOB : 10K/12k, SPM: 113, TOP DRV RPM: 100. GPM: 300; PRESS OFF B: 6100; MUD MTR RPM: 288; TOP DRV TRQ: 8.0K FT/LBS ON BTM, 4K OFF BTM; DIFF PSI: 400/600, PU 241 SO 115 ROT 186

05:30 SLD DRLG F/ 15,730' - T/ 15,755' (25' @ 50 FPH). TF 230L; WOB : 20K, SPM: 104; PRESS OFF B: 4800; GPM: 277; MUD MTR RPM: 266; DIFF PSI: 195, MW IN/OUT: 12.5 PPG/12.5 PPG, PU 240 SO 165 ROT 189

Vis (s/qt): 60, Dens (lb/gal): 12.50, pH: 0.0

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
14,339.0	11,378.89	90.80	340.74	3,221.87	0.59	3,093.96	-898.83
14,434.0	11,377.62	90.74	342.18	3,316.79	1.52	3,184.02	-929.04
14,529.0	11,378.28	88.46	343.66	3,411.77	2.86	3,274.82	-956.93
14,624.0	11,379.35	90.25	344.94	3,506.75	2.32	3,366.26	-982.64
14,718.0	11,379.24	89.88	344.48	3,600.73	0.63	3,456.93	-1,007.43
14,813.0	11,378.98	90.44	344.65	3,695.72	0.62	3,548.51	-1,032.71
14,908.0	11,378.31	90.37	345.25	3,790.70	0.64	3,640.24	-1,057.38
15,003.0	11,378.45	89.45	345.55	3,885.65	1.02	3,732.18	-1,081.32
15,098.0	11,379.22	89.63	345.80	3,980.59	0.32	3,824.22	-1,104.83
15,193.0	11,379.73	89.75	347.12	4,075.48	1.40	3,916.57	-1,127.07
15,288.0	11,379.28	90.79	344.83	4,170.39	2.65	4,008.73	-1,150.09
15,383.0	11,378.11	90.62	344.46	4,265.37	0.43	4,100.34	-1,175.24
15,478.0	11,376.95	90.79	346.06	4,360.33	1.69	4,192.20	-1,199.41
15,572.0	11,375.64	90.80	343.26	4,454.29	2.98	4,282.83	-1,224.27
15,668.0	11,373.78	91.42	343.68	4,550.27	0.78	4,374.85	-1,251.58

## 01/13/2017

Rig Name: H&P 602

Depth = 15,945.0 Progress = 190.0

06:00 SLD DRLG F/ 15,755' - T/ 15,757' (2' @ 2 FPH). TF 230L; WOB : 10K, SPM: 113; PRESS OFF B: 6300; GPM: 300; MUD MTR RPM: 288; DIFF PSI: 195, MW IN/OUT: 12.5 PPG/12.5 PPG, PU 240 SO 115 ROT 184

07:00 ROT DRLG F/ 15,757' - T/ 15,823' (66' @ 66 FPH). WOB : 10K/12k, SPM: 113, TOP DRV RPM: 100. GPM: 300; PRESS OFF B: 6300; MUD MTR RPM: 288; TOP DRV TRQ: 8.0K FT/LBS ON BTM, 4K OFF BTM; DIFF PSI: 400/600, PU 238 SO 120 ROT 184

08:00 SLD DRLG F/ 15,823' - T/ 15,861' (38' @ 38 FPH). TF 260L; WOB : 10K, SPM: 113; PRESS OFF B: 6300; GPM: 300; MUD MTR RPM: 288; DIFF PSI: 195, MW IN/OUT: 12.5 PPG/12.5 PPG, PU 240 SO 115 ROT 184

10:00 ROT DRLG F/ 15,861' - T/ 15,939' (78' @ 79 FPH). WOB : 10K/12k, SPM: 113, TOP DRV RPM: 100. GPM: 300; PRESS OFF B: 6300; MUD MTR RPM: 288; TOP DRV TRQ: 8.0K FT/LBS ON BTM, 4K OFF BTM; DIFF PSI: 400/600, PU 235 SO 118 ROT 189.

11:00 ROT DRLG F/ 15,939' - T/ 15,945' (6' @ 12 FPH). WOB : 6K/15k, SPM: 113,

TOP DRV RPM: 100. GPM: 300; PRESS OFF B: 6300; MUD MTR RPM: 288; TOP DRV TRQ: 8.0K FT/LBS ON BTM, 4K OFF BTM; DIFF PSI: 400/600, PU 235 SO 118 ROT 189. ROP QUICKLY DROPPED FROM 120 TO 15 FT/HR AT 15,939'. UNABLE TO MAKE BHA CONTINUE TO DRILL. DECISION MADE TO PULL BHA. 11:30 PERFORM 4 CLEAN UP CYCLES @ RPM: 80; GPM: 300. RACK BACK ONE STAND AFTER EACH BOTTOMS UP F/ 15,945' T/ 15,633'. INITIAL TORQUE 6K, P/U 240, S/O 115, PRESS 6350 PSI. 15:30 ON 4TH CYCLE TORQUE: 5.2K, P/U 232, S/O NONE @ 100, PRESS 6200 PSI BACK REAM OUT OF THE HOLE @ 70 RPM, 165 GPM, TORQUE 5K/7K, PRESSURE: 2650 PSI, 10 FT/MIN STRING SPEED F/ 15,633' T/11,670'; (7" CSG SHOE) 03:30 CIRCULATE BOTTOMS UP; SHAKERS CLEAN; MINIMAL BTM UP GAS; PUMP 80 BBLS OF 15.5 PPG KWM AND SPOT ACROSS CASING SHOE; PUMP 30 BBLS OF 15.5 PPG KWM TO SLUG PIPE; FLOW CHECK WELL AND WELL IS STATIC; 05:30 TOH F/11,670'- T/10,892' @ 25 FT/HR, STRING PULLING WET. STOP AT 10,892' AND PUMP ANOTHER 20 BBL SLUG.

Vis (s/qt): 65, Dens (lb/gal): 12.50, pH: 0.0

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
15,763.0	11,371.68	91.11	344.24	4,645.25	0.67	4,466.13	-1,277.83
15,857.0	11,372.09	88.40	342.52	4,739.24	3.41	4,556.19	-1,304.71

## 01/14/2017

Rig Name: H&P 602

Depth = 15,945.0 Progress = 0.0

06:00 MIX & PUMP 2ND SLUG @ 10,982' DUE TO PIPE PULLING WET. 23 BBL @ 16.0 PPG  
06:30 TOO H @ 100 FT/MIN STRING SPEED ON ELEVATORS F/ 10,982' T/ 5,488'; HOLE TAKING PROPER FILL.  
10:30 MONITOR WELL 10 MINUTES - STATIC. PULL ROTATING HEAD; INSTALL TRIP NIPPLE  
11:00 TOO H @ 100 FT/MIN STRING SPEED ON ELEVATORS F/ 5,488' T/ 2041', HOLE TAKING PROPER FILL.  
13:00 LAY DOWN AGITATOR AND SHOCK SUB. FOUND SEAL COMING OUT OF SHOCK SUB.  
13:30 TOO H @ 100 FT/MIN STRING SPEED ON ELEVATORS F/ 2,041' T/ DIRECTION TOOLS, HOLE TAKING PROPER FILL.  
14:30 CLEAN RIG FLOOR. LAY DOWN BHA #6; BREAK AND GRADE BIT; BIT IS FULL GAUGE, GRADE 1-3.  
16:00 DOWNLOAD ANNULAR TEMP LOGS FROM LWD TOOLS AND VERIFY.  
18:00 WAITING ON NEW DHM TO ARRIVE ON LOCATION; TRUCK DRIVER WAS SENT TO THE WRONG RIG.  
20:00 PICK UP NEW WEATHERFORD 5", 6/7 LOBE, 9.6 STAGE, 0.81 RPG, FIXED SLICK 1.5 DEG BENT DHM; HALLIBURTON MM53D, PDC BIT, (TFA 0.55); PICKED UP FLEX DC AND INSTALLED MWD; SCRIBED MOTOR TO HIGH SIDE AND SURFACED TESTED; GOOD TEST.  
22:00 TIH F/ SURFACE TO 2,012'; WELL IS GIVING PROPER DISPLACEMENT.  
23:00 FILL PIPE AND CIRCULATE @ 250 GPM TO ESTABLISH BASE PRESSURE, 2,155 PSI; PICK UP AGITATOR, MAKE UP AND RUN IN 1 STAND; CIRCULATE @ 250 GPM WITH 2,510 PSI; 355 PSI PRESSURE DROP.  
00:00 TIH F/ 2,012'- T/9,155'; WELL IS GIVING PROPER DISPLACEMENT;  
04:00 INSTALL ROTATING HEAD, CIRCULATE OUT TOP 40 BBLS OF 80 BBL, 15.5 PPG PILL AND CAPTURE IN TT #1; MUD BACK = 42 BBLS @ 13.7 PPG.  
05:00 TIH F/ 9,155'- T/11,000'; WELL IS GIVING PROPER DISPLACEMENT.  
Vis (s/qt): 69, Dens (lb/gal): 12.60, pH: 0.0

