

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

**02/02/2017**

Rig Name:

14:30 Inspected location , checked road crossing for water transfer

**02/03/2017**

Rig Name:

10:00 PJSM

10:30 Install 1502 adapter flanges on intermediate and both production gate valves on wellhead , RU pump truck to test intermediate , pressured up to 600 psi , broke back to 350 psi , pumped additional 10 bbls @ 350 psi , isip 300 psi , held solid , bled off psi to static , pump on casing to 450 psi @ 2.5 bpm , pumped 10 bbls , psi would not increase , ISIP 350 psi , bled psi to static , RD pump

17:00 RU and test frac stack , tested 250 psi low and 12,000 psi high , had transport pull cellar , welder capped mouse hole secured well , SDFN

**02/04/2017**

Rig Name:

08:00 PJSM

08:30 RU logging truck , crane , and test pump , RU flowback choke manifold , crane broke down during RU , had another crane sent to location. Activity not stopped due to crane break down.

14:30 RU crane , PU 3.3/4 gauge ring and junk basket bha , test lube , TIH , pass thru top of liner @ 10,699' with no issues , TIH to 11,150' , TOO H , oil based mud in junk basket , well secure SDFN

**02/05/2017**

Rig Name:

08:00 PJSM

08:30 PU USIT LOGGING BHA , TEST lube , OWU RIH TAG AT 10,230' UNABLE TO WORK PAST , RUN USIT LOG FROM 10,210' TO SURFACE w/ ETOC AT 5300' , RU Standard safety sensors , RTO trailers , and started loading tanks with fresh water w/ bio and KCL

16:00 OOH , HAD DRILLING MUD ON BHA , SWI RDMO SCHLUMBERGER & KLX CRANE SDFN

**02/06/2017**

Rig Name:

08:00 PJSM

08:30 MIRU WIRELINE & PUMPS

10:30 TEST LINES 8K , START PUMPING 1.5 BPM WELL BROKE AT 5400 PSI W 10 BBLS GONE PUMPED 5 BBLS PRESSURE LEVELED OUT AT 4950 , INCREASE RT AS FOLLOWS: 2.5 BPM-5100 // 3BPM-5300 // 4BPM-5500 // 6BPM-5800 LEVELED OUT AT 5.6 BPM- 5750 PUMPED A TOTAL OF 60 BBLS DISPLACING 50 BBLS ISIP 5000 // 5MIN 4850 PSI, RELEASE PRESSURE TO 0 PSI WELL STATIC.

12:30 MU 4.65" GR & JB BHA TEST LUBE TO 7500 PSI RIH TAG TOL AT 10,699'WITH NO ISSUES TOO H JUNK BASKIT CLEAN. LD BHA SWI WILL RUN USIT LOG IN AM.

16:00 MOVE VALVE ON INTERMEDIATE CSG HEAD

**02/07/2017**

Rig Name:

08:00 PJSM

08:30 MIRU SCHLUMBERGER REHEAD MU USIT TOOL

10:30 RIH TO 6550' PRESSURE UP CSG TO 450 PSI, RUN USIT LOG FROM 6550' TO 5950', 4475' TO 3850', 3150' TO 2550' & 400' TO SURFACE. RELEASE PRESSURE RIH TO 10,900' RUN USIT LOG TO 10,000 HOLDING 450 PSI. RELEASE PRESSURE POOH SWI RDMOL SCHLUMBERGER SDFN

**02/08/2017**

Rig Name:

08:00 PJSM

08:30 Well psi zero , pumped and displaced acid , pumped 10 bbls broke 5400psi , start acid 2.5 bpm @ 5000 psi , 4 bpm 5400 psi , 5 bpm 5500 psi , 5.5 bpm 5800 psi , final rate 6 bpm 5500 psi , ISIP 4600 psi , 5 min 4563 psi , 10 min 4539 psi , 15 min 4530 psi , bled well off to zero psi , well static , total bbls pumped 600 , dropped standing valve , tested casing 6000 psi , Tested good , had water transport pull fluid out of cellar

14:00 PU WL and test lube to 7500 psi , TIH with WL and retrieving tool , latched up , weighing 1900# , pulled 2k over released and TOO H , OOH with standing valve , RDMO WL , crane and acid pumps , SDFN

**02/09/2017**

Rig Name:

08:00 PJSM

08:30 RU torque trailer and knuckle boom truck , RD frac stack leaving bottom master valve w/ blind flange , RDMO torque trailer and knuckle boom , SDFN

## **02/10/2017**

Rig Name:

08:00 PJSM

08:30 CLEAN UP IN & AROUND CELLAR, PULL UP BRASS GROUND RODS & CLEAN UP WHERE MUD PUMPS SET SDFN

## **02/11/2017**

Rig Name: Energy Service Company #303

08:00 PJSM

08:30 MIRU WSU , NU BOP , bird bath , function test BOP , Spot and RU skid mount pump , spot catwalk , rack and count tubing , 370 jnts on location , tally top row , spot light plants , ( note : was ready to run pipe at 14:00 , baker tools not on location )

14:00 Down time waiting on Baker BHA

20:00 PJSM Make up BOTTOM MILL, XO'S, FLUTTED TOP DRESS MILL, XO'S & BLAST JOINT BHA RIH PICKING UP 330 JTS 2 3/8 4.7 PPF L80 TBG

01:45 RU 2.5 SWIVEL ON JT # 331 BREAK CIRCULATION CONVENTIONAL

02:45 EASE 5 3/16" OD BOTTOM MILL INTO LINERTOP TORQUE INCREASED 100# POLISH RECEPAGLE UNTIL TORQUE DROPS 100#. PULL OUT OF LINER TOP, CWC REVERSE CIRCULATING 200 BBLS WATER WITH BOTH MILL OUT OF LINER

## **02/12/2017**

Rig Name: Energy Service Company #303

06:00 PJSM

06:30 Continue to TOO H with tubing and liner dressing tools , lay down tools and inspect , good indications on tool wear for good clean dressing of liner

09:30 PU liner test tools , TIH tagged on jnt 332 @ 10,699' , string weight 50k , slacked off 20k , LD jnt 332 , test on jnt 331 , 2' off tag , closed pipe rams on bop , pressure up to 2k for 5 min , tested good , pressured up to 3k for 10 min , tested good , Tubing static - no flow , bleed off pressure to zero psi , opened pipe rams on bop

16:00 TOO H laying down till shift change

18:00 PJSM, Cont ooh LD TBG & BHA

21:00 SWI ND BOP & NU capping flang SDFN

## **02/13/2017**

Rig Name: Energy Service Company #303

08:00 PJSM

08:30 Release and haul off work string , BOP , birdbath and pit , continue prep for frac , SDFN

## **02/14/2017**

Rig Name: Energy Service Company #303

08:00 PJSM

08:30 Remove 7-1/16" 15M lower master valve , remove 11" X 7-1/16" TBG head , remove 11" 10M x 13-5/8" 5M DSPA , NU 13-5/8" 5M x 11" 10M casing spool , NU 11" 10M BOP , test bop to 4500 psi , tested good , bled off pressure to zero , lay down rig floor , pick up and clean location , well secure , SDFN

## **02/15/2017**

Rig Name: Energy Service Company #303

08:00 PJSM

08:30 RU tongs and torque turn , elevators and slips for 5.1/2 casing , rack and tally casing , set frac tanks

12:30 Had to separate casing , had 104 jnts of wrong casing delivered

14:30 PU seal assembly , TIH

18:00 PJSM CONTINUE IN HOLE PU 5 1/2" CSG (242 IN HOLE)

02:00 DISPLACE ANNULUS W/ 80 BBLS PKR FLUID 3 BPM @ 1500 PSI, space out 242 jts 5 1/2" 23 ppf w/ liberty thread, 14.73 sub, 9.98 sub, 5.56 sub, 3.00 sub, slick jt, & 5.66 double pin & hanger. SWI waiting on 8RD lift sub to land tbg

03:45 Waiting on 5 1/2" 8rd lift sub to land csg.

## **02/16/2017**

Rig Name: Energy Service Company #303

06:00 PJSM

06:30 Had 5.1/2 - 10' sub threaded and delivered to location

10:30 Landed well , string weight 240k up , 220k down , landed 50k , tested seal to 1000 psi for 5 min , tested to 3200 psi for 10 min , tested good

12:30 RDMO casing crew , ND BOP , NU tubing head 11" 10M x 7.1/16 15M , NU lower master valve 7.1/16 15k , RDMO WSU

15:00 MIRU toraue and test . NU frac stack and test 12.500 psi high and 250 psi low .

RDMO torque and test , RDMO skid mount pump , RDMO catwalk and pipe racks , 20 jnts casing and 4 pup subs picked up and back hauled , well secure , SDFN

## 02/17/2017

Rig Name: Energy Service Company #303

08:00 PJSM  
08:30 RU choke manifolds and flowlines , spot frac tanks , off load 195 bbls fresh water in each of the two acid tanks  
14:30 Frac Tech , Fesco WL MIRU  
18:00 PJSM  
18:30 Cont MIRU Frac Tech frac equipment , FESCO WL function test BOP & KLX Pressure release valve

## 02/18/2017

Rig Name: Energy Service Company #303

06:00 PJSM  
06:30 Finish RU frac fleet & other associated equipment.  
11:30 RU CER test pump, pressure up on intermediate string (5 1/2" x 7") to 3,500 psi. Prime up pumps, pressure test lines and frac stack to 12,500 psi w/ a good test. Set treating line pop @ 10,989 psi, set intermediate pop-off @ 6,183 psi. Perform bucket test.  
15:00 Open well w/ 28 psi, flush lateral w/ 135 bbls of treated water. Stage up to 14 bpm @ 6700 psi. SWI  
16:00 PU 10K lubricator & test to 9,500 psi. Open & equalize well, RIH w/ stage 1 plug & perf assy. @ 1700', the guns were not recognized by control fire switch. POOH w/ gun assy. (taking all safety precautions and staying out of red zone due to live guns). LD gun assy and examine the issue. Switch out gamma ray tool, PU gun assy and RIH.  
18:00 PJSM  
18:30 Stage 1 plug & perf. P/U 4 1/2" Obsidian Bridge Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 3 Cluster Perf Assy w/ gamma ray & CCL. Test Lubricator to 9,500 PSI. Open Well SICP 4200 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9.0 bpm W/6020 psi, 325 FPM, set down at 17,260' pull up hole 100' restart pumps RIH 320 FPM pumping 9 bpm @ 6020 psi, Spot CBP @ 18,563'. 4800 psi SIP, Set CBP @ 18,563', SICP 4800 psi PU & Fire Gun #1 @ 18,561'-18,562', 11 Shots.PRESSURE FELL TO 4160 PSI, Kick in pumps 2bpm at 5200 psi P/U and Fire Gun #2 @ 18,501'- 18,502', 10 Shots. P/U & Fire Gun #3 @ 18,451'- 18,452', 9 Shots. SD pumps (All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)pull up hole 2' test csg 11,000 psi good test , POOH running gamma ray CCL log to 10,400', POOH LD Baker 10 setting tool & 3 1/8" - 3 Cluster spent Perf Assy & logging tIs. Verified all shots fired , Max Rate 9.4 bbm , Max Pressure 6020 PSI , Total bbl pumped 411 bbl.  
00:30 Stage 1 Frac: Open Well SICP 4720 psi. Pump Stage #1. Pumped 3,000 gals 15% HCl 12.4 BPM AT 7400 PSI, pumped 381,216 gals of Slickwater, w/ 73,000 lbs 100 mesh, 166,100 lbs 40/70 White, Max psi: 10,453 psi, Avg psi: 8,841 psi, Max rate: 68.7 bpm, Avg rate: 64.7 bpm, 0.88 Frac. Gradient. Approx load to rec 9075 bbls. ISIP: 5122 psi, 5 min: 4862 psi, 10 min: 4817 psi, 15 min: 4802 psi, 5 1/2" X 7" 3,500 psi. Frac pumped as designed.  
03:30 RIH W/ STG 2 PLUG & GUNS

