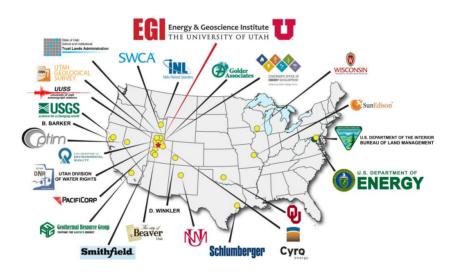


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End of Well Report

Seismic Monitoring Wells





Prepared by:

Geothermal Resource Group, Inc.

for

University of Utah (UofU)



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Summary

Well 78-32, drilled vertically to a depth of 3280 ft., is the intermediate seismic monitoring well of the exploration program in the Utah Frontier Observatory for Research in Geothermal Energy (FORGE) Enhanced Geothermal System (EGS) prospect area. The project is administered by the U.S. Department of Energy (DOE) and managed by the University of Utah (U of U). As part of the activities for the FORGE project and based on discussions with DOE and others, the University of Utah drilled 78-32 (one of 2) seismic monitoring hole to host seismic monitoring instruments to collect data during injection in Well 58-32. This wellbore will be used to monitor the seismic signatures during testing and injection.

Achieved Well Objectives

The achieved objectives for monitoring hole 78-32 were:

- Drilled and completed the seismic monitoring well to 3280 ft MD GL with hole below the alluvium/granite contact (contact found at 2615')
- Cemented in fiberoptic monitoring cable on outside of 5-1/2" casing to 3237'
- Carried out aquifer testing at ~1000 ft
- Wellbore and surface equipment prepared to monitor the seismic signatures during testing and injection.
- 78-32 monitoring hole was drilled toward the southeastern portion of the FORGE footprint (Figure 1)

Health and Safety Program

The health and safety of all personal, and maintaining a clean, non-hazardous work environment (HSE), were the top priority during drilling and testing operations. The objective was to comply with the safety and environmental standards of the U of U.

On location, the project HSE plan was implemented, including:

- Daily safety meetings were held prior to each shift, addressing the importance of proper and safety conscious crew behavior
- Operation specific safety meetings with all personnel involved to identify safety risks and relevant precautions prior to specific tasks such as casing running, cementing, and logging
- Clear identification of muster areas at the location and clear lines communication for all personnel

No LTIs were reported during operations, no environmental hazards or any environmental impact were observed and there were no major or catastrophic service quality incidents.





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Well Data

All depth measurements are referred to the rotary Kelly bushing (RKB), which is 5.70 ft above ground level.

Area:	Milford, Utah
Field:	FORGE, Utah
Operator:	University of Utah
Drilling Rig:	Hydro Resources Schramm T200XD # 10031
Well Name:	78-32
Drilling Project Manager	Geothermal Resource Group
Well Type:	Intermediate depth monitoring well
Wellhead Location:	Lat/Long: 38.500182, -112.883229
	UTM E 335485.6, N 4263156.3
	Elevation: 5509.5 ft ASL
Coordinate Reference System:	WGS84 UTM Zone 12
Rotary Table Height (ft):	5.70 ft above GL.
Total Depth (ft):	3,280 ft.

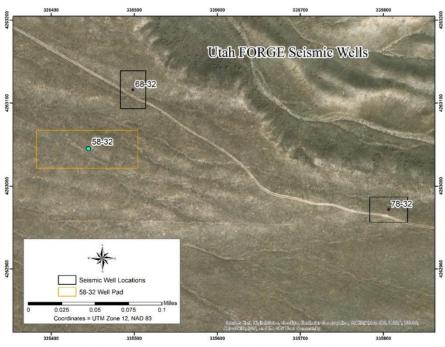


Figure 1: Drilling locations, monitoring wells 68-32 and 78-32 and treatment well 58-32





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Casing Properties and Well Profile

The casing program for the intermediate depth hole are shown in Table 1 and the as-built well profile is shown Figure 2.