## 01/15/2017

Rig Name: H&P 602

Depth = 16,963.0 Progress = 1018.0

06:00 TIH F/ 11,000'- T/15,475'; WELL IS GIVING PROPER DISPLACEMENT; ENCOUNTERED TIGHT SPOT  
10:00 REAM TIGHT SPOT F/ 15,475' T/ 15,503'; TORQUE 6K/10K, GPM: 223, PRESS: 4100 PSI, RPM: 20  
10:30 CIRCULATE OUT TRIP GAS THROUGH CHOKE @ 80 SPM; GPM: 213; PRESS: 3940; AVERAGE FLARE HEIGHT OF 5' FOR 15 MINUTES.  
12:00 WASH & REAM F/ 15,503' T/15,945'; GPM 262; PRESS: 5750; RPM: 70; TORQUE: 6K/8K  
13:00 ROT DRLG F/ 15,945' - T/ 16,000' (55' @ 110 FPH). WOB : 5K/8k, SPM: 102, TOP DRV RPM: 70. GPM: 273; PRESS OFF B: 6110; MUD MTR RPM: 221; TOP DRV TRQ: 9K FT/LBS ON BTM, 7K OFF BTM; DIFF PSI: 450, SLD DRLG F/ 14,306' - T/ 14,338' (32' @ 32 FPH). TF 140R; WOB : 10K/12K, SPM: 113, GPM: 300; MUD MTR RPM: 288; DIFF PSI: 350/400, MW IN/OUT: 12.6+ PPG/12.6 PPG, PU 242 SO 152 ROT 194 235 SO 140 ROT 187  
13:30 LUBRICATE RIG  
14:00 ROT DRLG F/ 16,000' - T/ 16,044' (44' @ 88 FPH). WOB : 10k, SPM: 102, TOP DRV RPM: 70. GPM: 275; PRESS OFF B: 6230; MUD MTR RPM: 223; TOP DRV TRQ: 9K FT/LBS ON BTM, 7K OFF BTM; DIFF PSI: 300, MW IN/OUT: 12.6+

PPG/12.6+ PPG; 235 SO 120 ROT 187  
 NOTE: PUMPS HAD TO BE RECYCLED TWICE TO GET SURVEY

14:30 FLOW INCREASE FROM 20% TO 150% WITH RAPID PIT GAIN. FLARE LIT WITH 15' FLAME AND GAS READING INCREASE FROM 280 UNITS BACKGROUND GAS TO 3485 UNITS DUE TO CONNECTION GAS AT SURFACE. SHUT IN WELL; CIRCULATE OUT CONNECTION GAS THROUGH MUD GAS SEPARATOR. CIRCULATE OUT 2ND AND 3RD BUBBLE THAT WERE DUE TO RECYCLING PUMPS TO GET LAST SURVEY. BEGIN INCREASING MW TO 12.8+ PPG; 15' FLARE 30 MINUTES; 2' FLARE 10 MINUTES

16:00 LINE UP TO DRILL THROUGH CHOKE; BEGAN CIRCULATING AND FOUND ORBIT VALVE LEAKING BADLY; SHUT IN ANNULAR PREVENTER AND CONTINUE TO CIRCULATE TO GET ALL PUMPS OFF EVENTS OUT OF HOLE. 12' FLARE 15 MINUTES.

17:00 ROT DRLG F/ 16,044' - T/ 16,109' (65' @ 130 FPH). WOB : 10k, SPM: 102, TOP DRV RPM: 100. GPM: 275; PRESS OFF B: 6230; MUD MTR RPM: 223; TOP DRV TRQ: 9K FT/LBS ON BTM, 7K OFF BTM; DIFF PSI: 300, MW IN/OUT: 12.8+ PPG/12.6 PPG, PU 240 SO 120 ROT 187

17:30 SLD DRLG F/ 16,109' - T/ 16,141' (32' @ 21.34 FPH). TF 90L; WOB : 15K, SPM: 107, GPM: 285; MUD MTR RPM: 231; DIFF PSI: 300, MW IN/OUT: 12.8+ PPG/12.7 PPG, PU 236 SO 119 ROT 187

19:00 ROT DRLG F/ 16,141' - T/ 16,298' (157' @ 78.5 FPH). WOB : 10k, SPM: 102, TOP DRV RPM: 100. GPM: 275; PRESS OFF B: 6230; MUD MTR RPM: 223; TOP DRV TRQ: 9K FT/LBS ON BTM, 7K OFF BTM; DIFF PSI: 300, MW IN/OUT: 12.8+ PPG/12.8 PPG, PU 238 SO, 140, ROT 184

21:00 SLD DRLG F/ 16,298' - T/ 16,328' (30' @ 20 FPH). TF 60R; WOB : 15K, SPM: 107, GPM: 285; MUD MTR RPM: 231; DIFF PSI: 300, MW IN/OUT: 12.8+ PPG/12.7 PPG, PU 236 SO 119 ROT 187

22:30 ROT DRLG F/ 16,328' - T/ 16,583' (255' @ 127.5 FPH). WOB : 18k/20K, SPM: 102, TOP DRV RPM: 80. GPM: 275; PRESS OFF B: 6230; MUD MTR RPM: 223; TOP DRV TRQ: 12.5K FT/LBS ON BTM, 7K OFF BTM; DIFF PSI: 750/1000, MW IN/OUT: 12.8+ PPG/12.8 PPG, PU 246 SO, 100, ROT 183

00:30 SLD DRLG F/ 16,583' - T/ 16,613' (30' @ 20 FPH). TF 60R; WOB : 15K, SPM: 107, GPM: 285; MUD MTR RPM: 231; DIFF PSI: 300, MW IN/OUT: 12.8+ PPG/12.7 PPG, PU 246 SO 100 ROT 183

02:00 ROT DRLG F/ 16,613' - T/ 16,867' (254' @ 127 FPH). WOB : 18k/20K, SPM: 102, TOP DRV RPM: 80. GPM: 275; PRESS OFF B: 6230; MUD MTR RPM: 223; TOP DRV TRQ: 12.5K FT/LBS ON BTM, 7K OFF BTM; DIFF PSI: 750/1000, MW IN/OUT: 12.8+ PPG/12.8 PPG, PU 246 SO, 100, ROT 183

04:00 SLD DRLG F/ 16,867' - T/ 16,897' (30' @ 20 FPH). TF 60R; WOB : 15K, SPM: 107, GPM: 285; MUD MTR RPM: 231; DIFF PSI: 300, MW IN/OUT: 12.8+ PPG/12.7 PPG, PU 246 SO 100 ROT 183

05:30 ROT DRLG F/ 16,897' - T/ 16,963' (66' @ 132 FPH). WOB : 18k/20K, SPM: 102, TOP DRV RPM: 80. GPM: 275; PRESS OFF B: 6230; MUD MTR RPM: 223; TOP DRV TRQ: 12.5K FT/LBS ON BTM, 7K OFF BTM; DIFF PSI: 750/1000, MW IN/OUT: 12.8+ PPG/12.8 PPG, PU 246 SO, 100, ROT 183

Vis (s/qt): 68, Dens (lb/gal): 12.80, pH: 0.0

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
15,952.0	11,372.24	91.41	342.36	4,834.20	3.17	4,646.75	-1,333.37
16,047.0	11,369.95	91.36	343.81	4,929.17	1.53	4,737.61	-1,361.00
16,141.0	11,369.23	89.51	342.57	5,023.15	2.37	4,827.59	-1,388.18
16,236.0	11,370.92	88.46	340.07	5,118.05	2.85	4,917.56	-1,418.60
16,331.0	11,371.07	91.36	341.91	5,212.93	3.62	5,007.36	-1,449.54
16,426.0	11,368.92	91.23	342.03	5,307.86	0.19	5,097.68	-1,478.94
16,520.0	11,369.17	88.46	340.84	5,401.78	3.21	5,186.77	-1,508.86
16,615.0	11,370.91	89.45	341.73	5,496.68	1.40	5,276.73	-1,539.34
16,710.0	11,370.91	90.55	341.70	5,591.62	1.16	5,366.94	-1,569.14
16,804.0	11,369.45	91.23	338.91	5,685.43	3.05	5,455.42	-1,600.81
16,899.0	11,368.43	90.00	338.18	5,780.04	1.51	5,543.83	-1,635.56

## 01/16/2017

Rig Name: H&P 602

Depth = 17,279.0 Progress = 316.0

06:00 SLD DRLG F/ 16,963' - T/ 17,003' (40' @ 20 FPH). TF 90R; WOB : 35K, SPM: 107, GPM: 285; MUD MTR RPM: 231; DIFF PSI: 175, MW IN/OUT: 12.8 PPG/12.7 PPG, PU 235 SO 113 ROT 183