## 02/19/2017

Rig Name: Energy Service Company #303

06:00 PJSM  
06:30 Stage #2 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,742 psi. RIH & get on depth w/ MJ @ 10,760'-10,782'. RIH & Pump Down @ 12 bpm W/5,500 psi, 260 FPM, Spot frac plug @ 18,427'. 4,632 psi SIP, Set frac plug @ 18,427', PU & Fire Gun #1 @ 18,401'-18,402', 11 Shots. P/U and Fire Gun #2 @ 18,351'- 18,352', 10 Shots. P/U & Fire Gun #3 @ 18,301'- 18,302', 10 Shots. P/U & Fire Gun #4 @ 18,245'- 18,246', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, LD w/ Baker 10 setting tool & 3 1/8" - X Cluster spent Perf Assy . Verified all shots fired , Max Rate 12 bpm , Max Pressure 5,869 PSI , Total bbl pumped 249 bbl. Drop 2.125" Obsidian Frac Ball.  
08:30 Resource water transfer pump broke down, repair x-over on pump & other issues in line, back up & running @ 15:30.  
15:30 Stage 2 Frac: Open Well SICP 5064 psi. Pump Stage #2. Pumped 4000 gals 15% HCl, pumped 447,846 gals of Slickwater, w/ 97,060 lbs 100 mesh, 220,120 lbs 40/70 White, Max psi: 10,381 psi, Avg psi: 9423 psi, Max rate: 86.7 bpm, Avg rate: 80.5 bpm, .86 Frac. Gradient. Approx load to rec: 10,903 bbls. ISIP: 4804 psi, 5 min: 4646 psi, 10 min: 4602 psi, 15 min: 4573 psi, 5 1/2" x 7" 3500 psi. Frac pumped as designed. Breakdown PSI- 6,050 , initial ISIP- 5,772  
18:30 Stage #3 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50#

Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,700 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm W/4800 psi, 360 FPM, Spot frac plug @ 18,227'. 4,600 psi SIP, Set frac plug @ 18,227', PU & Fire Gun #1 @ 18,201'-18,202', 11 Shots. P/U and Fire Gun #2 @ 18,151'- 18,152', 10 Shots. P/U & Fire Gun #3 @ 18,101'- 18,102', 10 Shots. P/U & Fire Gun #4 @ 18,051'- 18,052', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9.5 bpm , Max Pressure 4991 PSI , Total bbl pumped 195 bbl. Drop 2.125" Obsidian Frac Ball.

21:30 Stage 3 Frac: Open Well SICP 4750 psi. Pump Stage #3. Pumped 4000 gals 15% HCl, pumped 486,654 gals of Slickwater, w/ 96,540 lbs 100 mesh, 220,100 lbs 40/70 White, Max psi: 10,015 psi, Avg psi: 8797 psi, Max rate: 79.1 bpm, Avg rate: 71.9 bpm, .87 Frac. Gradient. Approx load to rec: 11,798 bbls. ISIP: 4982 psi, 5 min: 4738 psi, 10 min: 4687 psi, 15 min: 4657 psi, 5 1/2" x 7" 3500 psi. Frac pumped as designed. Breakdown PSI- 5,832 , initial ISIP- 5,335

02:15 Stage #4 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,750 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 12 bpm @ 5312 psi, 380 FPM, Spot frac plug @ 18,027'. 4,540 psi SIP, Set frac plug @ 18,027', PU & Fire Gun #1 @ 18,001'-18,002', 11 Shots. P/U and Fire Gun #2 @ 17,951'- 17,952', 10 Shots. P/U & Fire Gun #3 @ 17,901'- 17,902', 10 Shots. P/U & Fire Gun #4 @ 17,851'- 17,852', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - X Cluster spent Perf Assy . Verified all shots fired , Max Rate 12.5 bpm , Max Pressure 5312 PSI , Total bbl pumped 217 bbl. Drop 2.125" Obsidian Frac Ball.

05:15 Waiting on Frac Tech pumps.

## 02/20/2017

Rig Name: Energy Service Company #303

06:00 PJSM

06:30 Wait on Frac pump repairs & additional pumps to AOL. First pump AOL @ 16:00. MIRU pump, prime up, repair minor leaks.

18:00 PJSM w/ night crew

18:30 Test lines & pumps found packing leaks on new pump release pressure repack new pump,

20:30 Retest pumps & lines repack & replace valves & seats in 12 plungers (5 pumps). & replace hyd valve on flow cross & test to 9500 psi w/ test pump.

04:00 Prime pumps check for leaks, Test pumps & lines 12,000 , Start Stg 4 frac.

## 02/21/2017

Rig Name: Energy Service Company #303

06:00 PJSM

06:30 Stage 4 Frac: Open Well SICP 4,750 psi. Pump Stage #4. Pumped 3,000 gals 15% HCl, pumped 428,736 gals of Slickwater, w/ 96,980 lbs 100 mesh, 220,400 lbs 40/70 White, Max psi: 10,097 psi, Avg psi: 9,595 psi, Max rate: 81 bpm, Avg rate: 78.6 bpm, .87 Frac. Gradient. Approx load to rec: 10,208 bbls. ISIP: 4,953 psi, 5 min: 4,768 psi, 10 min: 4,723 psi, 15 min: 4,697 psi, 5 1/2" x 7" 3500 psi. Frac pumped as designed. Breakdown PSI- 7,211 , initial ISIP- 6,093

07:30 Stage #5 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,560 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,660 psi, 360 FPM, Spot frac plug @ 17,827'. 4,950 psi SIP, Set frac plug @ 17,827', PU & Fire Gun #1 @ 17,801'-17,802', 11 Shots. P/U and Fire Gun #2 @ 17,751'- 17,752', 10 Shots. P/U & Fire Gun #3 @ 17,701'- 17,702', 10 Shots. P/U & Fire Gun #4 @ 17,651'- 17,652', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5,783 PSI , Total bbl pumped 168 bbl. Drop 2.125" Obsidian Frac Ball.

10:30 Repair pump leaks & replace 12 sets of packing. Prime up, pressure test & prepare for stage 5 frac

13:30 Stage 5 Frac: Open Well SICP 4,373 psi. Pump Stage #5. Pumped 3,000 gals 15% HCl, pumped 425,418 gals of Slickwater, w/ 97,780 lbs 100 mesh, 219,440 lbs 40/70 White, Max psi: 10,183 psi, Avg psi: 9,401 psi, Max rate: 80.5 bpm, Avg rate: 76.7 bpm, .88 Frac. Gradient. Approx load to rec: 10,129 bbls. ISIP: 5,131 psi, 5 min: 4,817 psi, 10 min: 4,729 psi, 15 min: 4,689 psi, 5 1/2" x 7" 3500 psi. Frac pumped as designed. Breakdown PSI- 6,324 , initial ISIP- 5,605.

16:30 Stage #6 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,640 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,290 psi, 365 FPM, Spot frac plug @ 17,620'. 4,950 psi SIP, Set frac plug @ 17,620', PU & Fire Gun #1 @

17,601'-17,602', 11 Shots. P/U and Fire Gun #2 @ 17,751'- 17,752', 10 Shots. P/U & Fire Gun #3 @ 17,501'- 17,502', 10 Shots. P/U & Fire Gun #4 @ 17,451'- 17,452', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5,400 PSI , Total bbl pumped 191 bbl. Grease Frac Stack. Drop 2.125" Obsidian Frac Ball. Shift Change @ 18:00 PJSM with all Venders.

18:30 Grease Frac Stack & transfer Acid. Prime up & PSI Test for stage 6 Frac.

21:00 Stage 6 Frac : Open Well SICP 4,400 psi. Pump Stage #6. Pumped 2,000 gals 15% HCl, pumped 418,992 gals of Slickwater, w/ 97,020 lbs 100 mesh, 220,000 lbs 40/70 White, Max psi: 10,589 psi, Avg psi: 9,628 psi, Max rate: 82.3 bpm, Avg rate: 77.5 bpm, .87 Frac. Gradient. Approx load to rec: 9,976 bbls. ISIP: 4,983 psi, 5 min: 4,853 psi, 10 min: 4,810 psi, 15 min: 4,782 psi, 5 1/2" x 7" 3500 psi. Frac pumped as designed. Breakdown PSI- 7,343 , initial ISIP- 5,130.

23:30 Stage #7 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,510 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 6,080 psi, 347 FPM, Spot frac plug @ 17,427'. 5,100 psi SIP, Set frac plug @ 17,427', PU & Fire Gun #1 @ 17,401'-17,402', 11 Shots. P/U and Fire Gun #2 @ 17,351'- 17,352', 10 Shots. P/U & Fire Gun #3 @ 17,301'- 17,302', 10 Shots. P/U & Fire Gun #4 @ 17,254'- 17,255', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 6,080 PSI , Total bbl pumped 189 bbl. Drop 2.125" Obsidian Frac Ball.

03:00 Stage 7 Frac : Open Well SICP 4,687 psi. Pump Stage #7. Pumped 2,000 gals 15% HCl, pumped 421,260 gals of Slickwater, w/ 97,260 lbs 100 mesh, 220,180 lbs 40/70 White, Max psi: 10,231 psi, Avg psi: 9,765 psi, Max rate: 81.3 bpm, Avg rate: 79.8 bpm, .89 Frac. Gradient. Approx load to rec: 10,030 bbls. ISIP: 5,152 psi, 5 min: 4,902 psi, 10 min: 4,845 psi, 15 min: 4,813 psi, 5 1/2" x 7" 3500 psi. Frac pumped as designed. Breakdown PSI- 7,396 , initial ISIP- 5,234.

## 02/22/2017

Rig Name: Energy Service Company #303

06:00 PJSM

06:30 Stage #8 Pump Down. P/U 4 1/2" Obsidian Bridge Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,680 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,400 psi, 340 FPM, Spot CBP @ 17,227'. 5,150 psi SIP, Set CBP @ 17,227', test to 6,000 psi & hold for 5 min. PU & Fire Gun #1 @ 17,201'-17,202', 11 Shots. P/U and Fire Gun #2 @ 17,161'- 17,162', 10 Shots. P/U & Fire Gun #3 @ 17,111'- 17,112', 10 Shots. P/U & Fire Gun #4 @ 17,051'- 17,052', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5,100 PSI , Total bbl pumped 167 bbl.

08:30 Repair leak on frac manifold, water transfer replaced fitting on a transfer pump & replaced a section of busted line. Up & running again @ 13:00.

13:00 Stage 8 Frac : Open Well SICP 4,526 psi. Pump Stage #8. Pumped 2,000 gals 15% HCl, pumped 420,420 gals of Slickwater, w/ 97,980 lbs 100 mesh, 220,100 lbs 40/70 White, Max psi: 10,236 psi, Avg psi: 9,542 psi, Max rate: 79.4 bpm, Avg rate: 76.3 bpm, .87 Frac. Gradient. Approx load to rec: 10,010 bbls. ISIP: 4,993 psi, 5 min: 4,759 psi, 10 min: 4,716 psi, 15 min: 4,686 psi, 5 1/2" x 7" 3,500 psi. Frac pumped as designed. Breakdown PSI- 6,613 , initial ISIP- 5,288.