Section	Hole Size (")	Casing Size (")	Specifications	Nominal ID / Drift ID / Coupling OD (")	Setting Depth (ft)	Remarks
Conductor	24	14	Welded	13.25	69	Pre-set, with a dry hole digger and cemented in place
Surface	12.25	9.625	36#, J-55, LTC	8.921/ 8.765/ 10.625	704	Cemented in place to surface
Production	8.75	5.5	17#, K-55, BTC	5.00/ 4.767/ 6.050	3269	Cemented in place to surface

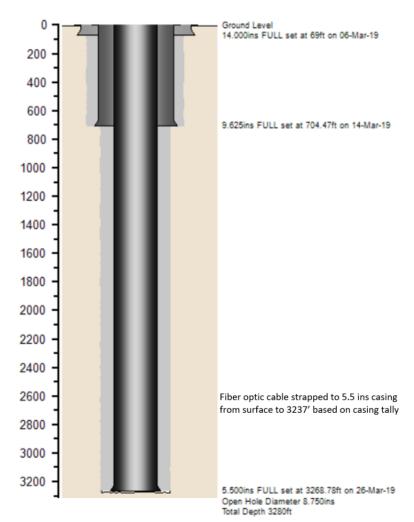


Figure 2: 78-32 wellbore as built.





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Drilling Summary (Intermediate Depth well 78-32)

University of Utah had obtained the necessary permit from Utah Division of Water Rights for drilling and rig mobilization and demobilization, and the necessary environmental clearance for drilling of 78-32. Operations were conducted in daylight hours only.

Conductor (preset)

The road to the rig was graded by Rollins Construction and two 500 bbl baker tanks were spotted on location. The conductor drilling rig was contracted by University of Utah, it arrived on location at 19:00 hours on 4 March 2019. The conductor was set at 69 ft (from GL) in a 24" hole drilled with conductor drilling rig on 5 March and cemented in place using a tremie pipe and concrete pump truck to surface with 6.5 cubic yards with 50% excess volume.

Rig mobilization and Rig up

Hydro Resources rig #10031 (model:Schramm T200xd Portable Top Head drilling rig) was contracted by the University of Utah, on a turnkey contract to drill and install the surface casing at 700 ft on the 3000 ft well and drill out to 1000 ft changing to a footage rate for drilling from 1000 ft to the total depth. The rig was mobilized on 2 March and rigged on 78-32 well on 13 March after completing the drilling of well 68-32.

12-1/4" Hole Section and 9-5/8" Casing

A pre-spud meeting was held on 13 March at 11:00 hours and drilling began at 12:00 hours. After circulating to condition the mud, a new PDC bit was used to drill 12-1/4" hole from 69 ft to 716 ft in 12 hours with one 12-1/4" bit run and full returns, using a fresh water, low solids non-dispersed mud system. At the hole TD, the well was conditioned, and a single shot directional survey was performed (inclination was 1.8 deg at 700 ft). The hole was circulated clean prior to running 18 joints of 9-5/8" casing to 706 ft. The safety meeting was held, the cementing company ProPetro hooked up the cementing lines and the cementing head with the wiper plug. Pumped 20 bbls of cement flush with green dye, cemented with 33.5 bbls of 13.5 ppg of lead cement and 28.7 bbls of 15.8 ppg Class G cement slurry and displaced with 48.3 bbls of water, with full returns, no cement to surface. Cement in place at 1500 hours. After waiting on cement, a string line was run and tagged top of cement at 34 ft RKB. A secondary cement job of 3.5 bbls of 15.5 ppg of Portland Type 2 cement was performed to bring cement to surface. Once this was completed, the 9-5/8" casing was cut off and the wellhead and BOPE for drilling of the next section was installed. An 11" 3M single gate BOPE was nippled up and function tested. Then the rig mast was raised and pinned in place. The casing, wellhead and BOPE were tested to 700 psi and witnessed by the Utah Department of Water Resources inspector.