08:00 ROT DRLG F/ 17,003' - T/ 17,052' (49' @ 33 FPH). WOB : 10K, SPM: 104, TOP DRV RPM: 80. GPM: 277; PRESS OFF B: 6230; MUD MTR RPM: 224; TOP DRV TRQ: 10K FT/LBS ON BTM, 7K OFF BTM; DIFF PSI: 400, MW IN/OUT: 12.8+ PPG/12.8 PPG, PU 236 SO, 115, ROT 182

09:30 SLD DRLG F/ 17,052' - T/ 17,097' (45' @ 18 FPH). TF 90R; WOB : 35K, SPM: 104, GPM: 277; MUD MTR RPM: 224; DIFF PSI: 175, MW IN/OUT: 12.8+ PPG/12.7 PPG, PU 235 SO 113 ROT 183

12:00 ROT DRLG F/ 17,097' - T/ 17,152' (55' @ 55 FPH). WOB : 10K, SPM: 104, TOP DRV RPM: 100. GPM: 277; PRESS OFF B: 6230; MUD MTR RPM: 224; TOP DRV TRQ: 9.5K FT/LBS ON BTM, 6K OFF BTM; DIFF PSI: 400/600, MW IN/OUT:

12.8+ PPG/12.8 PPG,PU 239 SO, 115, ROT 185

13:00 SLD DRLG F/ 17,152" - T/ 17,193' (41' @ 21 FPH). TF 90R; WOB : 35K, SPM: 104, GPM: 277; MUD MTR RPM: 224; DIFF PSI: 175, MW IN/OUT: 12.8+ PPG/12.7+ PPG, PU 235 SO 113 ROT 183  
90% SHALE, 10% SS

15:00 ROT DRLG F/ 17,193' - T/ 17,245' (52' @ 53 FPH). WOB : 10K, SPM: 104, TOP DRV RPM: 80. GPM: 277; PRESS OFF B: 6230; MUD MTR RPM: 224; TOP DRV TRQ: 9.5K FT/LBS ON BTM, 6K OFF BTM; DIFF PSI: 500/600, MW IN/OUT: 12.8+ PPG/12.8 PPG,PU 245 SO, 115, ROT 185

16:00 SLD DRLG F/ 17,245" - T/ 17,253' (8' @ 16 FPH). TF 180; WOB : 35K, SPM: 104, GPM: 277; MUD MTR RPM: 224; DIFF PSI: 175, MW IN/OUT: 12.8+ PPG/12.8 PPG, PU 25 SO 113 ROT 183

16:30 MOTOR STALLED AT 17,253'. PRESSURE SPIKED; UNABLE TO RETURN TO FULL PUMP RATE DUE TO EXCESSIVE PRESSURE. ROTATE AT 105 RPM AND SLOWLY STAGE UP PUMP RATE. NEW PRESSURE = 6900 PSI OFF BOTTOM AT 210 GPM. (BEFORE PRESSURE SPIKE: 6230 PSI AT 277 GPM.) WORK PIPE 20' UP AND DOWN WHILE ROTATING 105 IN ATTEMPT TO CLEAR BLOCKAGE. MWD NOT GETTING A PULSE FROM TOOLS.

18:00 ROT DRLG F/ 17,253' - T/ 17,279' (26' @ 26 FPH). WOB : 10K, SPM: 79, TOP DRV RPM: 105. GPM: 210; PRESS OFF B: 6900; MUD MTR RPM: 170; TOP DRV TRQ: 6K FT/LBS ON BTM, 5.5K OFF BTM; DIFF PSI: 0, MW IN/OUT: 12.9 PPG/12.8 PPG,PU 245 SO, 115, ROT 185  
DRILL AND WORK PIPE; ATTEMPT TO GET MWD PULSE; UNABLE TO GET PULSE - DECISION MADE TO PULL OUT OF HOLE.

20:00 PERFORM FOUR CLEAN UP CYCLES AT GPM: 218; PRESS: 6900; RPM: 100; TORQUE: 6K/8K;  
MINIMAL CUTTINGS ACROSS SHAKERS.

01:30 BACK REAM OUT OF THE HOLE @ 70/100 RPM, 225 GPM, TORQUE 4K/10K, PRESSURE: 6850 PSI,10 FT/MIN STRING SPEED FIRST 30' THEN SLOWLY INCREASING STRING SPEED AS HOLE ALLOWS, MAX SPEED 14/17 FT/MIN DUE TO EXCESSIVE TORQUE; F/16,868' T/15,352'.

Vis (s/qt): 64, Dens (lb/gal): 12.85, pH: 0.0

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
16,994.0	11,366.74	92.03	339.45	5,874.68	2.52	5,632.39	-1,669.88
17,088.0	11,362.90	92.65	341.92	5,968.46	2.71	5,721.01	-1,700.94
17,183.0	11,358.30	92.90	345.87	6,063.33	4.16	5,812.16	-1,727.26

## 01/17/2017

Rig Name: H&P 602

Depth = 17,279.0 Progress = 0.0

06:00 BACK REAM OUT OF THE HOLE @ 70/100 RPM, 225 GPM, TORQUE 4K/12K, PRESSURE: 6200 PSI,10 FT/MIN STRING SPEED FIRST 30' THEN SLOWLY INCREASING STRING SPEED AS HOLE ALLOWS, MAX SPEED 20 FT/MIN DUE TO EXCESSIVE TORQUE; F/15,352' T/13,075'.

12:00 KATCH KAN DRAIN STOPPED UP, PREVENTING MUD FROM DRAINING FROM KATCH KAN TO TRIP TANK. PULLED MUD OUT OF KATCH KAN AND CLEAR LINE TO TRIP TANK. SLOWLY WORK PIPE WHILE WORKING ON KATCH KAN, RPM: 40, GPM 225, TORQ: 4K, PRESS: 6200

13:00 BACK REAM OUT OF THE HOLE @ 85 RPM, 205 GPM, TORQUE 4K/12K, PRESSURE: 5900 PSI,10 FT/MIN STRING SPEED FIRST 30' THEN SLOWLY INCREASING STRING SPEED AS HOLE ALLOWS, MAX SPEED 20 FT/MIN DUE TO EXCESSIVE TORQUE; F/13,075' T/12,224'NOTE: PRESS INCREASED F/ 6400 T/ 6700 @ 225 GPM; REDUCED RATE TO 205 GPM

15:00 BACK REAM OUT OF THE HOLE @ 85 RPM, 185 GPM, TORQUE 4K/12K, PRESSURE: 5500 PSI,10 FT/MIN STRING SPEED FIRST 30' THEN SLOWLY INCREASING STRING SPEED AS HOLE ALLOWS, MAX SPEED 20 FT/MIN DUE TO EXCESSIVE TORQUE; F/12,224' T/11,570'  
NOTE: PRESS INCREASED F/ 5900 T/ 6200 @ 205 GPM; REDUCED RATE TO 185 GPM

16:30 CIRCULATE BOTTOMS UP; SHAKERS CLEAN; MINIMAL BTM UP GAS; PUMP 80 BBLS OF 15.8 PPG KWM AND SPOT AT 2,100'; PUMP 60 BBLS OF 15.8 PPG KWM TO SLUG PIPE; FLOW CHECK WELL AND WELL IS STATIC;

19:00 TOH F/11,570' T/10,627'; WELL IS TAKING PROPER FILL, PULLING 100 FT/MIN.

20:00 SLIP AND CUT DRILLING LINE PER H&P COA (SAFE DRILLING PRACTICES).

21:30 TOH F/10,627' T/9,167'; PIPE BEGAN PULLING WET AND NOT TAKING PROPER FILL; PULLING AT 100 FT/MIN.

22:30 FLOW CHECK WELL, WELL IS FLOWING @ 1 QUART IN 5 MINUTES; SHUT IN WELL TO MONITOR PRESSURE, NO PRESSURE; OPEN WELL UP AND WELL IS STATIC;.

23:00 TOH F/9,167' T/SURFACE' WELL IS TAKING PROPER FILL AND PIPE IS PULLING DRY; PULLING @ 50/60 FT/MIN.

05:00 DRAIN MOTOR AND BREAK AND DULL GRADE BIT; MOTOR DRAINED GOOD; BIT GRADE 1-1, FULL GAUGE WITH 3 FULLY PLUGGED NOZZLES AND 1

PARTIALLY PLUGGED NOZZLE WITH RUBBER; LD MWD TOOLS.

Vis (s/qt): 70, Dens (lb/gal): 12.90, pH: 0.0

### 01/18/2017

Rig Name: H&P 602

Depth = 17,279.0 Progress = 0.0

06:00 PICK UP NEW 5" 1.5 DEG 6/7 9.6 STAGE .81 REV/GAL MOTOR & MWD;  
SHALLOW TEST TOOLS; HAD 2700 AND 3000 PSI PRESSURE SPIKES;  
RECYCLED PUMPS; HAD A 2800 PSI SPIKE; MWD TOOLS FUNCTIONING;  
DECISION MADE TO CHANGE MOTOR AND INSPECT MWD TOOLS; LAY DOWN  
MOTOR AND MWD TOOLS.