15:30 Stage #9 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,675 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,640 psi, 350 FPM, Spot frac plug @ 17,027'. 5,050 psi SIP, Set frac plug @ 17,027', PU & Fire Gun #1 @ 17,001'-17,002', 11 Shots. P/U and Fire Gun #2 @ 16,951'- 16,952', 10 Shots. P/U & Fire Gun #3 @ 16,901'- 16,902', 10 Shots. P/U & Fire Gun #4 @ 16,851'- 16,852', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5,900 PSI , Total bbl pumped 164 bbl. Drop 2.125" Obsidian Frac Ball.

17:30 Shift Change PJSM with all Venders. Stage 9 Wireline OOH all guns fired. FTS Prime up & PSI Test.

18:00 Stage 9 Frac : Open Well SICP 4,707 psi. Pump Stage #9. Pumped 2,000 gals 15% HCl, pumped 413,154 gals of Slickwater, w/ 97,160 lbs 100 mesh, 220,240 lbs 40/70 White, Max psi: 10,432 psi, Avg psi: 8,898 psi, Max rate: 80.2 bpm, Avg rate: 73.2 bpm, .87 Frac. Gradient. Approx load to rec: 9,837 bbls. ISIP: 5,026 psi, 5 min: 4,825 psi, 10 min: 4,755 psi, 15 min: 4,715 psi, 5 1/2" x 7" 3,500 psi. Did achieve desired rate. Breakdown PSI- 6,902 , initial ISIP- 5,956.

21:30 Stage #10 Pump Down. P/U 4 ½" Obsidian Ball Drop Frac Plug for 4 ½, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,650 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,152 psi, 367 FPM, Spot frac plug @ 16,803'. 4,670 psi SIP, Set frac plug @ 16,803', PU & Fire Gun #1 @ 16,801'-16,802', 11 Shots. P/U and Fire Gun #2 @ 16,751'- 16,752', 10 Shots. P/U & Fire Gun #3 @ 16,701'- 16,702', 10 Shots. P/U & Fire Gun #4 @ 16,651'- 16,652', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5,338 PSI , Total bbl pumped 158 bbl. Drop 2.125" Obsidian Frac Ball. Wait on FTS to replace pump.

23:30 Stage 10 Frac : Open Well SICP 4537 psi. Pump Stage #10. Pumped 2,000 gals 15% HCl, pumped 418,740 gals of Slickwater, w/ 97,160 lbs 100 mesh, 220,560 lbs 40/70 White, Max psi: 10,484 psi, Avg psi: 9167 psi, Max rate: 81.2 bpm, Avg rate: 77.8 bpm, .89 Frac. Gradient. Approx load to rec: 9970 bbls. ISIP: 5183 psi, 5 min: 4883 psi, 10 min: 4817 psi, 15 min: 4769 psi, 5 1/2" x 7" 3,500 psi. Frac pumped as designed. Breakdown PSI- 6827 , initial ISIP- 5194.

03:00 Stage #11 Pump Down. P/U 4 ½" Obsidian Ball Drop Frac Plug for 4 ½, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4695 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5050 psi, 367 FPM, Spot frac plug @ 16,599'. 4760 psi SIP, Set frac plug @ 16,599', PU & Fire Gun #1 @ 16,601'-16,602', 11 Shots. P/U and Fire Gun #2 @ 16,561'-16,562', 10 Shots. P/U & Fire Gun #3 @ 16,504'-16,505', 10 Shots. P/U & Fire Gun #4 @ 16,451'-16,452', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5253 PSI , Total bbl pumped 150 bbl. Drop 2.125" Obsidian Frac Ball.

05:30 Grease Frac Stack.

## 02/23/2017

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06:00 PJSM

06:30 Stage 11 Frac : Open Well SICP 4,344 psi. Pump Stage #11. Pumped 2,000 gals 15% HCl, pumped 420,126 gals of Slickwater, w/ 97,120 lbs 100 mesh, 220,600 lbs 40/70 White, Max psi: 10,832 psi, Avg psi: 9,415 psi, Max rate: 81.5 bpm, Avg rate: 79.6 bpm, .87 Frac. Gradient. Approx load to rec: 10,003 bbls. ISIP: 4,973 psi, 5 min: 4,815 psi, 10 min: 4,768 psi, 15 min: 4,738 psi, 5 1/2" x 7" 3,500 psi. Frac pumped as designed. Breakdown PSI- 6,916 , initial ISIP- 5,267.

10:00 Stage #12 Pump Down. P/U 4 ½" Obsidian Ball Drop Frac Plug for 4 ½, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,680 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,740 psi, 350 FPM, Spot frac plug @ 16,432'. 4,950 psi SIP, Set frac plug @ 16,432', PU & Fire Gun #1 @ 16,402'-16,403', 11 Shots. P/U and Fire Gun #2 @ 16,351'- 16,352', 10 Shots. P/U & Fire Gun #3 @ 16,308'- 16,309', 10 Shots. P/U & Fire Gun #4 @ 16,251'- 16,252', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5,958 PSI , Total bbl pumped 115 bbl. Drop 2.125" Obsidian Frac Ball.

12:30 Stage 12 Frac : Open Well SICP 4,486 psi. Pump Stage #12. Pumped 2,000 gals 15% HCl, pumped 411,138 gals of Slickwater, w/ 97,600 lbs 100 mesh, 220,120 lbs 40/70 White, Max psi: 10,380 psi, Avg psi: 9,387 psi, Max rate: 81.4 bpm, Avg rate: 78.1 bpm, .88 Frac. Gradient. Approx load to rec: 9,789 bbls. ISIP: 5,120 psi, 5 min: 4,745 psi, 10 min: 4,674 psi, 15 min: 4,636 psi, 5 1/2" x 7" 3,500 psi. Frac pumped as designed. Breakdown PSI- 7,008.

16:00 Stage #13 Pump Down. P/U 4 ½" Obsidian Ball Drop Frac Plug for 4 ½, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,610 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,420 psi, 350 FPM, Spot frac plug @ 16,227'. 4,710 psi SIP, Set frac plug @ 16,227', PU & Fire Gun #1 @ 16,201'-16,202', 11 Shots. P/U and Fire Gun #2 @ 16,151'- 16,152', 10 Shots. P/U & Fire Gun #3 @ 16,101'- 16,102', 10 Shots. P/U & Fire Gun #4 @ 16,051'- 16,052', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5,517 PSI , Total bbl pumped 145 bbl. Drop 2.125" Obsidian Frac Ball.

18:00 Shift Change. PJSM with all Venders on location. Stage 13 Frac : Open Well SICP 4428 psi. Pump Stage #13. Pumped 2,000 gals 15% HCl, pumped 418,110 gals of Slickwater, w/ 96,520 lbs 100 mesh, 219,180 lbs 40/70 White, Max psi: 10732 psi, Avg psi: 9209 psi, Max rate: 80.1 bpm, Avg rate: 78.3 bpm, .88 Frac. Gradient. Approx load to rec: 9955 bbls. ISIP:5046 psi, 5 min: 4817 psi, 10 min: 4741 psi, 15 min: 4707 psi, 5 1/2" x 7" 3246/4357 psi. Frac

pumped as designed. Breakdown PSI- 6769.

21:30 Stage #14 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4650 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 4310 psi, 354 FPM, Spot frac plug @ 16,027'. 4750 psi SIP, Set frac plug @ 16,027', PU & Fire Gun #1 @ 16001'- 16002, 11 Shots. P/U and Fire Gun #2 @ 15956'-15957', 10 Shots. P/U & Fire Gun #3 @ 15891'-15892', 10 Shots. P/U & Fire Gun #4 @ 15851'-15852', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5599 PSI , Total bbl pumped 132 bbl. Drop 2.125" Obsidian Frac Ball.

00:30 Stage 14 Frac : Open Well SICP 4369 psi. Pump Stage #14. Pumped 2,000 gals 15% HCl, pumped 387,870 gals of Slickwater, w/ 97,020 lbs 100 mesh, 220,040 lbs 40/70 White, Max psi: 10,489 psi, Avg psi: 9,235 psi, Max rate: 79.3 bpm, Avg rate: 77.4 bpm, .90 Frac. Gradient. Approx load to rec: 9235 bbls. ISIP:5336 psi, 5 min: 4920 psi, 10 min: 4832 psi, 15 min: 4772 psi, 5 1/2" x 7" 3508/4456 psi. Frac pumped as designed. Breakdown PSI- 6702

03:00 Stage #15 Pump Down. P/U 4 1/2" Obsidian Bridge Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4675 psi. RIH & get on depth w/ MJ @ 10750'-10772. RIH & Pump Down @ 9 bpm @ 5340 psi, 359 FPM, Spot CBP @ 15830'. 4675 psi SIP, Set CBP @ 15830', test to 6076 psi & hold for 5 min. PU & Fire Gun #1 @ 15801'-15802', 11 Shots. P/U and Fire Gun #2 @ 15751'-15752', 10 Shots. P/U & Fire Gun #3 @ 15703'-15704', 10 Shots. P/U & Fire Gun #4 @ 15651'-15652', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 6076 PSI , Total bbl pumped 124 bbl.

05:30 Wait on sand & chemicals to unload.

## 02/24/2017

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06:00 PJSM

06:30 Grease frac stack, w/o 2 loads of 100 mesh sand to get unloaded, & replace packing on 1 pump.

07:30 Stage 15 Frac : Open Well SICP 3,925 psi. Pump Stage #15. Pumped 2,000 gals 15% HCl, pumped 400,596 gals of Slickwater, w/ 97,220 lbs 100 mesh, 220,340 lbs 40/70 White, Max psi: 10,795 psi, Avg psi: 9,598 psi, Max rate: 80.5 bpm, Avg rate: 79.4 bpm, .89 Frac. Gradient. Approx load to rec: 9,538 bbls. ISIP: 5,172 psi, 5 min: 4,800 psi, 10 min: 4,739 psi, 15 min: 4,706 psi, 5 1/2" x 7" beginning PSI 3,427 Max PSI 4,184. Frac pumped as designed. Breakdown PSI- 6,996

10:00 Stage #16 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,690 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,550 psi, 360 FPM, Spot frac plug @ 15,627'. 4,900 psi SIP, Set frac plug @ 15,627', PU & Fire Gun #1 @ 15,601'- 15,602, 11 Shots. P/U and Fire Gun #2 @ 15,551'-15,552', 10 Shots. P/U & Fire Gun #3 @ 15,501'-15,502', 10 Shots. P/U & Fire Gun #4 @ 15,451'-15,452', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5,923 PSI , Total bbl pumped 120 bbl. Drop 2.125" Obsidian Frac Ball.

12:00 Stage 16 Frac : Open Well SICP 4,555 psi. Pump Stage #16. Pumped 2,000 gals 15% HCl, pumped 405,300 gals of Slickwater, w/ 97,960 lbs 100 mesh, 223,220 lbs 40/70 White, Max psi: 10,573 psi, Avg psi: 9,411 psi, Max rate: 80.9 bpm, Avg rate: 78.7 bpm, .88 Frac. Gradient. Approx load to rec: 9,650 bbls. ISIP: 5,141 psi, 5 min: 4,820 psi, 10 min: 4,749 psi, 15 min: 4,714 psi, 5 1/2" x 7" beginning PSI 3,463 Max PSI 4,505. Frac pumped as designed. Breakdown PSI- 7,039

15:00 Wind gusting up to 47 mph, lay down lubricator and wait for wind to slow down enough for safe working conditions. @ 17:15 wind laid down to 19 mph, Fesco crane operator & crew members were satisfied to PU lubricator & resume operations.