8-3/4" Hole Section and 5-1/2" Casing

On 15 March, after waiting on cement, an 8-3/4" PDC bit and BHA assembly were run in the hole and tagged cement at 590 ft. Hard cement was cleaned to 716 ft, then drilled new formation from 716 ft to 1000 ft with full returns. At this depth the hole was circulated clean and changed over to fresh water in preparation for a flow test. A single shot deviation survey was performed at 980 ft, showing an inclination was 4 degrees.





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The 8-3/4" bit and BHA were laid down and open-ended drill pipe was run back in the hole to 500 ft and the hole was unloaded, then the drill pipe was run in the hole to 900 ft and an air lift procedure was performed with a steady yield of 200 gpm. A recovery test showed a constant fluid level at 545 ft. Pulled out of hole with open ended drill pipe.

The next day, the 8-3/4" bit and BHA was run in the hole to recommence drilling. Drilling rate was kept at a constant, measured rate in attempt to straighten the hole (timed drilling) and several single shot deviation surveys were performed. Drilling from 1000 to 1267 ft was completed with full returns using a fresh water, low solids, non-dispersed mud system. Deviation survey at 1267 ft was 3.7 degrees. From 1267 ft to 1867 ft lost circulation material (LCM) was added to combat slight losses. Time drilled to 2617 ft before pulling out to change bits (granite contact detected). A deviation survey at 2400 ft recorded 4.7 degrees. A new 8-3/4" tri cone bit was used to drill from 2617 ft to 3077 ft, with full returns. Another new 8-3/4" tricone bit was used to drill from 2923 ft to 3077 ft, with the deviation survey at 3057 ft showing 2 degrees inclination. The bit was changed due to low rate of penetration and drilled from 3077 ft to 3280 ft. Then the BHA was again pulled out of hole due to poor ROP. At the surface it was found that the bit and bottom hole stabilizer were left in the hole (a total length of material left in hole was 6 ft). It was decided to terminate the hole at this depth as the objectives of drilling 3000' and below the alluvium/granite contact had been achieved.

After completion of drilling 74 joints of 5-1/2" casing were run with Silixa fiber optic cable strapped on from below coupling on the float collar and float shoe set at 3268ft. The fiber optic cable was successfully tested. ProPetro rigged up the cementing lines and pumped 271 bbls of 12.5 ppg cement and displaced with 75.4 bbls of water, bumped plug at 18:33 hours on 26 March and had cement returns to surface. While waiting on cement preparations were made to rig down and move off location. The Hydro Resources rig crew performed a secondary cement job to bring cement to surface from 68 ft. A permanent wellhead was installed consisting of a 6" 2M with a 3" threaded shooting flange and a 3" threaded crown valve (Figure 3). The rigging down was completed on 28 March 28. The Silixa fiber optic crew performed a splice on their cable reel and left remaining cable at surface ready for hooking up to monitoring equipment (Figure 4).





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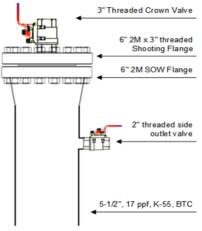


Figure 3: Wellhead installed at 78-32.

Cementing

The surface 9-5/8" casing was cemented with Portland cement without fly ash and Class G Cement for the 5-1/2" casing. The primary cementing job on 9-5/8" casing was done by ProPetro and the secondary top up cement job was performed by Hydro Resources. The primary cementing job on 5-1/2" casing was done by ProPetro and the secondary top up cement job was performed by Hydro Resources. On 17 April 2019, Schlumberger ran a Gamma Ray – CCL Log in the well 78-32 to a depth of 3280 ft.





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Figure 4: Completed 78-32 wellbore with fiber optic cable at surface.

Mudlog

Ryan Gall at the UGS collected the cutting samples every 10 feet and prepared the final lithologic log shown in the following pages for the well 78-32. The alluvium/granite contact was shown at ~2615'.