08:30 PICK UP NEW 4 3/4" 1.5 DEG BEND 5/6 LOBE 8.3 STAGE 0.96 REV/GAL MOTOR  
AND MWD TOOLS. SHALLOW TEST TOOLS - GOOD; MAKE UP 6" HALLIBURTON  
MM53D PDC BIT; MAKE UP FLEX COLLAR AND CROSS-OVER

10:30 TIH F/ SURFACE TO 2,042'; WELL IS GIVING PROPER DISPLACEMENT.

11:30 FILL PIPE AND CIRCULATE @ 250 GPM TO ESTABLISH BASE PRESSURE, 1,980  
PSI; PICK UP AGITATOR, MAKE UP AND RUN IN 1 STAND; CIRCULATE @ 250  
GPM WITH 2,340 PSI; 360 PSI PRESSURE DROP.

12:30 TIH F/ 2,042' - T/ 9,175'; WELL IS GIVING PROPER DISPLACEMENT.

16:30 REMOVE TRIP NIPPLE; INSTALL ROTATING HEAD ELEMENT. MONITOR WELL ON  
TRIP TANK - WELL IS STATIC.

17:00 TIH F/ 9,175' T/ 16,190'; WELL IS GIVING PROPER DISPLACEMENT. TAGGED  
UP @ 16,190'.

00:00 CIRCULATE BOTTOMS UP, CAPTURING HEAVY PILL IN TRIP TANK AND  
CLEARING GAS FROM WELLBORE; BOTTOMS UP THROUGH CHOKE W/3300  
UNITS GAS AND 15'/20' FLARE FOR 35 MINUTES.

01:00 ATTEMPT TO WASH AND REAM THROUGH TIGHT SPOT; OFF BOTTOM TORQUE  
F/10,000/15,500 FT/LBS, STALLING TOP DRIVE, BEGIN WORKING PIPE UP F/  
16,190' T/15,926'; WITH 80/90 RPMS; 225 GPM; WHEN ATTEMPTING TO GO  
DOWN ROTARY TORQUES AND STALLS OUT AND PRESSURE CLIMBS TO  
6,850/6,950 PSI; BEGAN LOOSING MUD TO HOLE @ 1 BBL/MIN; REDUCED  
PUMP RATE TO 100 GPM.

02:00 CIRCULATE BOTTOMS UP TO EVACUATE GAS INFLUX DUE TO MULTIPLE PUMPS  
OFF AND LOW PUMP RATES; BOTTOMS UP @ 3,142 UNITS WITH 5'/10' FLARE  
FOR 15 MINUTES; WHILE CIRCULATING PRESSURE DROPPED 350 PSI AND  
UNLOADING VERY LARGE CUTTINGS 1/4"/1/2" IN SIZE ACROSS SHAKERS  
40%/50% SCREEN COVERAGE ON 2 SHAKERS. SPOKE WITH OPERATIONS  
MANAGER AND DECISION WAS MADE TO DO A CLEAN UP CYCLE UNTIL WELL  
BORE CLEANS UP AND RAISE MW TO 13 PPG.

03:00 CIRCULATING CLEAN UP CYCLE; 180 GPM; BEGINNING SPP 4,300 PSI  
DROPPING TO 3,400 PSI; OFF BTM TORQUE BEGINNING 10K/12K; DROPPING  
TO 4.5K/5K @ 70 RPMS; SHAKERS CLEANED UP TO NORMAL FINE AND MED  
FINE CUTTINGS BEFORE BOTTOMS UP; 15% SCREEN COVERAGE.

04:30 WASH AND REAM F/15,933' T/16,576'; 70 RPM; 200 GPM; 3,850 PSI SPP;  
4.5K/5K TRQ; 15%/20% SCREEN COVERAGE OF FINE AND MEDIUM FINE  
CUTTINGS; MW IN & OUT= 13.0 PPG.

Vis (s/qt): 71, Dens (lb/gal): 12.90, pH: 0.0

### 01/19/2017

Rig Name: H&P 602

Depth = 17,829.0 Progress = 550.0

06:00 WASH AND REAM F/16,576' T/17,279'; 70 RPM; 200 GPM; 3,850 PSI SPP;  
4.5K/5K TRQ; 15%/20% SCREEN COVERAGE OF FINE AND MEDIUM FINE  
CUTTINGS; MW IN & OUT= 13.0 PPG.

08:00 CIRC CONNECTION GASSES FROM WELLBORE.

08:30 SLD DRLG F/ 17,279' - T/ 17,308' (29' @ 19.34 FPH). TF 180; WOB : 20K,  
SPM: 108, GPM: 280; MUD MTR RPM: 267; DIFF PSI: 200, MW IN/OUT: 13.0  
PPG, PU 240 SO 120 ROT 183

10:00 ROT DRLG F/ 17,308' - T/ 17,532' (224' @ 112 FPH). WOB : 10K, SPM: 104,  
TOP DRV RPM: 100. GPM: 290; PRESS OFF B: 6230; MUD MTR RPM: 264; TOP  
DRV TRQ: 9.5K FT/LBS ON BTM, 6K OFF BTM; DIFF PSI: 500/600, MW IN/OUT:  
13.1+,  
PU 232 SO, 115, ROT 185

12:00 SLD DRLG F/ 17,532' - T/ 17,585' (53' @ 15.14 FPH). TF 180; WOB : 20K,  
SPM: 108, GPM: 280; MUD MTR RPM: 267; DIFF PSI: 200, MW IN/OUT: 13.0  
PPG, PU 240 SO 120 ROT 183

15:30 ROT DRLG F/ 17,585' - T/ 17,623' (38' @ 76 FPH). WOB : 10K, SPM: 104, TOP  
DRV RPM: 100. GPM: 290; PRESS OFF B: 6230; MUD MTR RPM: 264; TOP DRV  
TRQ: 9.5K FT/LBS ON BTM, 6K OFF BTM; DIFF PSI: 500/600, MW IN/OUT:  
13.1+,  
PU 232 SO, 115, ROT 185

16:00 SERVICE RIG, TDS, CATWALK AND GREASE CROWN

16:30 SLD DRLG F/ 17,623' - T/ 17,674' (51' @ 25.5 FPH). TF 90; WOB : 20K, SPM:  
108, GPM: 280; MUD MTR RPM: 267; DIFF PSI: 200, MW IN/OUT: 13.0 PPG, PU  
240 SO 120 ROT 183

18:30 ROT DRLG F/ 17,674' - T/ 17,723' (49' @ 32.7 FPH). WOB : 17K, SPM: 104,  
TOP DRV RPM: 90. GPM: 290; PRESS OFF B: 6307; MUD MTR RPM: 264; TOP

DRV TRQ: 10K FT/LBS ON BTM, 6K OFF BTM; DIFF PSI: 500/600, MW IN/OUT: 13.2, PU 236 SO, 95, ROT 181

20:00 SLD DRLG F/ 17,723' - T/ 17,764' (41' @ 6.8 FPH). TF 120; WOB : 70K, SPM: 108, GPM: 243/280; MUD MTR RPM: 221/267; DIFF PSI: 200, MW IN/OUT: 13.2 PPG, PU 240 SO 115

02:00 SLD DRLG F/ 17,764' - T/ 17,768' (4' @ 4 FPH). TF 120; WOB : 70K, SPM: 108, GPM: 250/280; MUD MTR RPM: 227/267; DIFF PSI: 200, MW IN/OUT: 13.2 PPG, PU 240 SO 120

03:00 ROT DRLG F/ 17,768' - T/ 17,818' (50' @ 33.3 FPH). WOB : 17K, SPM: 104, TOP DRV RPM: 90. GPM: 290; PRESS OFF B: 6307; MUD MTR RPM: 264; TOP DRV TRQ: 10K FT/LBS ON BTM, 6K OFF BTM; DIFF PSI: 500/600, MW IN/OUT: 13.2, PU 236 SO, 105, ROT 181

04:30 SLD DRLG F/ 17,818' - T/ 17,829' (11' @ 7.3 FPH). TF 90; WOB : 70K, SPM: 90, GPM: 240; MUD MTR RPM: 218; DIFF PSI: 200, MW IN/OUT: 13.2 PPG, PU 240 SO 120; SPR @ 17817 13.2MWT #1MP= 30/1210;40/1570;50/2050;#2 30/1165;40/1450;50/1990

Vis (s/qt): 64, Dens (lb/gal): 13.10, pH: 0.0

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
17,268.0	11,354.49	92.24	345.79	6,148.19	0.78	5,894.49	-1,748.05
17,363.0	11,352.46	90.21	344.30	6,243.13	2.65	5,986.24	-1,772.56
17,458.0	11,352.46	89.79	342.01	6,338.12	2.45	6,077.16	-1,800.09
17,553.0	11,353.10	89.44	340.72	6,433.04	1.41	6,167.18	-1,830.44
17,648.0	11,352.58	91.19	342.13	6,527.96	2.37	6,257.22	-1,860.70
17,743.0	11,352.05	89.44	342.99	6,622.93	2.05	6,347.85	-1,889.17

## 01/20/2017

Rig Name: H&P 602

Depth = 17,922.0 Progress = 93.0

06:00 CIRCULATE AND CLEAN HOLE DUE TO PROBLEMS WITH GETTING WOB WHILE SLIDING; 280 GPM, 5900 PSI SPP, 100 RPM, WORKING STRING 90'; CONTINUOUS SCREEN COVERAGE OF 15%/20% OF FINE AND MEDIUM FINE DRILL CUTTINGS @ SHAKERS.