17:30 PJSM

17:45 Stage #17 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,690 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,890 psi, 362 FPM, Spot frac plug @ 15,427'. 4,770 psi SIP, Set frac plug @ 15,427', PU & Fire Gun #1 @ 15,401'- 15,402, 11 Shots. P/U and Fire Gun #2 @ 15,351'-15,352', 10 Shots. P/U & Fire Gun #3 @ 15,301'-15,302', 10 Shots. P/U & Fire Gun #4 @ 15,251'-15,252', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 6,002 PSI , Total bbl pumped 117 bbl. Drop 2.125" Obsidian Frac Ball.

20:00 Stage 17 Frac : Open Well SICP 4436 psi. Pump Stage #17. Pumped 2,000 gals 15% HCl, pumped 413,028 gals of Slickwater, w/ 97,920 lbs 100 mesh, 220,480 lbs 40/70 White, Max psi: 10,403 psi, Avg psi: 9337 psi, Max rate: 80.9 bpm, Avg rate: 78.5 bpm, .88 Frac. Gradient. Approx load to rec: 9948 bbls. ISIP: 5,141 psi, 5 min: 4796 psi, 10 min: 4727 psi, 15 min: 4699 psi, 5 1/2" x 7" beginning PSI 3592 Max PSI 4568. Frac pumped as designed. Breakdown PSI- 6843

22:30 Stage #18 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4650 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5660 psi, 345 FPM, Spot frac plug @ 15,227'. 4715 psi SIP, Set frac plug @ 15,227', PU & Fire Gun #1 @ 15,201'-15,202', 11 Shots. P/U and Fire Gun #2 @ 15,151'-15,152', 10 Shots. P/U & Fire Gun #3 @ 15,101'-15,102', 10 Shots. P/U & Fire Gun #4 @ 15,051'-15,052', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5696 PSI , Total bbl pumped 111 bbl. Drop 2.125" Obsidian Frac Ball.

00:45 Stage 18 Frac : Open Well SICP 4486 psi. Pump Stage #18. Pumped 2,000 gals 15% HCl, pumped 415,338 gals of Slickwater, w/ 97,880 lbs 100 mesh, 220,320 lbs 40/70 White, Max psi: 10,285 psi, Avg psi: 9,267 psi, Max rate: 82 bpm, Avg rate: 79.5 bpm, .88 Frac. Gradient. Approx load to rec: 9,889 bbls. ISIP: 5,124 psi, 5 min: 4,902 psi, 10 min: 4,833 psi, 15 min: 4,799 psi, 5 1/2" x 7" beginning PSI 3,446 Max PSI 4,366. Frac pumped as designed. Breakdown PSI- 6767

03:30 Stage #19 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,660 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,310 psi, 363 FPM, Spot frac plug @ 15,031'. 4710 psi SIP, Set frac plug @ 15,031', PU & Fire Gun #1 @ 15,001'-15,002', 11 Shots. P/U and Fire Gun #2 @ 14,951'-14,952', 10 Shots. P/U & Fire Gun #3 @ 14,901'-14,902', 10 Shots. P/U & Fire Gun #4 @ 14,851'-14,852', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5505 PSI , Total bbl pumped 105 bbl. Drop 2.125" Obsidian Frac Ball.

05:30 Start Stage 19 Frac.

## 02/25/2017

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06:00 PJSM

06:30 Stage 19 Frac : Open Well SICP 3,925 psi. Pump Stage #19. Pumped 2,000 gals 15% HCl, pumped 402,024 gals of Slickwater, w/ 97,140 lbs 100 mesh, 220,940 lbs 40/70 White, Max psi: 10,301 psi, Avg psi: 9,130 psi, Max rate: 80.2 bpm, Avg rate: 78.9 bpm, .90 Frac. Gradient. Approx load to rec: 9,572 bbls. ISIP: 5,267 psi, 5 min: 4,895 psi, 10 min: 4,820 psi, 15 min: 4,778 psi, 5 1/2" x 7" beginning PSI 3,390 Max PSI 4,388. Frac pumped as designed. Breakdown PSI- 6,767

08:15 PU gun assy to RIH, stacked out on top of tool trap due to broken pin, replaced bad pin and prepare to RIH.

09:15 Stage #20 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,650 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,750 psi, 360 FPM, Spot frac plug @ 14,827'. 4,800 psi SIP, Set frac plug @ 14,827', PU & Fire Gun #1 @ 14,801'-14,802', 11 Shots. P/U and Fire Gun #2 @ 14,751'-14,752', 10 Shots. P/U & Fire Gun #3 @ 14,701'-14,702', 10 Shots. P/U & Fire Gun #4 @ 14,651'-14,652', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5,915 PSI , Total bbl pumped 140 bbl. Drop 2.125" Obsidian Frac Ball.

11:15 Grease frac stack & WL finish minor repair on tool trap.

12:15 Stage 20 Frac : Open Well SICP 4,422 psi. Pump Stage #20. Pumped 2,000 gals 15% HCl, pumped 407,652 gals of Slickwater, w/ 97,140 lbs 100 mesh, 220,280 lbs 40/70 White, Max psi: 10,094 psi, Avg psi: 9,038 psi, Max rate: 80.3 bpm, Avg rate: 78.7 bpm, .89 Frac. Gradient. Approx load to rec: 9,706 bbls. ISIP: 5,149 psi, 5 min: 4,818 psi, 10 min: 4,772 psi, 15 min: 4,751 psi, 5 1/2" x 7" beginning PSI 3,459 Max PSI 4,296. Frac pumped as designed. Breakdown PSI- 6,932

15:15 Stage #21 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,690 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,840 psi, 360 FPM, Spot frac plug @ 14,627'. 4,820 psi SIP, Set frac plug @ 14,627', PU & Fire Gun #1 @ 14,601'-14,602', 11 Shots. P/U and Fire Gun #2 @ 14,551'-14,552', 10 Shots. P/U & Fire Gun #3 @ 14,506'-14,507', 10 Shots. P/U & Fire Gun #4 @ 14,451'-14,452'. 9 Shots(All Scalloped Perf Guns. 6 SPF. 60 Degree Phasing. 19

Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5,925 PSI , Total bbl pumped 108 bbl. Drop 2.125" Obsidian Frac Ball. Shift change @ 18:00. PJSM with all Venders on location.

17:15 Stage 21 Frac : Open Well SICP 4496 psi. Pump Stage #21. Pumped 2,000 gals 15% HCl, pumped 411,264 gals of Slickwater, w/ 97,680 lbs 100 mesh, 220,140 lbs 40/70 White, Max psi: 10,568 psi, Avg psi: 8,847 psi, Max rate: 80.9 bpm, Avg rate: 78.0 bpm, .90 Frac. Gradient. Approx load to rec: 9,792 bbls. ISIP: 5,286 psi, 5 min: 4,972 psi, 10 min: 4,892 psi, 15 min: 4,816 psi, 5 1/2" x 7" beginning PSI 3,464 Max PSI 4,530. Frac pumped as designed. Breakdown PSI- 6,987

20:00 Stage #22 Pump Down. P/U 4 1/2" Obsidian Bridge Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4830 psi. RIH & get on depth w/ MJ @ 10750'-10772'. RIH & Pump Down @ 9 bpm @ 5180 psi, 375 FPM, Spot CBP @ 14,427'. 4795 psi SIP, Set CBP @ 14,427', test to 6620 psi & hold for 5 min. PU & Fire Gun #1 @ 14,401'-14,402', 11 Shots. P/U and Fire Gun #2 @ 14,351'-14,352', 10 Shots. P/U & Fire Gun #3 @ 14,296'-14,297', 10 Shots. P/U & Fire Gun #4 @ 14,251'-14,252', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 6620 PSI , Total bbl pumped 90 bbl.

22:00 Stage 22 Frac : Open Well SICP 4,651 psi. Pump Stage #22. Pumped 2,000 gals 15% HCl, pumped 406,728 gals of Slickwater, w/ 97,780 lbs 100 mesh, 219,020 lbs 40/70 White, Max psi: 10,578 psi, Avg psi: 9,058 psi, Max rate: 80.3 bpm, Avg rate: 79 bpm, .90 Frac. Gradient. Approx load to rec: 9,684 bbls. ISIP: 5,282 psi, 5 min: 4,984 psi, 10 min: 4,920 psi, 15 min: 4,885 psi, 5 1/2" x 7" beginning PSI 3,454 Max PSI 4,418. Frac pumped as designed. Breakdown PSI- 7,161

00:30 Stage #23 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4800 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5540- psi, 385 FPM, Spot frac plug @ 14,225'. 4850 psi SIP, Set frac plug @ 14,225', PU & Fire Gun #1 @ 14,201'-14,202', 11 Shots. P/U and Fire Gun #2 @ 14,151'-14,152', 10 Shots. P/U & Fire Gun #3 @ 14,101'-14,102', 10 Shots. P/U & Fire Gun #4 @ 14,051'-14,052', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5789 PSI , Total bbl pumped 81 bbl. Drop 2.125" Obsidian Frac Ball.

03:00 Stage 23 Frac : Open Well SICP 4,591 psi. Pump Stage #23. Pumped 2,000 gals 15% HCl, pumped 410,298 gals of Slickwater, w/ 98,580 lbs 100 mesh, 220,820 lbs 40/70 White, Max psi: 9,742 psi, Avg psi: 8,988 psi, Max rate: 81.2 bpm, Avg rate: 79.4 bpm, .90 Frac. Gradient. Approx load to rec: 9,769 bbls. ISIP: 5,328 psi, 5 min: 4,995 psi, 10 min: 4,913 psi, 15 min: 4,873 psi, 5 1/2" x 7" beginning PSI 3,434 Max PSI 4,190. Frac pumped as designed. Breakdown PSI- 6,806

## 02/26/2017

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06:00 PJSM

06:15 Stage #24 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,780 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,880- psi, 365 FPM, Spot frac plug @ 14,027'. 5,200 psi SIP, Set frac plug @ 14,027', PU & Fire Gun #1 @ 14,001'-14,002', 11 Shots. P/U and Fire Gun #2 @ 13,951'-13,952', 10 Shots. P/U & Fire Gun #3 @ 13,901'-13,902', 10 Shots. P/U & Fire Gun #4 @ 13,851'-13,852', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 6,111 PSI , Total bbl pumped 82 bbl. Drop 2.125" Obsidian Frac Ball.

07:45 Stage 24 Frac : Open Well SICP 4,570 psi. Pump Stage #24. Pumped 2,000 gals 15% HCl, pumped 408,828 gals of Slickwater, w/ 97,920 lbs 100 mesh, 220,660 lbs 40/70 White, Max psi: 10,221 psi, Avg psi: 9,116 psi, Max rate: 81.1 bpm, Avg rate: 79.7 bpm, .91 Frac. Gradient. Approx load to rec: 9,734 bbls. ISIP: 5,420 psi, 5 min: 5,009 psi, 10 min: 4,935 psi, 15 min: 4,894 psi, 5 1/2" x 7" beginning PSI 3,243 Max PSI 3,924. Frac pumped as designed. Breakdown PSI- 7,134

10:30 Stage #25 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,830 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,850- psi, 365 FPM, Spot frac plug @ 13,827'. 5,000 psi SIP, Set frac plug @ 13,827', PU & Fire Gun #1 @ 13,801'-13,802', 11 Shots. P/U and Fire Gun #2 @ 13,751'-13,752', 10 Shots. P/U & Fire Gun #3 @ 13,709'-13,710', 10 Shots. P/U & Fire Gun #4 @

13,659'-13,660', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 6,028 PSI , Total bbl pumped 83 bbl. Drop 2.125" Obsidian Frac Ball.