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NERGY	Verified by:	Seismic Monitoring Well	Final	Page 11 of 28
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Well ID:	78-32		Geological Lithologic L	•	Page <u>1</u> of <u>17</u>
Well Locat	ion: Beaver Count	y, UT			
				12 N	
N S	ft, w	ft_from	Corner, Se	c, Ts	R ^E W, SLBM USM
Start Date		Completion Date <u>3/</u>	<u>26/2019</u> Dri	ller <u>T. Curtis, Hydro I</u>	Resources
Borehole	<u>17 1/2"</u> from	_0to60	Casing	13 3/8"	from _0 to _60
Diameter	12 1/4" from				<u>TC</u> from <u>60</u> to <u>716</u>
	8 3/4" from		Diameter		TC from <u>716</u> to <u>3280</u>
Screen		from	to	Ground Elevation: 170	
Type & Diameter		from	to	Logged By: <u>R. Gall</u>	
Water Levr	el Information	Gravel		ang - angular	qtz - quartz
	er Level 537'	Coarse & m		cly - clay crs - coarse	sbang - subangular sbrnd - subrounded
	el Date _3/16/2019	Clay and sil		f - fine	slt - silt
		- Rhyolite		fldspr - feldspar grvl - gravel	snd - sand tr - trace
Measured	From <u>Ground lvl</u>	- Diorite		m - medium	vf - very fine
DEPTH (FT)	LITHOLOGY	DRILLING NOTES		LITHOLOGY DESCRIP	TION
_		Spud @ 0600 hrs	0-60- No samp	les collected.	
10 —		3/13/2019			
-					
20 —					
30 —					
-					
40 —			All cand and or	avel, unless otherwise no	ted is dominantly
			felsic (>85% qu	artz and k-feldspar) with	
-			(amphibole and	biotite).	
60 — _	ō c ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° °			g-sbang grvl. 45% ang-	-sbang crs snd. 25%
70 —	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			Subordinate cly.	1
-	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		70-80- 50% an sbrnd f snd. Su	g-sbang grvl. 30% ang- bordinate cly.	-sbang crs snd. 20%
80 —	d 4		80-90- 5% ang sbrnd f snd. Su	-sbang grvl. 15% ang-s bordinate cly.	bang crs snd. 80%
90 —			90-100- Tr grv	l. 50% ang-sbang crs sr Ssnd. Subordinate cly.	nd. 30% sbang m sand.





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DEPTH	LITHOLOGY	DRILLING NOTES	LITHOLOGY DESCRIPTION
_ 110	Ц _с о С ₅ о С ⁰		100-110- 5% ang-sbang grvl. 30% ang-sbang crs snd. 65% sbrnd f snd. Subordinate cly. 110-120- 5% ang-sbang grvl. 10% ang-sbang crs snd. 10%
120 _	Do C		sbang m snd. 75% sbrnd f snd. Subordinate cly.
130 -			120-130- Tr grvl. 35% ang-sbang crs snd. 15% ang-sbang m snd. 50% sbrnd f snd. Subordinate cly.
130 -			130-140- 5% ang grvl. 20% ang-sbang crs snd. 60% sbang- sbrnd m snd. 15% sbrnd f snd. Subordinate cly.
140 -			140-150- 5% ang grvl. 50% ang-sbang crs snd. 20% ang- sbang m snd. 25% sbrnd f snd. Subordinate cly.
-			150-160- 5% ang grvl. 60% ang-sbang crs snd. 10% sbang m snd. 25% f sbrnd snd. Subordinate cly.
160 — —			160-170- 5% ang grvl. 55% ang-sbang crs snd. 25% sbang m snd. 15% f sbrnd snd. Subordinate cly.
170 —	0°4°0°4°0°4°0°4°0°4°0°4°0°4°0°4°0°4°0°4		170-180- 90% ang-sbang grvl. 10% sbang-sbrnd m-f snd. Subordinate cly.
180 —	0 C		180-190- 15% ang grvl. 10% ang crs snd. 10% m sbang snd. 65% sbrnd f snd. Subordinate cly.
190 — _	D 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6		190-200- 10% ang-sbang grvl. 40% ang-sbang crs snd. 30% ang-sbang m snd. 20% sbrnd f-vf snd. Subordinate cly.
200 —	0 6 0 8 0 0 9 0 8 0 0 9 0 0 9 0 0 8 0 8	200' @ 1345 hrs 3/13/2019	200-210- 40% ang grvl. 35% ang crs snd. 10% sbang m snd. 15% sbang-sbrnd vf-f snd. Subordinate cly.
210	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		210-220- 5% ang grvl. 20% ang-sbang crs snd. 5% sbang m snd. 70% sbrnd f-vf snd. Subordinate cly.
220			220-230- 40% ang grvl. 40% ang crs snd. 20% sbang m-f snc Subordinate cly.
230	0 8 9 0 2 9		230-240- 15% ang grvl. 30% crs ang snd. 35% ang-sbang m snd. 20% vf-f sbrnd snd. Subordinate cly.
240			240-250- 10% ang grvl. 30% ang crs snd. 25% sbang m snd. 35% sbrnd vf-f snd. Subordinate cly.
250 <u> </u>	C 0 0 0 0 0		250-260- 20% ang grvl. 30% ang crs snd. 20% ang-sbang m snd. 30% ang-sbrnd vf-f snd. Subordinate cly.
260	0 6 0 0 0 0 6 0 0 0 6 0 0 0 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		260-270- 35% ang grvl. 15% ang crs snd. 10% ang-sbang m snd. 40% ang-sbrnd vf-f snd. Subordinate cly.
270	0.0.0		270-280- Tr grvl. 5% ang crs snd. 95% sbang-sbrnd vf-f snd. Subordinate cly.
280			280-290- Tr grvl. 15% crs ang snd. 85% sbang-sbrnd vf-f snc Subordinate cly.
290	0.0		290-300- 20% ang grvl. 15% ang crs snd. 15% sbang m snd. 40% sbang-sbrnd vf-f snd. Subordinate cly.