10:00 PUMP 40 BBLS OF SYSTEM MUD W/BEADS AND GRAPHITE, ORIENT TOOL FACE AND SLD DRILL F/17,829' T/17,834', 5' @ 7 FT/HR; TF 90; WOB : 70K, SPM: 90, GPM: 240; MUD MTR RPM: 218; DIFF PSI: 25/50, MW IN/OUT: 13.2 PPG, PU 240 SO 120; OSCILLATING STRING TRYING TO HELP GET WOB; SAVERSUB BACKED OFF ON DP CAUSING A LEAK.

11:00 SAVER SUB BELOW TOP DRIVE BACKED OFF OF DP SPRAYING MUD IN THE AIR; SET BACK 2 STANDS AND INSTALLED A PUMP IN SUB ON THE STUMP; CIRCULATING HOLE @ 100 GPM; BREAK OFF SAVER SUB FROM TOP DRIVE AND REPLACED WITH NEW ONE; CHANGED OUT GRABBER DIES.

18:00 REAM F/17,716' T/17,834' LAYED DOWN TOP JT. & PICKED UP NEW JT. INSTALL NEW ROLL PINS IN RING ATTACHED IT TO DRILL PIPE SCREEN.

19:30 PUMP 20 BBLS OF SYSTEM MUD W/BEADS AND GRAPHITE, ORIENT TOOL FACE AND SLD DRILL F/17,834' T/17,847', 13' @ 3.3 FT/HR; TF 90; WOB : 65K, SPM: 93, GPM: 254; MUD MTR RPM: 231; DIFF PSI: 100,SPP:5950; MW IN:14.3 OUT: 14.2t PPG:, PU 245 SO 105; OSCILLATING STRING TRYING TO HELP GET WOB; DUSTING UP MUD WT. F/13.3 T/14.3; PUMP 10 BBLS OF SYSTEM MUD W/BEADS AND GRAPHITE EVERY 10'

23:30 SLD DRILL F/17,847' T/17,866', 19' @ 4.8 FT/HR; TF 90; WOB : 65K, SPM: 93, GPM: 254; MUD MTR RPM: 231; DIFF PSI: 100,SPP:5950; MW IN:14.2 OUT: 14.1 PPG:, PU 245 SO 105; OSCILLATING STRING TRYING TO HELP GET WOB; DUSTING UP MUD WT. F/13.3 T/14.3; PUMP 10 BBLS OF SYSTEM MUD W/BEADS AND GRAPHITE EVERY 10'

03:30 SLD DRILL F/17,866' T/17,882', 16' @ 16 FT/HR; TF 90; WOB : 2/65K, SPM: 93, GPM: 280; MUD MTR RPM: 255; DIFF PSI: 100,SPP:6450; MW IN:14.3 OUT: 14.3 PPG:, PU 245 SO 105; OSCILLATING STRING TRYING TO HELP GET WOB; PUMP 10 BBLS OF SYSTEM MUD W/BEADS AND GRAPHITE EVERY 10'

04:30 ROT DRLG F/ 17,882' - T/ 17,910' (28' @ 56 FPH). WOB : 15K, SPM: 102, TOP DRV RPM: 90. GPM: 280; PRESS OFF B: 6979; MUD MTR RPM: 255; TOP DRV TRQ: 10K FT/LBS ON BTM, 6K OFF BTM; DIFF PSI: 500/600; PU 230 SO 105 ROT: 181

05:00 SLD DRILL F/17,910' T/17,922', (12' @ 12 FT/HR); TF 30R; WOB : 65K, SPM: 102, GPM: 280; MUD MTR RPM: 255; DIFF PSI: 130,SPP:6590; MW IN:14.3 OUT: 14.3 PPG:, PU 245 SO 105; OSCILLATING STRING TRYING TO HELP GET WOB;

Vis (s/qt): 68, Dens (lb/gal): 13.30, pH: 0.0

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
17,838.0	11,354.32	87.83	344.62	6,717.90	2.41	6,439.05	-1,915.66

## 01/21/2017

Rig Name: H&P 602

Depth = 18,588.0 Progress = 666.0

06:00 SLD DRILL F/17,922' T/17,960', (38' @ 15.2 FT/HR); TF 90R; WOB : 20K, SPM: 102, GPM: 280; MUD MTR RPM: 255; DIFF PSI: 130,SPP:6590; MW IN:14.3

08:30 OUT: 14.3 PPG:, PU 245 SO 105;  
 ROT DRLG F/ 17,960' - T/ 18,100' (140' @ 40 FPH). WOB : 15K, SPM: 102, TOP  
 DRV RPM: 100. GPM: 280; PRESS OFF B: 6979; MUD MTR RPM: 255; TOP DRV  
 TRQ: 12K FT/LBS ON BTM, 8.5K OFF BTM; DIFF PSI: 500/600; PU 230 SO 105  
 ROT: 181

12:00 ROT DRLG F/ 18,100' - T/ 18,200' (100' @ 50 FPH). WOB : 15K, SPM: 102, TOP  
 DRV RPM: 80. GPM: 280; PRESS OFF B: 6979; MUD MTR RPM: 255; TOP DRV  
 TRQ: 9K FT/LBS ON BTM, 6K OFF BTM; DIFF PSI: 500/600; PU 230 SO 105  
 ROT: 181

14:00 SLD DRILL F/18,200' T/18,244', (44' @ 12.6 FT/HR); TF 250L; WOB : 20K,  
 SPM: 102, GPM: 280; MUD MTR RPM: 255; DIFF PSI: 130,SPP:6590; MW  
 IN:14.3 OUT: 14.3 PPG:, PU 245 SO 105;

17:30 ROT DRLG F/ 18,244' - T/ 18,291' (47' @ 47 FPH). WOB : 10/15K, SPM: 102,  
 TOP DRV RPM: 80. GPM: 280; PRESS OFF B: 6979; MUD MTR RPM: 255; TOP  
 DRV TRQ: 9K FT/LBS ON BTM, 7K OFF BTM; DIFF PSI: 350; PU 228 SO 125  
 ROT: 175

18:30 TOP DRIVE, SPR'S @ 18,293' MW 14.3 MP#1 30/1400,40/1770,50/2210 MP#2  
 30/1390,40/1700,50/2200

19:00 ROT DRLG F/ 18,291' - T/ 18,416' (125' @ 31.3 FPH). WOB : 8/15K, SPM:  
 84/102, TOP DRV RPM: 80/95. GPM: 220/280; PRESS OFF B: 5556; MUD MTR  
 RPM: 200/255; TOP DRV TRQ: 9K FT/LBS ON BTM, 7K OFF BTM; DIFF PSI:  
 240/350; PU 228 SO 125 ROT: 171; STARTED LOSING OBM @ 19:40 @  
 10BBLS PER HR SLOWED PUMPS DOWN F/270GPM T/220 GPM STOPPED  
 LOSING MUD

23:00 ROT DRLG F/ 18,416' - T/ 18,529' (113' @ 28.3 FPH). WOB : 10K, SPM: 84,  
 TOP DRV RPM: 92. GPM: 220; PRESS OFF B: 4700; MUD MTR RPM: 200; TOP  
 DRV TRQ: 8K FT/LBS ON BTM, 5.5K OFF BTM; DIFF PSI: 300; PU 228 SO 95  
 ROT: 171;

03:00 ROT DRLG F/ 18,529' - T/ 18,588' (59' @ 23.6 FPH). WOB : 10K, SPM: 84, TOP  
 DRV RPM: 92. GPM: 220; PRESS OFF B: 4700; MUD MTR RPM: 200; TOP DRV  
 TRQ: 8K FT/LBS ON BTM, 5.5K OFF BTM; DIFF PSI: 350; PU 228 SO 95 ROT:  
 171

05:30 CIRCULATE & CONDITION HOLE PER K&M

Vis (s/qt): 68, Dens (lb/gal): 14.30, pH: 0.0

MD (ft)	TVD (ft)	Incl (°)	Azi (°)	VS (ft)	DLS (°/100ft)	N/S (ft)	E/W (ft)
17,933.0	11,356.12	90.00	349.04	6,812.71	5.18	6,531.50	-1,937.29
18,028.0	11,354.84	91.54	350.21	6,907.19	2.04	6,624.94	-1,954.40
18,124.0	11,351.62	92.31	351.59	7,002.37	1.65	6,719.67	-1,969.57
18,218.0	11,350.98	88.46	347.99	7,095.80	5.61	6,812.15	-1,986.23
18,313.0	11,354.93	86.78	346.35	7,190.54	2.47	6,904.69	-2,007.30
18,409.0	11,360.09	87.06	346.76	7,286.28	0.52	6,997.92	-2,029.59
18,504.0	11,365.25	86.71	347.01	7,380.99	0.45	7,090.31	-2,051.12
18,513.0	11,365.78	86.50	347.04	7,389.96	2.36	7,099.06	-2,053.13

**01/22/2017**

Rig Name: H&P 602

Depth = 18,588.0 Progress = 0.0

06:00 PERFORM CLEAN UP CYCLES PER K&M MODELING; 225 GPM; 4875 PSI SPP;  
 100 RPM; RECIPROCATING STRING @ 15 FT/MIN; SETTING BACK 1 STAND PER  
 BOTTOMS UP; 1ST BTM UP 15%/20% SCREEN COVERAGE ACROSS SHAKERS;  
 2ND BTM UP 15%/20% SCREEN COVERAGE ACROSS SHAKERS; 3RD BTM UP  
 15%/20% SCREEN COVERAGE ACROSS SHAKERS; 4TH BTM UP 15%/20%  
 SCREEN COVERAGE ACROSS SHAKERS; 5TH BTM UP 15%/20% SCREEN  
 COVERAGE ACROSS SHAKERS; ALL FINE AND MED FINE CUTTINGS, NOTHING  
 LARGE SEEN; 3075 UNITS GAS AVG W/ EACH BOTTOMS UP.