12:30 Repair threads on 2 packing nuts on 2 pumps. Prime up & pressure test, back up & running again @ 13:30. Grease Frac Stack.

13:30 Stage 25 Frac : Open Well SICP 4,589 psi. Pump Stage #25. Pumped 2,000 gals 15% HCl, pumped 416,892 gals of Slickwater, w/ 97,220 lbs 100 mesh, 220,980 lbs 40/70 White, Max psi: 10,335 psi, Avg psi: 9,102 psi, Max rate: 81.2 bpm, Avg rate: 79.8 bpm, .90 Frac. Gradient. Approx load to rec: 9,926 bbls. ISIP: 5,269 psi, 5 min: 4,969 psi, 10 min: 4,901 psi, 15 min: 4,866 psi, 5 1/2" x 7" beginning PSI 3,141 Max PSI 3,906. Frac pumped as designed. Breakdown PSI- 7,364

16:00 WL truck had to re-gen motor.

17:30 PJSM

18:00 Stage #26 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4640 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,910- psi, 371 FPM, Spot frac plug @ 13,627. 4810 psi SIP, Set frac plug @ 13,627', PU & Fire Gun #1 @ 13,601'-13,602', 11 Shots. P/U and Fire Gun #2 @ 13,551'-13,552', 10 Shots. P/U & Fire Gun #3 @ 13,501'-13,502', 10 Shots. P/U & Fire Gun #4 @ 13,451'-13,452', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5,932 PSI , Total bbl pumped 84 bbl. Drop 2.125" Obsidian Frac Ball.

19:30 Stage 26 Frac : Open Well SICP 4543 psi. Pump Stage #26. Pumped 2,000 gals 15% HCl, pumped 407,316 gals of Slickwater, w/ 97,200 lbs 100 mesh, 220,980 lbs 40/70 White, Max psi: 10,279 psi, Avg psi: 8,950 psi, Max rate: 80.9 bpm, Avg rate: 79 bpm, .90 Frac. Gradient. Approx load to rec: 9,698 bbls. ISIP: 5,301 psi, 5 min: 5,044 psi, 10 min: 4,996 psi, 15 min: 4,976 psi, 5 1/2" x 7" beginning PSI 3,543 Max PSI 4,431. Frac pumped as designed. Breakdown PSI- 6,864

22:00 Stage #27 Pump Down. At 11,368'CCL depth plug depth 11,390' WL stopped going in hole. Worked WL free @ 10,845' CCL POOH. No tools on WL. Pull out was clean.

00:30 Held PJSM with all venders on location to discuss next steps to get WL off the well.

01:00 RD FESCO, FTS, & CER equipment as needed to RU CTU.

## 02/27/2017

Rig Name: Energy Service Company #303

06:00 PJSM

06:30 Continue RD necessary equipment for possible coil tbg operations. @ 08:00 held conference call with Forge management and Fesco wireline engineer about fishing plug & gun assy on braided line. Decision was made to RIH w/ fishing tools on braided line.

07:30 RU crane & WL truck. NU spool, WL adapter flange, BOP's, & tool trap.

10:30 W/o 30' of extra lubricator & fishing tools to AOL. On location @ 15:15.

15:15 PJSM before fishing operations, PU lubricator (80') & test to 9,500 psi, MU BHA, open well - 4,520 psi. RIH @ 50 fpm. BHA as followed: 3 3/4" overshot w/ 2" grapple, 3 3/4" bait sub, 1 3/4" fishing neck, 2" JD pulling tool, 2 1/8" spang jars, 2 1/8" oil jars, 4 - 2 1/8" weight bars, & 2 1/8" cable head. Total BHA length- 38.6'

18:00 PJSM

18:30 Tagged TOF @ 10,771'. Start trying to latch into Fish.

18:45 Latched into Fish momentarily and lost it. Fish fell down hole to 11,012'. Resume trying to latch in.

19:00 Could not latch in. POOH to run Impression Block.

19:30 WL OOH w/all Fishing BHA. After cutting braided wireline Operator found line not in good condition. Will not run Impression Block.

20:30 RD FESCO & CER. SIW SFN. Wait on CTU.

## 02/28/2017

Rig Name: Energy Service Company #303

06:00 PJSM

06:30 W/O CTU.

18:00 W/O CTU.

## 03/01/2017

Rig Name: Energy Service Company #303

06:00 W/O CTU. CTU on location @ 10:00am

10:00 PJSM, MIRU Red Zone 2 5/8" CTU, function test bop, NU bop to wellhead, PU injector head, MU lubricator, pull test coil connector to 35K, MU KLX BHA, load coil w/ 110 bbls of f/w, stab lubricator on wellhead, test to 7,500 psi.

17:30 PJSM, Open well- 4,400 psi, RIH w/ BHA as followed: 3 3/4" overshot w/ 3 1/8" grapple, 3 1/8" x-over, 2 7/8" A.V. sub, 2 7/8" hydraulic disconnect, 2 7/8"

jars, 2 7/8" weight bar, 2 7/8" accelerator, 2 7/8" dual back pressure valve.  
20:00 String weight check @ 10,700'/24,000 lbs. up/12,000 lbs. down. Continue in hole.  
20:30 Tagged top of Fish @ 11,299', WHP 4205. P/U 29,000 lbs./5,000 lbs. over SW, held steady, surge well, pump 1 BPM @ WHP 4200 psi CP 4800 psi RIH to 5,000 under SW, P/U 60,000 lbs./35,000 lbs. over SW, 30' cycle, shut pump down SI backside, RIH - 5,000 lbs. under SW, P/U 80,000 lbs. 55,000 lbs. over SW, 30' cycle, held steady, P/U to 90,000 lbs. 60,000 lbs. over SW, pulled off, P/U 50', RIH retagged @ 11,299'.  
21:00 POOH. 100'/min. When in 5 1/2" csg.  
23:30 OOH w/ Fishing tools. No Perf. Guns and BP. From looking at overshot scaring it appears wireline is on top of fish. Wait on KLX Hotshot to bring Wireline Fishing Tools to loc.  
02:30 Fishing Tools on loc. Make up BHA.  
03:00 PSI Test Lubricator 7,500 PSI. Open well 4,065 WHP. RIH with the following BHA, 2 7/8" OD Dual Back Pressure Valve, 2 7/8" OD Accelerator, 2 7/8" OD Weight Bar, 2 7/8" OD Jar, 2 7/8" OD Hydraulic Disconnect, 2 7/8" OD Motor, 3 3/4" OD Wire Grab.  
05:00 RIH to 10,700'. Check string weight, 22,000 lbs. up 7,000 lbs. down, RIH to 11,310', pump 3/4 BPM @ WHP 4,416 CP 4,700.  
05:15 Stop pump. POOH string wt. 24,000 lbs., WHP 4,195 CP 4,165. Shift Change.

### 03/02/2017

Rig Name: Energy Service Company #303

06:00 PJSM  
06:30 Continue POOH w/ spear BHA. Out of hole @ 07:30. No wire on the spear, bottom hook above the pigtail was bent, scarring on bottom of spear was obvious from wire. SWI, break off spear assy. Held conference call with Forge management to discuss further operations. Decision was made to run downhole camera.  
09:00 MIRU Fesco e-line truck & crane. PU lubricator  
12:30 W/O x-over to go from WL weight bar back to tool for camera.  
15:30 RU Red Zone pump to flow cross, open well- 3,900 psi, pump 236 bbls of f/w to flush wellbore prior to RIH w/ camera. MU BHA, stab lubricator on wellhead, test to 9,500 psi. Open well- 4,500 psi, RIH w/ BHA as followed: 1 11/16" camera, 3 1/8" weight bar, 3- 2 3/4" weight bars, & 2" fishing neck. Total length of BHA- 35.5'  
17:30 PJSM, Continue RIH w/ camera BHA @ 200 fpm, pumping 3 BPM @ 6000 psi.  
18:00 Stopped at 10,600' to clean camera, pumping 3 BPM @ 6,000 WHP.  
18:30 Cont. RIH with Camera, 25' min., 1 BPM 5,000 PSI. Slowed down @ 11,200 to 7 ft./min.  
19:45 Fishing Neck @ 11,278'. Fishing Neck had wireline wrapped around it. Pump 1 BPM @ 5,000 psi.  
20:00 Stop pump. POOH w/ Wireline BHA. Pumped 270 BBLS Fresh Water when RIH w/camera.  
20:30 OOH w/wireline & BHA. Wait on orders.  
21:30 Wait on KLX BHA. RD FTS & FESCO.

### 03/03/2017

Rig Name: Energy Service Company #303

06:00 PJSM  
06:30 Continue RD FTS, W/O tools to AOL.  
10:30 MU burn over shoe BHA, test 2 7/8" motor (2 bpm @ 2,000 psi). Stab lubricator, test stack to 7,500 psi. Open well- 4,000 psi, TIH w/ BHA as followed: 3 3/4" wash pipe w/ cut rite (3 1/8" ID), 3 1/8" x-over, 2 7/8" NOV motor, 2 7/8" hydraulic disconnect, 2 7/8 jars, 2 7/8" weight bar, 2 7/8" accelerator, 2 7/8" dual back pressure valve. Total length of BHA- 42.19'. TIH @ 50 fpm.  
14:00 @ 10,600' perform weight check, 15K up, 4K down, circulating psi- 6,200, WH psi- 4,000, 3 bpm in & out. Continue TIH w/ coil @ 50 fpm. Tag TOF @ 11,308', circulating psi- 5,600, WH psi- 3,900. Start washing & milling over fish w 3-4K on shoe. Mill over fish for 30 min, made approximately 2' of hole. POOH. OOH w/ shoe BHA @ 17:30, SWI. Shoe was full of wire all the way up to the top sub, had severe markings up to 15" high on it. Break & LD BHA.  
17:30 PJSM  
17:45 Cut off 100' CT, weld CT connector, pull test coil connector to 35K. MU KLX BHA as follows. 2 7/8"(OD) Dual Back Pressure Valve, 2 7/8" (OD) Accelerator, 2 7/8"(OD) Weight Bar, 2 7/8"(OD) Jar, 2 7/8"(OD) Hydraulic Disconnect, 2 7/8"(OD) Index Tool, 2 7/8"(OD) AV Sub, 2 7/8"(OD) X-Over, 3 3/4" Overshot. Total Tool length 33.39'. Test Stack to 7500 psi. Open well, 3,980 psi, RIH w/BHA. TIH @ 50' min.  
19:30 Perform weight Check @ 10,700' 33K up, 24K down, Pump 2 BPM WHP 3770 CP 4520 RIH 50 FPM.  
21:15 Tagged Fish @ 11,313', stop pumping, close backside, cycled 6 times (6 cycles remaining), put neg. 10K SW on fish, PU, no over pull, nor PSI increase, WHP 3860 psi, POOH, had 6K (38K) over SW, will inspect BHA when OOH.  
21:45 OOH w/BHA no Fish. Over shot had wireline marks on the inside & outside.