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RGY	Verified by:	Seismic Monitoring Well	Final	Page 13 of 28
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DEPTH	LITHOLOGY	DRILLING NOTES	LITHOLOGY DESCRIPTION
		2002 0 15151	200.210 No comple
-		300' @ 1515 hrs 3/13/2019	300-310- No sample.
310 —		5/15/2019	310-320- 5% ang grvl. 60% ang crs snd. 15% sbang m snd.
-			20% sbang-sbrnd f-vf snd. Subordinate cly.
320 —	ĊIJ°6.º.U 6.º.	Rig maintenance	320-330- 55% ang grvl. 15% ang crs snd. 10% sbang m snd.
-	¢ 0 0 0 0 0	320' @ 1600 hrs	20% sbang m-f snd. Subordinate cly.
330 —	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3/13/2019	
-	P 0 0 0 0 0 0 0 0 0		330-340- 90% ang grvl. 10% sbang m-f snd. Subordinate cly.
340 —	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
_	o o		340-350- 10% ang grvl. 85% ang crs snd. 5% ang-sbrnd m-f
350 —	C		snd. Subordinate cly.
_			350-360- 30% ang grvl. 30% ang crs snd. 20% sbang m snd.
360 —	0.0		20% sbang-sbrnd f-vf snd. Subordinate cly.
			360-370- 90% ang grvl. 10% ang crs snd. Significant red cly.
370 —			
570 -	.0 0 0		370-380- Tr grvl. 30% ang crs snd. 5% ang m snd. 65% sbang
200	0.0		sbrund f-vf snd. Subordinate cly.
380 —	0.000		380-390- 40% ang grvl. 10% ang m snd. 50% sbang-sbrnd
-	e o e .		f-vf snd. Subordinate cly.
390 —	0.0 × 0.0 ×		390-400- 40% ang crs snd. 10% ang m snd. 50% sbang-sbrnd
-	0 0 0		f-vf snd. Subordinate cly.
400 —		400' @ 1815 hrs	400-410- 5% ang grvl. 25% ang crs snd. 70% sbrnd f snd.
-	. (0 	3/13/2019	Subordinate cly.
410 —	0		410-420- Tr grvl. 5% ang crs snd. 5% ang-sbang m snd. 90%
-	- °		sbrnd f snd. Subordinate cly.
420 —	P		420-430- 10% ang grvl. 70% crs ang snd. 10% sbang m snd.
-			10% sbrnd f-vf snd. Subordinate cly.
430 —	, , , , , , , , , , , , , , , , , , ,		430-440- 25% ang grvl. 45% ang crs snd. 20% sbang m snd.
-	0 0 ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° °		10% sbrnd f-vf snd. Subordinate cly.
440 —			440-450- 30% ang grvl. 50% ang crs snd. 20% sbang-sbrnd
-	9 0 °		m-f snd. Subordinate cly.
450 —	°.°.		
-	0.0		450-460- Tr grvl. 15% ang crs snd. 15% ang m snd. 70%
460 —	0.0		sbang-sbrnd f-vf snd. Subordinate cly.
-	· · · · · · · · · · · · · · · · · · ·		460-470- 70% crs ang snd. 15% sbang m snd. 15% sbrnd f-vf
470 —			snd. Subordinate cly.
_			470-480- 5% ang grv1. 45% ang crs snd. 30% sbang m snd.
480 —	• • • • • • • • • • • • • • • • • • •		20% sbrnd f-vf snd. Subordinate cly.
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		480-490- 5% ang grvl. 45% ang crs snd. 30% sbang m snd.
400			20% sbrnd f-vf snd. Subordinate cly.
490 —	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		490-500- 50% ang grvl. 30% ang crs snd. 10% sbang-sbrnd
-			m-f snd. Subordinate cly.