13:00 BACKREAMING F/18,123'- T/17,379' @ 10 FT/MIN INCREASING PULL SPEED  
 SLOWLY AS WELL ALLOWS NOT EXCEEDING 30 FT/MIN; 225 GPM; 80RPM;  
 4470 PSI SPP; TRQ 5550/6050 FT/LBS; PU 230; ROT 188; SO 110; AVG PULL  
 SPEED ALLOWED 15 FT/MIN.

15:30 CIRCULATE BOTTOMS UP TO CLEAR ALL CONNECTION GASSES FROM  
 BACKREAMING; 3046 UNITS GAS FOR 25 MINUTES; FLOW INCREASE F/ 35%  
 T/148%; 18 BBLS PIT GAIN;

16:30 BACKREAMING F/17,379'- T/16,618' @ 10 FT/MIN INCREASING PULL SPEED  
 SLOWLY AS WELL ALLOWS NOT EXCEEDING 30 FT/MIN; 270 GPM; 80RPM;  
 5833 PSI SPP; TRQ 4800/6050 FT/LBS; PU 235; ROT 180; SO 125; AVG PULL  
 SPEED ALLOWED 15 FT/MIN.

19:00 CIRCULATE BOTTOMS UP TO CLEAR ALL CONNECTION GASSES FROM  
 BACKREAMING; 3155 UNITS GAS FOR 15 MINUTES; FLOW INCREASE F/ 21%  
 T/125%; 30 BBL PIT GAIN; BACK REAMING @ 30FPM

20:00 BACKREAMING F/16,618'- T/15,862' @ 10 FT/MIN INCREASING PULL SPEED  
 SLOWLY AS WELL ALLOWS NOT EXCEEDING 12 FT/MIN; 270 GPM; 80RPM;  
 5833 PSI SPP; TRQ 4758/5550 FT/LBS; PU 235; ROT 180; SO 125; AVG PULL  
 SPEED ALLOWED 10 FT/MIN. HAVING TO RETIE PIPE IN DERRICK DUE TO  
 HIGH WINDS BREAKING ROPES AROUND DRILL PIPE; WIND @ 28MPH WIND  
 GUSTS TO 40/70 MPH.F/16,170 TRQ:5.3K OVER,400 PSI OVER, DRAG 11.5K



OVER  
23:00 CIRCULATE BOTTOMS UP TO CLEAR ALL CONNECTION GASSES FROM BACKREAMING; 2180 UNITS GAS FOR 15 MINUTES; FLOW INCREASE F/ 18% T/47%; 0 BBL PIT GAIN; BACK REAMING @ 10/12FPM  
23:30 BACKREAMING F/15,862'- T/14,243' @ 10 FT/MIN INCREASING PULL SPEED SLOWLY AS WELL ALLOWS NOT EXCEEDING 12 FT/MIN; 250 GPM; 80RPM; 4685 PSI SPP; TRQ 4346/5312 FT/LBS; PU 235; ROT 186; SO 125; AVG PULL SPEED ALLOWED 11 FT/MIN.  
03:30 BACKREAMING F/14,243'- T/14,020' @ 10 FT/MIN INCREASING PULL SPEED SLOWLY AS WELL ALLOWS NOT EXCEEDING 12 FT/MIN; 250 GPM; 80RPM; 4758/5336 PSI SPP; TRQ 4296/10081 FT/LBS; PU 184; ROT 186; SO 125; AVG PULL SPEED ALLOWED 11 FT/MIN. PULLED INTO TIGHT SPOT @ 14,036' PULLED 10K OVER PICK UP  
04:00 CIRCULATE BOTTOMS UP & WORK THROUGH TIGHT SPOT CHECKED SHAKERS FOR CAVINGS OR CUTTINGS NONE PRESENT AT SHAKERS; FLOW INCREASE F/ 18% T/226%;  
05:00 BACKREAMING F/14,020'- T/13,210' @ 10 FT/MIN INCREASING PULL SPEED SLOWLY AS WELL ALLOWS NOT EXCEEDING 30 FT/MIN; 250 GPM; 80RPM; 4773 PSI SPP; TRQ 3734/4671 FT/LBS; PU 235; ROT 190; SO 125; AVG PULL SPEED ALLOWED 20 FT/MIN.  
Vis (s/qt): 69, Dens (lb/gal): 14.30, pH: 0.0

### 01/23/2017

Rig Name: H&P 602

Depth = 18,588.0 Progress = 0.0

06:00 CIRCULATE @ 200 GPM WHILE CHANGING SWAB IN #2 PUMP AND CLEANING OBM FROM DUCKPONDS ON #1 & #2 MUD PUMPS.  
09:30 BACKREAMING F/13,210'- T/11,600' @ 10 FT/MIN INCREASING PULL SPEED SLOWLY AS WELL ALLOWS NOT EXCEEDING 30 FT/MIN; 250 GPM; 80RPM; 4773 PSI SPP; TRQ 3734/4671 FT/LBS; PU 235; ROT 190; SO 125; AVG PULL SPEED ALLOWED 20 FT/MIN.  
12:30 CIRCULATE BOTTOMS UP TO CLEAR GAS FROM WELLBORE; MIX AND PUMP 95 BBLS OF 16.0 PPG HEAVY MUD AND SPOT @ 1,000'; SLUG PIPE W/45 BBLS OF 16.0 PPG SLUG TO DRY PIPE; FLOW CHECK WELL, WELL IS STATIC.  
16:00 TOH F/ 11,600'- T/ 11,135' @ 80 FT/MIN; 5 STANDS, STRING IS PULLING WET; PUMP 15 BBLS OF 16.0 PPG SLUG AND CHASE WITH 10 BBLS OF SYSTEM MUD. WELL IS TAKING PROPER FILL; PIPE IS PULLING DRY.  
16:30 TOH F/11,135'- T/5,000' @ 80 FT/MIN; WELL IS TAKING PROPER FILL.  
21:00 TIH F/5000'T/11367' @ 200 FT/MIN; WELL IS GIVING PROPER DISPLACEMENT  
00:30 FILLED PIPE PERFORMED FLOW CHECK WELL FLOWING 10BBL PER HR.SHUT IN WITH ANN. TO MONITOR CASING PRESSURE BUILT UP TO 338 PSI  
01:00 CIRCULATE 1 FULL CIRCULATION & CATCH 16# PILL & PIPE SLUG IN TRIP TANKS; TOTAL OF 90 BBLS HEAVY MUD CAPTURED @ 15.8 PPG; FLOW CHECK WELL AND TOOK A 5 1/2 BBL GAIN QUICKLY; SHUT IN AND MONITOR PRESSURES; SICP= 490 PSI, SIDPP= 250 PSI; SPOKE WITH PROJECT MANAGER AND DETERMINED 14.8 PPG KWM NEEDED.  
04:30 CIRCULATING OUT KICK USING DRILLERS METHOD @ 50 SPM THROUGH CHOKE HOLDING SIDPP + SRP = 2150 PSI ON DP. WHILE MIXING 14.8 PPG KWM.