Later found 18" - 2' of wire half way up inside of Over shot.  
 23:30 W/O tools to AOL.  
 01:00 Wash Pipe w/cut right on loc.  
 01:30 MU burn over shoe BHA, test 2 7/8" motor (2 bpm @ 2,000 psi). Stab lubricator, test stack to 7,500 psi. Open well- 3980 psi, TIH w/ BHA as follows: 3 3/4" wash pipe w/ cut rite (3 1/8" ID), 3 1/8" x-over, 2 7/8" NOV motor, 2 7/8" hydraulic disconnect, 2 7/8 jars, 2 7/8" weight bar, 2 7/8" accelerator, 2 7/8" dual back pressure valve. Total length 44.19'. TIH @ 50 fpm  
 03:30 Weight Check @ 10,650' 22K up 9K down, start pumping 2 BPM @ 4,000 WHP 4,990 CP, Tag Fish @ 11,310', Pumping 2 BPM @ WHP 4,070 CP 5,070, start washing & milling over fish 3-4K on shoe. Mill over fish 45 min made 4'. 3 cycles used this trip. 3 cycles remaining on CT connection.  
 04:30 POOH. 26K up. Pumping 2 BPM all the way OOH to get cuttings out of hole. WHP 3685 CP 5000.  
 04:30 Shift Change Cont. POOH.

### 03/04/2017

Rig Name: Energy Service Company #303

06:00 PJSM  
 06:15 Continue POOH w/ shoe BHA. OOH @ 06:30. Break & LD BHA. Nothing in the shoe, had markings & chips knocked off cut rite on the bottom of the top sub. Cut 100' off of coil, weld on new 2 3/8" PAC connection, pull test to 35K. Stab lubricator, test stack to 7,500 psi.  
 09:30 Open well- 3,860 psi. RIH w/ BHA as followed: 3 3/4" overshot w/ 3 1/8" grapple, 2 7/8" x-over, 2 7/8" AV sub, 2 7/8" index tool, 2 7/8" hydraulic disconnect, 2 7/8" jars, 2 7/8" weight bar, 2 7/8" accelerator, & 2 7/8" dual back pressure valve.  
 11:30 @ 10,650' perform weight check, 28K up, 10K down, circulating psi- 4,900, WH psi- 3,900, 2 bpm in & out. Continue RIH. Tag TOF @ 11,314', shut down pump & manifold, PU w/ no over pull, sat back down 20K, bring pump online @ 3.5 bpm, set jars, hit fish @ 100 fpm w/ pump offline. PU over pull 47K, POOH dragging. OOH w/ coil & fish @ 14:45. Break & LD gun assy (Fesco employees LD guns). Break & LD KLX BHA.  
 15:30 MIRU Sand-X, set 2 open top pits. Rockwater RU plug catcher & 3" drillout iron. RU Emerald Surf mixing plant.  
 18:00 PJSM.  
 18:30 Cont. to RU Rockwater drillout iron & Emerald Surf mixing plant.  
 22:30 Function test Motor 2.5 BPM @ 1,800 Psi. RU CT Lub., PSI Test Lub. to 7,500 PSI, PSI Test Flowback Iron tp 7,500 PSI. Open well WHP 3850. RIH with Drill out BHA as follows. 3 3/4" Butterfly Mill, 2 7/8" NOV Power Plus 3.5 BPM max Motor, 2 7/8" NOV Agitator 160 gal/min max, 2 7/8" Circulating Sub, 2 7/8" Hyd. Disconnect, 2 7/8" Directional jar, 2 7/8" Dual Back PSI Valve. 28.48' over all length. 150' into hole started pumping 1 BPM @ WHP 3890 CP 4470.  
 00:15 Weight Check @ 10,699', 31K up, 24K down CT cont. RIH Plug #1.  
 00:45 Tag Plug #1 @ 11,365'. 2-3k WOB, CP 6,950 psi, WH pressure 4,000 psi. 2.5 bpm in and Out. Thru plug in 18 minutes. Pump 10 bbl 120 vis. polymer dyed sweep. Continue RIH with coil. Sweep at surface on time. Plug catcher had medium size plug parts and a few fine strands of wire. Red Zone having fluid pump problems. Going to RU another pump after short trip.  
 02:45 Tag Plug #2 @ 13,650', WHP 3790, CP 5330, 2.5 BPM in/out, pump 10 BBL 120 vis polymer dyed sweep. Wait on sweep to exit coil. Sweep on surface on time. Plug catcher had a few plug parts, sand, and few fine strands of wire in it.  
 03:30 Sweep out of CT. TOO H for short trip @ 25 ft./min. 2.5 BPM in/out, CP 5,560, WHP 3,650.  
 05:15 Short Trip completed to 10,598' 2.5 bpm in/out, CP 5,125, WHP 3,600.

### 03/05/2017

Rig Name: Energy Service Company #303

06:00 PJSM  
 06:15 Tag Plug #2 @ 13,650'. 2-3k WOB, Circulating pressure 5,770 psi, WH pressure 3,800 psi. 2.5 bpm in & out. Thru plug in 6 minutes. Send 10 bbl polymer sweep. Good plug parts back from plug #1, & sweep back on time. Continue RIH with coil.  
 07:00 Tag Plug #3 @ 13,847'. 2-3k WOB, Circulating pressure 5,670 psi, WH pressure 3,970 psi. 2.5 bpm in & out. Thru plug in 13 minutes. Send 10 bbl polymer sweep. Good plug parts back from plug #2, & sweep back on time. Continue RIH with coil.  
 07:30 Tag Plug #4 @ 14,049'. 2-3k WOB, Circulating pressure 5,880 psi, WH pressure 3,860 psi. 2.5 bpm in & out. Thru plug in 9 minutes. Send 10 bbl polymer sweep. Good plug parts back from plug #3, & sweep back on time. Continue RIH with coil.  
 08:00 Tag Plug #5 @ 14,246'. 2-3k WOB, Circulating pressure 6,200 psi, WH pressure 3,700 psi. 3 bpm in & out. Thru plug in 10 minutes. Send 10 bbl polymer sweep. Good plug parts back from plug #4, & sweep back on time. Continue RIH with coil.  
 08:30 Tag Plug #6 @ 14,449'. 2-3k WOB, Circulating pressure 5,750 psi, WH pressure

3,600 psi. 3 bpm in & out. Thru plug in 6 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #5, & sweep back on time. Continue RIH with coil.

09:00 Tag Plug #7 @ 14,649'. 2-3k WOB, Circulating pressure 5,880 psi, WH pressure 3,750 psi. 3 bpm in & out. Thru plug in 9 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #6, & sweep back on time. Continue RIH with coil.

09:30 Tag Plug #8 @ 14,850'. 2-3k WOB, Circulating pressure 5,800 psi, WH pressure 3,645 psi. 3 bpm in & out. Thru plug in 8 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #7, & sweep back on time. Continue RIH with coil.

10:00 Tag Plug #9 @ 15,057'. 2-3k WOB, Circulating pressure 6,100 psi, WH pressure 3,400 psi. 3 bpm in & out. Thru plug in 6 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #8, & sweep back on time. Continue RIH with coil.

10:30 Tag Plug #10 @ 15,252'. 2-3k WOB, Circulating pressure 5,700 psi, WH pressure 3,530 psi. 3 bpm in & out. Thru plug in 9 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #9, & sweep back on time. Continue RIH with coil.

11:00 Tag plug #11 @ 15,453'. Pump 10-10-10 sweeps, let sweeps clear reel, start POOH @ 35 fpm, while POOH Red Zone crew noticed a pinhole leak in the tubing on the reel (was still able to POOH & circulate). Continue POOH w/CT. @ 10,750' curve sweep was back to surface. OOH @ 17:00, SWI. Break & LD KLX BHA.

17:00 RD Red Zone CTU, Emerald Surf mixing plant, Rockwater plug catcher, & Standard Safety Equipment.

18:00 PJSM

18:30 Continue to RD Red Zone CTU, Emerald Surf mixing plant, Rockwater plug catcher, & Standard Safety Equipment. Empty Sand X & half pits.

20:30 Red Zone CTU, Emerald Surf, Standard Safety RD & off location @ 20:30. Outlaw Transports empty out of half pits, Sand X, and Frac tank.

### 03/06/2017

Rig Name: Energy Service Company #303

06:00 PJSM, Move Sand X to corner of location, release & PU rental equipment. W/O super sucker to clean pits.

12:00 SI, no activity.

### 03/07/2017

Rig Name: Energy Service Company #303

06:00 SI, no activity

09:00 PJSM, RU super sucker, clean out 3 half pits, DTR PU half pits.

12:00 SI, no activity

### 03/08/2017

Rig Name: Energy Service Company #303

06:00 SI, no activity

08:30 PJSM

08:45 MIRU Pro Petro pump trucks, Fesco WL truck & crane, & CER test pump.

11:00 Prime up pumps, pressure test pumps & lines to 10,500 psi. @ 11:15- Open well- 3,795 psi, pumped 2,000 gal 10# linear gel, breaker set point @ .25 per thousand (should break down in approx. 1hr), pumped 222 bbls of treated water behind gel to flush wellbore prior to pumpdown (270 bbls total pumped). Pump rate- 9 bpm @ 5,250 psi, ISIP- 5,141, 5 min- 3,945, 10 min- 3,920, 15 min- 3,906. 5 1/2" x 7" intermediate- 3,800 psi.

13:00 Stage #27 Pump Down. P/U 4 1/2" Obsidian Bridge Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 3,880 psi. RIH & get on depth w/ MJ @ 10,750'-10,772. RIH & Pump Down @ 9 bpm @ 4,691 psi, 350 FPM, Spot CBP @ 13,427'. 4,060 psi SIP, Set CBP @ 13,427', test to 9,500 psi & hold for 5 min (bled pressure down to 4,900 psi). PU & Fire Gun #1 @ 13,401'-13,402', 11 Shots (pressure dropped 100 psi after firing 1st cluster). P/U and Fire Gun #2 @ 13,351'-13,352', 10 Shots. P/U & Fire Gun #3 @ 13,301'-13,302', 10 Shots. P/U & Fire Gun #4 @ 13,251'-13,252', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5,038 PSI , Total bbl pumped 43 bbl.

15:00 RD Pro Petro & Fesco.

16:30 CER greased frac stack & re-torqued stack & tubing head valves to recommended specs. RD CER test pump. All vendors off location @ 17:30.

17:30 SI, no activity

### 03/15/2017

Rig Name: Energy Service Company #303

06:00 SI, no activity

09:00 MIRU Frac Tech frac fleet, Fesco E-line truck & crane.

18:00 Shift change. PJSM w/all Venders.

18:30 MIRU Frac Tech Frac fleet.  
05:30 Frac Tech 90% RU. 9 Loads of 15 sand in Sand Kings. 2 Loads 100 mesh, 7 loads 40/70. Shift Change.

### 03/16/2017

Rig Name: Energy Service Company #303

06:00 PJSM

06:30 Continue RU frac fleet, MIRU chemical floats, & chem-ad.

13:00 Perform bucket test, prime pumps, SD pumps & change out 3" check valve on treating line.

17:30 Shift change, PJSM

18:00 PSI test pumps & lines to 12K, set N2 pop off @ 10,872 psi, mechanical pop off at 11,500 psi, EFRV tested & set @ 6000 psi, & mechanical backside pop off set @ 6000 psi. Bucket test FR chemical pump & roll acid.

22:45 Stage #27 Frac. WHP 4,394. At 23:30 water transfer had a flange connection break on their pump. Had just started 100 mesh, flushed well & wait on pump to be repaired. Took 30 minutes to repair. FTS replaced two frac pumps. Restart @ 2:15. At 3:00 blender screws locked up on 1 PPG 100 mesh, flush well & evaluate. Resumed frac at 3:20. Shutdown at 5:00 due to low fuel. Will resume stage when issues resolved. Shift change.

### 03/17/2017

Rig Name: Energy Service Company #303

06:00 PJSM

06:15 Repair & fuel up pumps, finish stage 27 Frac : Open Well SICP 4,257 psi. Pump Stage #27. Pumped 1,500 gals 15% HCl, pumped 407,316 gals of Slickwater, w/ 95,220 lbs 100 mesh, 187,200 lbs 40/70 White, Max psi: 10,413 psi, Avg psi: 8,885 psi, Max rate: 83.3 bpm, Avg rate: 55.5 bpm, .93 Frac. Gradient. Approx load to rec: 9,698 bbls. ISIP: 5,645 psi, 5 min: 5,003 psi, 10 min: 4,890 psi, 15 min: 4,844 psi, 5 1/2" x 7" 3,500 psi.

07:00 Stage #28 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,700 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 7,800 psi, 365 FPM, Spot frac plug @ 13,227'. 5,900 psi SIP, Set frac plug @ 13,227', PU & Fire Gun #1 @ 13,201'-13,202', 11 Shots. P/U and Fire Gun #2 @ 13,151'-13,152', 10 Shots. P/U & Fire Gun #3 @ 13,101'-13,102', 10 Shots. P/U & Fire Gun #4 @ 13,046'-13,047', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 8,451 PSI , Total bbl pumped 58 bbl. Drop 2.125" Obsidian Frac Ball.

10:00 Stage 28 frac, while on .50 ppg 100 mesh, @ 10:45 section of line on water transfer busted, Resource repair busted line & replaced a head & clamp, up & pumping again @ 15:45.

15:45 Stage 28 Frac : Open Well SICP 4,639 psi. Pump Stage #28. Pumped 1,500 gals 15% HCl, pumped 456,582 gals of Slickwater, w/ 94,960 lbs 100 mesh, 236,400 lbs 40/70 White, Max psi: 10,067 psi, Avg psi: 8,677 psi, Max rate: 84.5 bpm, Avg rate: 77.7 bpm, .87 Frac. Gradient. Approx load to rec: 10,871 bbls. ISIP: 5,022 psi, 5 min: 4,924 psi, 10 min: 4,851 psi, 15 min: 4,822 psi, 5 1/2" x 7" 3,500 psi. Frac pumped as designed. Breakdown PSI- 6,679.

18:15 PJSM

18:30 Stage #29 Pump Down. P/U 4 1/2" Obsidian Bridge Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,758 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 7,320 psi, 318 FPM, Spot CBP @ 13,035'. 4,780 psi SIP, Set CBP @ 13,035', test to 6,000 psi & hold for 5 min. PU & Fire Gun #1 @ 13,009'-13,010', 11 Shots (pressure dropped 60 psi after firing 1st cluster). P/U and Fire Gun #2 @ 12,959'-12,960', 10 Shots. P/U & Fire Gun #3 @ 12,905'-12,906', 10 Shots. P/U & Fire Gun #4 @ 12,858'-12,859', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 7,320 PSI , Total bbl pumped 56 bbl. Haliburton plug setting tool clean no sand.

21:00 Stage 29 Frac : Open Well SICP 3,545 psi. Pump Stage #29. Pumped 1,500 gals 15% HCl, pumped 419,118 gals of Slickwater, w/ 94,860 lbs 100 mesh, 236,380 lbs 40/70 White, Max psi: 10,425 psi, Avg psi: 8,669 psi, Max rate: 83.0 bpm, Avg rate: 79.4 bpm, .88 Frac. Gradient. Approx load to rec: 9,979 bbls. ISIP: 5,115 psi, 5 min: 4,815 psi, 10 min: 4,765 psi, 15 min: 4,778 psi, 5 1/2" x 7" 3,500 psi. Frac pumped as designed. Breakdown PSI- 7,203. Diagnostic: ISIP 5,583 psi, .74 FG.

00:15 Stage #30 Pump Down. P/U 4 1/2" Obsidian Ball Drop Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,760 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 6,025 psi, 312 FPM, Spot CBP @ 12,827'. 4,800 psi SIP, Set CBP @ 12,827', test to 6,000 psi & hold for 5 min. PU & Fire Gun #1 @ 12,801'-12,802', 11 Shots P/U and Fire Gun #2 @ 12,751'-12,752'. 10 Shots. P/U & Fire Gun #3 @ 12,701'-12,702'. 10 Shots.

P/U & Fire Gun #4 @ 12,651'-12,652', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 6,025 PSI , Total bbl pumped 53 bbl. Drop ball. Haliburton plug setting tool clean, no sand.

02:30 Stage 30 Frac : Open Well SICP 4,625 psi. Pump Stage #30. Pumped 1,500 gals 15% HCl, pumped 409,626 gals of Slickwater, w/ 96,080 lbs 100 mesh, 220,960 lbs 40/70 White, Max psi: 9,962 psi, Avg psi: 8,376 psi, Max rate: 82.9 bpm, Avg rate: 78.4 bpm, .89 Frac. Gradient. Approx load to rec: 9,753 bbls. ISIP: 5,219 psi, 5 min: 4,905 psi, 10 min: 4,825 psi, 15 min: 4,793 psi, 5 1/2" x 7" 3,500 psi. Frac pumped as designed. Breakdown PSI- 6,885. Diagnostic ISIP 5,465 .74 FG.

### 03/18/2017

Rig Name: Energy Service Company #303

06:00 PJSM

06:15 Stage #31 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,700 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,700 psi, 365 FPM, Spot frac plug @ 12,632'. 4,950 psi SIP, Set frac plug @ 12,632', PU & Fire Gun #1 @ 12,606'-12,607', 11 Shots. P/U and Fire Gun #2 @ 12,551'-12,552', 10 Shots. P/U & Fire Gun #3 @ 12,501'-12,502', 10 Shots. P/U & Fire Gun #4 @ 12,451'-12,452', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5,869 PSI , Total bbl pumped 41 bbl. Drop 2.125" Obsidian Frac Ball. No sand on tool string.

08:30 Grease frac stack, Resource had to repair line & replace a head & clamp on water line.

10:00 Stage 31 Frac: Open Well SICP 4,368 psi. Pump Stage #31. Pumped 1,500 gals 15% HCl, pumped 409,836 gals of Slickwater, w/ 95,120 lbs 100 mesh, 220,620 lbs 40/70 White, Max psi: 10,191 psi, Avg psi: 8,245 psi, Max rate: 83.5 bpm, Avg rate: 80.2 bpm, .89 Frac. Gradient. Approx load to rec: 9,758 bbls. ISIP: 5,241 psi, 5 min: 4,861 psi, 10 min: 4,790 psi, 15 min: 4,765 psi, 5 1/2" x 7" 3500 psi. Frac pumped as designed. Breakdown PSI- 6,612 , initial ISIP- 5,344

13:45 Stage #32 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,700 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,850 psi, 365 FPM, Spot frac plug @ 12,427'. 5,100 psi SIP, Set frac plug @ 12,427', PU & Fire Gun #1 @ 12,401'-12,402', 11 Shots. P/U and Fire Gun #2 @ 12,351'-12,352', 10 Shots. P/U & Fire Gun #3 @ 12,301'-12,302', 10 Shots. P/U & Fire Gun #4 @ 12,251'-12,252', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5,904 PSI , Total bbl pumped 38 bbl. Drop 2.125" Obsidian Frac Ball. No sand on tool string.

15:45 PJSM with all venders.

16:00 Stage 32 Frac: Open Well SICP 4,512 psi. Pump Stage #32. Pumped 1,500 gals 15% HCl, pumped 394,464 gals of Slickwater, w/ 95,420 lbs 100 mesh, 220,320 lbs 40/70 White, Max psi: 9,684 psi, Avg psi: 8,257 psi, Max rate: 83.0 bpm, Avg rate: 79.7 bpm, .89 Frac. Gradient. Approx load to rec: 9,392 bbls. ISIP: 5,160 psi, 5 min: 4,840 psi, 10 min: 4,780 psi, 15 min: 4,733 psi, 5 1/2" x 7" 3500 psi. Frac pumped as designed. Breakdown PSI- 7,351 , initial ISIP- 5,192.Diagnostic: Perfs. open - 16, Perf friction - 2,481, Tortuosity - 616.

19:00 Stage #33 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,730 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,520 psi, 351 FPM, Spot frac plug @ 12,227'. 4,755 psi SIP, Set frac plug @ 12,227', PU & Fire Gun #1 @ 12,201'-12,202', 11 Shots. P/U and Fire Gun #2 @ 12,151'-12,152', 10 Shots. P/U & Fire Gun #3 @ 12,101'-12,102', 10 Shots. P/U & Fire Gun #4 @ 12,051'-12,052', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5,710 PSI , Total bbl pumped 35 bbl. Drop 2.125" Obsidian Frac Ball. No sand on tool string. Plug setting tool had small trace of sand in it.

21:00 Stage 33 Frac: Open Well SICP 4,536 psi. Pump Stage #33. Pumped 1,500 gals 15% HCl, pumped 387,450 gals of Slickwater, w/ 96,260 lbs 100 mesh, 220,540 lbs 40/70 White, Max psi: 9,821 psi, Avg psi: 8,324 psi, Max rate: 83.1 bpm, Avg rate: 78.7 bpm, .89 Frac. Gradient. Approx load to rec: 9,225 bbls. ISIP: 5,228 psi, 5 min: 4,875 psi, 10 min: 4,786 psi, 15 min: 4,735 psi, 5 1/2" x 7" 3500 psi. Frac pumped as designed. Breakdown PSI- 7,526.

23:30 Stage #34 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50#

Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4,730 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,400 psi, 351 FPM, Spot frac plug @ 12,027'. 4,710 psi SIP, Set frac plug @ 12,027', PU & Fire Gun #1 @ 12,001'-12,002', 11 Shots. P/U and Fire Gun #2 @ 12,951'-12,952', 10 Shots. P/U & Fire Gun #3 @ 11,906'-11,907', 10 Shots. P/U & Fire Gun #4 @ 11,851'-11,852', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 9 bpm , Max Pressure 5,500 PSI , Total bbl pumped 48 bbl. Drop 2.125" Obsidian Frac Ball. No sand on tool string. Plug setting tool had small trace of sand in it.

01:45 Stage 34 Frac: Open Well SICP 4,434 psi. Pump Stage #34. Pumped 1,500 gals 15% HCl, pumped 391,986 gals of Slickwater, w/ 94,600 lbs 100 mesh, 220,900 lbs 40/70 White, Max psi: 9,684 psi, Avg psi: 8,552 psi, Max rate: 82.9 bpm, Avg rate: 77.4 bpm, .87 Frac. Gradient. Approx load to rec: 9,333 bbls. ISIP: 5,036 psi, 5 min: 4,630 psi, 10 min: 4,523 psi, 15 min: 4,466 psi, 5 1/2" x 7" 3500 psi. Frac pumped as designed. Breakdown PSI- 6,877.

04:30 Stage #35 Pump Down. P/U 4 1/2" Obsidian Ball Drop Frac Plug for 4 1/2, 13.50# Csg on Baker 10 setting tool & 3-1/8" - 4 Cluster Perf Assy . Test Lubricator to 9,500 PSI. Open Well SICP 4320 psi. RIH & get on depth w/ MJ @ 10,750'-10,772'. RIH & Pump Down @ 9 bpm @ 5,400 psi, 351 FPM, Spot frac plug @ 11,827'. 4,710 psi SIP, Set frac plug @ 11,827', PU & Fire Gun #1 @ 11,801'-11,802', 11 Shots. P/U and Fire Gun #2 @ 11,759'-11,760, 10 Shots. P/U & Fire Gun #3 @ 11,701'-11,702', 10 Shots. P/U & Fire Gun #4 @ 11,659'-11,660', 9 Shots(All Scalloped Perf Guns, 6 SPF, 60 Degree Phasing, 19 Gram Charge,.38 EHD.)POOH, SWI, LD w/ Baker 10 setting tool & 3 1/8" - 4 Cluster spent Perf Assy . Verified all shots fired , Max Rate 6 bpm , Max Pressure 4930 PSI , Total bbl pumped 22 bbl. Drop 2.125" Obsidian Frac Ball. No sand on tool string or in plug setting tool.