Vis (s/qt): 67, Dens (lb/gal): 14.30, pH: 0.0

### 01/24/2017

Rig Name: H&P 602

Depth = 18,588.0 Progress = 0.0

06:00 PUMP CIRCULATE 14.8 PPG KWM; 135 GPM; 2,245 PSI SPP; 1 FULL CIRCULATION AND VERIFY 14.8 PPG THROUGHOUT SYSTEM.  
08:30 FLOW CHECK WELL AND WELL IS FLOWING @ 1/2 - 3/4 BBL/MIN. SHUT IN AND MONITOR PRESSURES; SIDDP= 177 PSI CLIMBING TO 385 PSI OVER 15 MIN. SICP = 44 PSI, CLIMBING TO 436 PSI OVER 15 MINUTES; BLEED OFF 3 BBLS W/ CHOKE @ 18% AND SICP DROPPED TO 0 PSI, SIDPP DROPPED TO 325; MONITOR PRESSURE FOR 2 1/2 HOURS STEADILY CLIMBING TO SIDDP= 653 PSI, SICP= 568 PSI; OPENED CHOKE 25% AND BLEED 5 BBLS, 1ST BBL TOOK 46 SECONDS, 2ND BBL TOOK 67 SECONDS, 3RD BBL TOOK 162 SECONDS, 4TH BBL TOOK 247 SECONDS, 5 TH BBL TOOK 555 SECONDS; FLOW SLOWED TO FINGER SIZED STREAM OPENED CHOKE 100% W/ NO INCREASE; CSG PSI 0, SIDPP 121 PSI;  
14:00 TIH F/11,367'- T/13,165'; WELL IS GIVING PROPER DISPLACEMENT.  
15:00 CIRCULATE BOTTOMS UP ON CHOKE TO CLEAR GAS; BEGAN @ 185 GPM AND SAW A 5 BBL LOSS; SLOWED PUMP TO 135 GPM AND MAINTAINING 0 G/L; 1,850 PSI SPP; BTMS UP W/ 1,049 UNITS OF GAS AND 14.7 PPG CUT MUD;  
17:00 TIH F/13,165'- T/16,100'; WELL IS GIVING PROPER DISPLACEMENT.  
18:30 CIRCULATE 2 BOTTOMS UP ON CHOKE TO CLEAR GAS; PUMP @ 150 GPM/55 STROKES 2300 PSI AND HAD 22 BBL MAX GAIN WHEN GAS VOID WAS FILLED ENDED UP WITH 11 BBL NET GAIN ;; BTMS UP W/ 2311 UNITS OF GAS AND 11.1 PPG CUT MUD;MAX FLARE 30'  
22:30 FLOW CHECKED APPRX. 15BBL PR HR, SHUT IN FOR 10 MIN. SICP PRESSURE INCREASED TO 215 PSI, 192 SIDPP; BEGIN CIRCULATING BTMS. UP THROUGH

CHOKE & GAS BUSTER SPM=50; SPP=1875; GPM=135, MAX GAS 1626, MAX FLARE 15' GAS CUT MUD 14.5 PPG ; CIRCULATED GAS DOWN TO 950 PSI GAS STARTED INCREASING TO 1033 PSI 1.5' MAX FLARE; GAS CUT MUD F/14.8+ T/14.8; CHECK FLOW APPRXLY 6 BBLS PER HR. SHUT WELL IN CALLED MANAGEMENT DISCUSSED TIH ; OPENED CHOKE 100% W/ NO INCREASE AFTER MUD EQUALIZE OUT IN WELL BORE FLOW SLOWED TO FINGER SIZED STREAM; CSG PSI 0, SIDPP 121 PSI;

04:00 WASH & REAM F/16,100' T/17,060' GPM:150; RPM:70; SPP:2850; SPM:55, SWAPPED OUT 1 JT DP DP PIPE SCREEN GOT STUCK IN

Vis (s/qt): 70, Dens (lb/gal): 14.85, pH: 0.0

### 01/25/2017

Rig Name: H&P 602

Depth = 18,588.0 Progress = 0.0

06:00 WASH & REAM F/17,060' T/18,588' GPM:150; RPM:70; SPP:2850; SPM:55,  
08:00 CIRCULATE BOTTOMS UP ON CHOKE TO CLEAR GAS; BEGAN @ 165 GPM AND SAW A 5 BBL LOSS; SLOWED PUMP TO 135 GPM AND MAINTAINING 0 G/L; 2,530 PSI SPP; BTMS UP W/ 1,931 UNITS OF GAS AND 12.5 PPG CUT MUD; CIRCULATED OUT UNTIL BALANCED 14.8 PPG MUD IN AND OUT.  
11:30 BACKREAMING F/18,588'- T/16,504' @ 10 FT/MIN INCREASING PULL SPEED SLOWLY AS WELL ALLOWS NOT EXCEEDING 30 FT/MIN; 160 GPM; 80RPM; 2950 PSI SPP; TRQ 3734/4671 FT/LBS; PU 235; ROT 190; SO 125; AVG PULL SPEED ALLOWED 30 FT/MIN.  
15:30 CIRCULATE BOTTOMS UP TO CLEAR ALL CONNECTION GASSES FROM BACKREAMING; 1,400 UNITS GAS FOR 25 MINUTES; NO FLOW INCREASE; 0 BBLS PIT GAIN; 5/8' FLARE FOR 15 MINUTES.  
17:30 BACKREAMING F/16,504'- T/14,611' @ 10 FT/MIN INCREASING PULL SPEED SLOWLY AS WELL ALLOWS NOT EXCEEDING 30 FT/MIN; 160 GPM; 80RPM; 2950 PSI SPP; TRQ 3734/4671 FT/LBS; PU 235; ROT 190; SO 125; AVG PULL SPEED ALLOWED 30 FT/MIN.  
21:00 CIRCULATE BOTTOMS UP TO CLEAR ALL CONNECTION GASSES FROM BACKREAMING; 1,082 UNITS GAS FOR 5 MINUTES; NO FLOW INCREASE; 0 BBLS PIT GAIN; 0 FLARE  
22:30 BACKREAMING F/14,611'- T/11,653' @ 10 FT/MIN INCREASING PULL SPEED SLOWLY AS WELL ALLOWS NOT EXCEEDING 30 FT/MIN; 160 GPM; 80RPM; 2237 PSI SPP; TRQ 2160/2874 FT/LBS; PU 218; ROT 181; SO 151; AVG PULL SPEED ALLOWED 30 FT/MIN.  
03:00 CIRCULATE BOTTOMS UP TO CLEAR ALL CONNECTION GASSES FROM BACKREAMING; 273 UNITS GAS FOR 2 MINUTES; NO FLOW INCREASE; 0 BBLS PIT GAIN; 0 FLARE; MIX AND PUMP 50 BBLS OF 16.0 PPG HEAVY MUD AND SPOT @ 1,000'; SLUG PIPE W/35 BBLS OF 16.0 PPG SLUG TO DRY PIPE; FLOW CHECK WELL, WELL IS STATIC.

Vis (s/qt): 71, Dens (lb/gal): 14.80, pH: 0.0

### 01/26/2017

Rig Name: H&P 602

Depth = 18,588.0 Progress = 0.0

06:00 FINISH PUMPING SLUG, TOO H F/11,650' T/115' @ 80 FPM ; WELL IS TAKING PROPER FILL. L/D AGITATOR, CHECK FLOW WELL STATIC,  
15:00 L/D BHA DRAIN MOTOR & BREAK BIT, GRADE BIT @ 1-2-WT-WT-S-I-TD  
16:00 CLEAN OFF RIG FLOOR & PULL WEAR BUSHING  
17:00 PJSM W/ RIG CREW & CSG CREW; RIG UP CASING CREW TONGS, TORQUE TURN; GET ALL EQUIPMENT TO THE FLOOR; RIG UP CIRCULATING SWEDGE, LOW TQ VALVE & HOSES;  
19:00 PJSM W/ RIG CREW & CSG CREW, P/U SHOE ASSEMBLY CONSISTING OF FS, FC, WSS, PUP JOINT, ALL WEDGE 563 THREAD, M/U 1 JT 4 1/2" 13.50# HCP-110 WEDGE 563 CSG, TORQ TO 4200 FT/LB, M/U CIRC SWEDGE, PUMP THROUGH FE & CHECK FLOATS, GOOD TESTS, RUN 4 1/2" 13.50# HCP-110 WEDGE 563 CSG F/ SURFACE T/ 5300' @ 100 FT/MIN, HOLE DISPLACING PROPERLY; (TUBULAR SOLUTIONS ON LOCATION FOR TORQUE TURN & THREAD REP)  
02:00 M/U CIRC SWEDGE, CIRC FIRST 20 BBLS OF 16 # PILL OUT OF HOLE @ 150 GPM, CAPTURE IN TRIP TANK; CAME BACK @ 15.6 PPG  
02:30 CONTINUE RUNNING 4 1/2" 13.50# HCP-110 WEDGE 563 CSG F/ 5300' T/ 7879'  
05:00 REMOVE LONG BELLS; PU & MU LINER HANGER & RIG DOWN CASING CREW & TORQUE TURN;

Vis (s/qt): 76, Dens (lb/gal): 14.85, pH: 0.0

### 01/27/2017

Rig Name: H&P 602

Depth = 18,588.0 Progress = 0.0

06:00 FINISH RIGGING DOWN CASING CREW; BREAK APART THREAD REP SUBS; CLEAN OFF RIG FLOOR; PREP T/TIH WITH DP TO RUN 4.5" LINER TO BTM.  
07:00 TIH WITH DP TO RUN 4.5" LINER TO BTM. @ 40' PER MIN. F/8056' T/11,625', INSTALL ROTATING HEAD; FILL EVERY 15 STDS BREAK CIRC. AT SHOE; WELL GIVING PROPER DISPLACEMENT.

11:30 RIG SERVICE TOP DRIVE  
 12:00 CIRCULATE BTMS.UP @ SHOE MAX GAS 227 UNITS MUD WT CUT F/15.1 T/13.9,  
 119 GPM SPP:1250, FLOW CHECK 2.6 BBLS PER HR. WHILE SETTING IDLE.  
 13:30 TIH WITH DP TO RUN 4.5" LINER TO BTM.@ 40'PER MIN. F/11,625' T/13,526',  
 MONITORING WELL WITH TRIP TANK.FILLING EVERY 15 STDS. PULLED 5 MORE  
 STDS BEING 4.1 BBLS OVER DISPLACEMENT,  
 15:30 CIRCULATING GAS OUT THROUGH CHOKE & GAS BUSTER GPM:109 SPP:1150;  
 MAX GAS:424 UNITS SHUT PUMP OFF CHECK FLOW IN TRIP TANK WELL  
 FLOWING @ 12 BBL PER HOUR; CALLED PROJECT MANAGER DISCUSSED  
 TRIPPING ON IN THE HOLE  
 17:30 TIH WITH DP TO RUN 4.5" LINER TO BTM.@ 40'PER MIN. F/13,526' T/16577',  
 MONITORING WELL WITH TRIP TANK.FILLING EVERY 15 STDS.  
 21:30 CIRCULATING GAS OUT THROUGH CHOKE & GAS BUSTER GPM; 130 SPP;  
 1850; MAX GAS:1530 UNITS; FLARE 2-5' F/10 MIN 10-15' F/20 MIN;  
 00:00 WASHED & ROTATE 4" DP F/16,577' T/18,578' @ 40 FPM; 20 RPM 4-6K  
 TORQUE; 106 GPM 1000 SPP; HOLE DISPLACED PROPERLY; NO ABNORMAL  
 DRAG; LINER FLOAT COLLAR @ 18,574', TOL @ 10,699', PLACED 3 MARKER  
 JOINTS @ 18,072.1', 15,006.3', 10,750.3', PLACED 1 CENTRALIZER ON EVERY  
 JOINT F/ 11,709' T/ 10,750'  
 03:30 CIRCULATING GAS OUT THROUGH CHOKE & GAS BUSTER GPM; 130 SPP;  
 1850; MAX GAS:1380 UNITS; FLARE 2-5' F/10 MIN 10-15' F/20 MIN; START  
 RUNNING CENTRIFUGE @ 3:00 6-SEC QUART DIESEL & 10-SEC QUART WATER  
 TO CUT WT BACK TO 14.3  
 Vis (s/qt): 71, Dens (lb/gal): 14.75, pH: 0.0

### 01/28/2017

Rig Name: H&P 602

Depth = 18,588.0 Progress = 0.0

06:00 CIRCULATING @ 3-3.5 BBLS. P/M DROP MUD WT START RUNNING  
 CENTRIFUGE; 6-SEC QUART DIESEL & 10-SEC QUART WATER TO CUT WT  
 BACK F/ 14.6 T/ 14.3;  
 11:00 CIRCULATING @ 4 BBLS. P/M DROP MUD WT START RUNNING CENTRIFUGE;  
 6-SEC QUART DIESEL & 10-SEC QUART WATER TO CUT WT BACK F/ 14.5 T/  
 14.3;  
 17:00 PJSM WITH RIG CREW, LINER HANGER TOOL REP. R/U CEMENT HEAD WITH  
 X/O; DROP 1.25 BALL PUMP 28 GPM 430 PSI; PRESSURE UP ON BALL SEAT TO  
 1750 PSI SET HANGER; PRESSURED UP ON BALL PASS THREW BALL SEAT @  
 1955 PSI; DROPPED 1.5 BALL PUMPED DOWN @ 25 SPM & 600 PSI; PASSED  
 BALL THREW BALL SEAT @ 1800 PSI & RELEASED HANGER; PICK UP FREE  
 TRAVEL WAS 210K SLACK OFF FREE TRAVEL 194 K; SET 95K ON PACK OFF;  
 19:30 CIRCULATING BOTTOMS UP GAS OUT THROUGH CHOKE & GAS BUSTER GPM;  
 175 SPP; 2250; MAX GAS:1610 UNITS; FLARE 10-15' F/20 MIN;  
 21:00 PJSM ; SWITCH OVER TO HALLIBURTON, PRESSURE TEST LINES TO 7,000 PSI,  
 CEMENT 4.5" LINER AS FOLLOWS: MIX AND PUMP 30 BBLS OF 14.5 PPG  
 TUNED SPACER III, PUMPED 605 SX 132 BBLS VERSACEM CMT, 1.223 CU  
 FT/SK, 14.5 PPG, 5.56 GAL/SK MIX WATER, ADDITIVES: , MIXED AND PUMPED  
 AT 3 BPM, DROPPED WEATHERFORD DP WIPER PLUG, DISPLACED W/ 20 BBLS  
 MMCR, 87.3 BBLS OF 2% KCL (SUBSTITUTE) OVER FRESH WATER MIXED ON  
 THE FLY, 15 BBLS OF 14.5 PPG TUNED SPACER III, 97.2 BBLS OF OBM FROM  
 PITS, BUMPED PLUG ON TIME, FINAL RATE WAS 2.0 BPM @ 1,481 PSI,  
 PRESSURED UP TO 1,902 PSI, HELD FOR 5 MINUTE, OPEN LINE BLED BACK 1.5  
 BBLS FROM LINES, FLOATS HELD, PRESSURED BACK UP TO 2,480 PSI OPENED  
 WET SHOE, WET SHOE W/3 BBLS; FINAL PUMP IN PRESSURE 1,100 PSI, SHUT  
 DOWN AND HELD 1100 PSI, BLED OFF PRESSURE TO ZERO, FLOWED BACK 0.5  
 BBLS, FLOATS HOLDING, WELL STATIC.  
 01:00 SET PACK OFF; PRESSURE TEST PACK OFF 3,000 PSI FOR 5 MIN( TEST GOOD);  
 PRESSURE UP TO 500 PSI THEN STING OUT THEN CIRCULATING OUT CEMENT  
 @ 3 BPM 1200 PSI; INCREASED TO 5 BPM @ 2600 PSI; INCREASED TO 6 BPM  
 3200 PSI; CIRCULATED 40 BBLS CEMENT TO SURFACE; NO RICIPRACATION  
 OR ROTATION; CIRCULATED 4X BOTTOMS UP;  
 03:30 DISPLACE OBM WITH 334 BBLS OF 2% KCL WATER;  
 05:00 PERFORMED NEGATIVE TEST ON LINER HANGER PACKER, MONITOR WELL ON  
 TRIP TANK FOR 30 MIN FOR FLOW, NO FLOW WELL STATIC, GOOD NEGATIVE  
 TEST  
 05:30 L/D BAKER CEMENT HEAD & RIG DOWN CEMENTERS;  
 Vis (s/qt): 72, Dens (lb/gal): 14.30, pH: 0.0

### 01/29/2017

Rig Name: H&P 602

Depth = 18,588.0 Progress = 0.0

06:00 RIG DOWN BAKER CEMENT HEAD & RIG DOWN CEMENTERS;  
 07:30 PULL ROTATING HEAD  
 08:00 CLEAN OFF FLOOR; INSTALL BUMP STOP & L/D 4"DP F/10,654'  
 T/5619',TRANSFER OBM TO OIL TANKS,(CISCO ARRIVED ON LOCATION TO  
 HAUL TUBALARS & MISC. W/15 HAUL TRUCKS & 1 FORKLIFT)  
 11:30 RIG SERVICE TOP DRIVE

12:00 L/D 4"DP F/5619' T/SURFACE', CLEAN PITS, CISCO HAULING TUBALARS &  
MISC. TO UL 21 YELLOWTAIL 1H,  
17:30 LAY DOWN BAKER HANGER TOOL & X-O  
18:00 FLUSH OBM OUT OF MUD PUMPS,MUD LINES, CHOKE MANIFOLD &  
SEPARATOR;  
20:30 TIH OPEN ENDED 82 STDS F/SURFACE T/7915; CLEANING PITS  
23:00 LAY DOWN DRILL STRING F/7915' T/SURFACE FILLING HOLE W/ 2% KCL;  
CLEANING OPEN TOPS;  
05:00 RIG DOWN KATCH KAN & NIPPLE DOWN BOP

**01/30/2017**

Rig Name: H&P 602

Depth = 18,588.0 Progress = 0.0

06:00 NIPPLE DOWN BOP & CLEANING PITS; INSTALL WELLHEAD & TEST 5000 PSI  
F/10 MIN, INSTALL FRC VALVE,(WASHING RIG); A&P MOVED CAMP; CISCO  
TRUCKING ON LOCATION @ 12:00 & MOVING 4" DRILL PIPE & LOADING OUT  
RIG; INSTALLED FRAC VALVE, REMOVED ROTATING HEAD & ORBIT VALVE OFF  
BOP; RELEASED H&P RIG 602 @ 17:00 HRS.