### 03/19/2017

Rig Name: Energy Service Company #303

06:00 PJSM

06:15 Stage 35 Frac: Open Well SICP 4,244 psi. Pump Stage #35. Pumped 1,500 gals 15% HCl, pumped 414,120 gals of Slickwater, w/ 94,780 lbs 100 mesh, 239,140 lbs 40/70 White, Max psi: 10,072 psi, Avg psi: 8,402 psi, Max rate: 84.1 bpm, Avg rate: 78.7 bpm, .88 Frac. Gradient. Approx load to rec: 9,860 bbls. ISIP: 5,033 psi, 5 min: 4,774 psi, 10 min: 4,681 psi, 15 min: 4,649 psi, 5 1/2" x 7" 3500 psi. Frac pumped as designed. Breakdown PSI- 7,535. Total load to recover- 349,983 bbls.

09:15 SWI. PJSM, discuss safe & proper RD operations. RD Frac Tech frac fleet, Fesco, & CER test pump. Frac Tech, Fesco, & CER off location @ 17:00.

17:00 Spot & set Sand-X.

18:00 PJSM

18:15 RU Cretic 2 3/8" CTU Standard Safety H2S package, & Rock Water plug catcher & flow back iron.

20:00 Pull test weld on connector to 35K. Load coil w/81 bbls. fresh water, function test BHA 3 bpm @ 2800 psi. PSI test lubricator & flow back iron to 7500 psi. Tested good.

21:00 Wait on Nichols Oil Tools Mixing Plant & half pits.

23:00 Mixing plant on location and RU. Half pits spotted.

00:45 Open well WHP 3,995. RIH with 2 3/8" CT & KLX Drill out BHA as follows. 3 3/4" Butterfly Mill, 2 7/8" NOV Power Plus 3.5 BPM max Motor, 2 7/8" NOV Agitator 150 gal/min max, 2 7/8" Circulating Sub, 2 7/8" Hyd. Disconnect, 2 7/8" Terra Force Jar, 2 7/8" Dual Back PSI Valve. 28.96' over all length. 150' into hole started pumping .5 BPM @ WHP 4015 CP 4020.

02:30 Weight check @ 10,600', 30K up & 12K down. Continue to RIH to first plug. 2.5 BPM @ WHP 4060 CP 5832.

03:30 Tag Plug #1 @ 11,839,. 2-3k WOB, Circulating pressure 6,560 psi, WH pressure 3920 psi. 3 bpm in & out. Thru plug in 13 minutes. Send 10 bbl polymer sweep. Continue RIH with coil. Plug 1 sweep back on time. Sand and plug parts in catcher.

04:00 Tag Plug #2 @ 12,041'. 2-3k WOB, Circulating pressure 6390 psi, WH pressure 3815 psi. 3 bpm in & out. Thru plug in 14 minutes. Send 10 bbl polymer sweep. Continue RIH with coil. Sweep back on time. Sand & plug parts in catcher.

04:30 Tag Plug #3 @ 12,237'. 2-3k WOB, Circulating pressure 6410 psi, WH pressure 3820 psi. 3 bpm in & out. Thru plug in 16 minutes. Send 10 bbl polymer sweep. Continue RIH with coil. Sweep back on time. Sand & plug parts in catcher.

05:00 Tag Plug #4 @ 12,437'. 2-3k WOB, Circulating pressure 6210 psi, WH pressure 3800 psi. 3 bpm in & out. Thru plug in 26 minutes. Send 10 bbl polymer sweep. Continue RIH with coil.

05:30 Shift change.

### 03/20/2017

Rig Name: Energy Service Company #303

06:00 PJSM

06:15 Tag Plug #5 @ 12,642'. 2-3k WOB, Circulating pressure 6,250 psi, WH pressure

3,800 psi. 3 bpm in & out. Thru plug in 13 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #4, & sweep back on time. Continue RIH with coil.

07:00 Tag Plug #6 @ 12,836'. 2-3k WOB, Circulating pressure 6,300 psi, WH pressure 3,800 psi. 3 bpm in & out. Thru plug in 26 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #5, & sweep back on time. Continue RIH with coil.

07:45 Tag Plug #7 @ 13,048'. 2-3k WOB, Circulating pressure 6,275 psi, WH pressure 3,870 psi. 3 bpm in & out. Thru plug in 20 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #6, & sweep back on time. Continue RIH with coil.

08:30 Tag Plug #8 @ 13,236'. 2-3k WOB, Circulating pressure 6,250 psi, WH pressure 3,780 psi. 3 bpm in & out. Thru plug in 18 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #7, & sweep back on time. Continue RIH with coil.

09:00 Tag Plug #9 @ 13,430'. 2-3k WOB, Circulating pressure 6,200 psi, WH pressure 3,760 psi. 3 bpm in & out. Thru plug in 20 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #8, & sweep back on time. Continue RIH with coil.

09:30 Plugs 10-18 were drilled on previous drillout. Wash down to plug #19.

11:00 Tag Plug #19 @ 15,429'. Circulating pressure- 6,150 psi, WH pressure- 3,800 psi. Pumped 10-10-10 sweeps, wait for sweeps to clear reel, PUH @ 35 fpm to 10,650' for short trip, pulling 40K, no drag. Curve sweeps arrived on time, brought back very little sand and very few plug parts. @ 10,650', wellbore clean, TIH @ 65 fpm down to plug #19.

15:00 Tag & drill Plug #19 @ 15,429'. 2-3k WOB, Circulating pressure 6,350 psi, WH pressure 3,800 psi. 3 bpm in & out. Thru plug in 13 minutes. Send 10 bbl polymer sweep. Continue RIH with coil.

15:30 Tag Plug #20 @ 15,612'. 2-3k WOB, Circulating pressure 6,400 psi, WH pressure 3,800 psi. 3 bpm in & out. Thru plug in 17 minutes. Send 10 bbl polymer sweep. Good plug parts & light sand back from plug #19, & sweep back on time. Continue RIH with coil.

16:00 Tag Plug #21 @ 15,817'. 2-3k WOB, Circulating pressure 6,300 psi, WH pressure 3,800 psi. 3 bpm in & out. Thru plug in 15 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #20, & sweep back on time. Continue RIH with coil.

16:45 Tag Plug #22 @ 16,012'. 2-3k WOB, Circulating pressure 6,300 psi, WH pressure 3,800 psi. 3 bpm in & out. Thru plug in 18 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #21, & sweep back on time. Continue RIH with coil.

17:30 PJSM

18:00 Tag Plug #23 @ 16,212'. 2-3k WOB, Circulating pressure 6,300 psi, WH pressure 3,750 psi. 3 bpm in & out. Thru plug in 19 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #22, & sweep back on time. Continue RIH with coil.

18:15 Tag Plug #24 @ 16,416'. 2-3k WOB, Circulating pressure 6,300 psi, WH pressure 3,715 psi. 3 bpm in & out. Thru plug in 28 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #23, & sweep back on time. Continue RIH with coil.

18:45 Tag Plug #25 @ 16,609'. 2-3k WOB, Circulating pressure 6,300 psi, WH pressure 3,680 psi. 3 bpm in & out. Thru plug in 19 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #24, & sweep back on time. Continue RIH with coil.

19:30 Tag Plug #26 @ 16,816'. 2-3k WOB, Circulating pressure 6,100 psi, WH pressure 3,720 psi. 3 bpm in & out. Thru plug in 19 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #25, & sweep back on time. Continue RIH with coil.

20:45 Tag Plug #27 @ 17,016'. 2-3k WOB, Circulating pressure 6,300 psi, WH pressure 3,700 psi. 3 bpm in & out. Thru plug in 15 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #26, & sweep back on time. Continue RIH with coil.

21:30 Tag Plug #28 @ 17,213'. 2-3k WOB, Circulating pressure 6,300 psi, WH pressure 3,700 psi. 3 bpm in & out. Thru plug in 22 minutes. Send 10/10/10 bbl polymer sweep. Good plug parts & sand back from plug #27, & sweep back on time. Continue RIH with coil.

22:15 Tag Plug #29 @ 17,413'. 2-3k WOB, Circulating pressure 6,020 psi, WH pressure 3,640 psi. 3 bpm in & out. Thru plug in 32 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #28, & sweep back on time. Continue RIH with coil.

23:30 Tag Plug #30 @ 17,603'. 2-3k WOB, Circulating pressure 6,100 psi, WH pressure 3,640 psi. 3 bpm in & out. Thru plug in 24 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #29, & sweep back on time. Continue RIH with coil.

01:00 Tag Plug #31 @ 17,808'. 2-3k WOB, Circulating pressure 5,950 psi, WH pressure 3,700 psi. 3 bpm in & out. Thru plug in 17 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #30, & sweep back on time. Continue RIH with coil.

02:30 Tag Plug #32 @ 18,006'. 2-3k WOB, Circulating pressure 5,950 psi, WH pressure 3,670 psi. 3 bpm in & out. Thru plug in 35 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug #31, & sweep back on time. Continue RIH with coil.

04:00 Tag Plug #33 @ 18,208'. 2-3k WOB, Circulating pressure 6,050 psi, WH pressure 3,600 psi. 3 bpm in & out. Thru plug in 22 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug 32 #, & sweep back on time. Continue RIH with coil.

### **03/21/2017**

Rig Name: Energy Service Company #303

06:00 PJSM

06:15 Tag Plug #34 @ 18,409'. 2-3k WOB, Circulating pressure 6,200 psi, WH pressure 3,600 psi. 3 bpm in & out. Thru plug in 48 minutes. Send 10 bbl polymer sweep. Good plug parts & sand back from plug 33 #, & sweep back on time. Continue RIH with coil.

08:00 Tag PBTD @ 18,560', PU 20', pumped 10-10-10 sweeps, wait for sweeps to clear reel, start POOH @ 35 fpm, pulling 47K, no drag/no issues. @ 13,120', pumped 10 bbl sweep to meet coil @ the curve. Curve sweep arrived to surface on time, got good plug parts & sand back. Continue POOH, OOH w/ CT & BHA @ 15:30. SWI, SIP- 3,900 psi, break & LD KLX BHA.

15:30 PJSM discuss proper RD operations. RD Cretic CTU, Nichols Oil Tools chemical mixing plant, & Standard Safety.

17:30 PJSM

18:00 CER RD Frac Stack. RU Cactus TBG Head. Rock Water RU Sand Traps, Flow back manifold, & flow back iron. Out Law Transports haul & dispose of fluids in half pits & Sand X. Out Law spot 2 flow back tanks. Prepare for Flow Back operations. Cretic CTU off location @ 19:45.

22:00 NU Cactus TBG. well head & tested to 250 psi., held for 5 minutes, tested to 5,000 psi held for 5 minutes. Tested good. 2 Half pits & Sand X off location.

00:00 Rock Water continue to RU for Flow Back.

### **03/22/2017**

Rig Name: Energy Service Company #303

06:00 SI, no activity

09:00 PJSM

09:15 RU Hydrovac truck & clean out half pit. RU ESD valve to production tree, install spider gauges, tie in Rockwater flowback iron to facilities.

14:00 PJSM, Open well on 10 choke and begin flowing well to battery. SICP- 3,720 psi

18:00 PJSM, continue to flowback well. Final report, turned over to production.