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	LITHOLOGY	LITHOLOGY DESCRIPTION	
_		500 510 Tr and 50/ and and 200/ and should m and 200	
_		500-510- Tr grvl. 5% ang crs snd. 30% ang-sband m snd. 20%	
_	· · · · · · · · · · · · · · · · · · ·	ang-sbang f-vf snd. Significant orange cly.	
	C ° ° ° ° · · · ·	510-520- 5% ang grvl. 60% ang crs snd. 25% ang-sbang m sr	
500		10% sbang-sbrnd f-vf snd. Subordinate cly.	
520 —	· · · · · · · · · · · · · · · · · · ·		
	o 0 0 0	520-530- Tr grvl. 40% crs ang snd. 20% ang m snd. 40%	
	° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° °	sbang-sbrnd vf-f snd. Subordinate cly.	
530 —		530-540- 5% ang grvl. 35% ang crs sand. 40% ang-sbang m	
_	0 0 0		
	· · · · · · · · · · · · · · · · · · ·	snd. 20% sbang-sbrnd f-vf snd. Subordinate cly.	
540 —		540,550, 5% and and 40% and are send 25% and shand m	
_	· · · · · · · · · · · · · · · · · · ·	540-550- 5% ang grvl. 40% ang crs sand. 25% ang-sbang m	
	Co o o	snd. 30% sbang-sbrnd f-vf snd. Subordinate cly.	
550 —	0000	550-560- 40% ang grvl. 40% ang crs snd. 20% ang-sbang	
-	0 0 0 0 ³	m-f snd. Subordinate cly.	
560 —		In-i shu. Subbrumate ciy.	
	0'	560-570- Tr grvl. 25% ang crs snd. 35% ang-sbang m snd.	
-	• • • • •	40% sbrnd f-vf snd. Subordinate cly.	
570 -			
	°°°°°°°°°°	570-580- Tr grvl. 50% crs ang snd. 30% ang-sbang m snd.	
1	0.0.0	10% sbang vf snd. Subordinate cly.	
580 —	· · · · · · · · · · · · · · · · · · ·		
	0	580-590- 10% ang grvl. 35% ang crs snd. 40% sbang m snd.	
		15% sbang f-vf snd. Subordinate cly.	
590 —	o		
_	0	590-600- 15% ang grvl. 60% crs ang snd. 20% sbang m snd.	
	Ö 。	5% sbang f-vf snd. Subordinate cly.	
600 —	0.0.	600-610-Tr grvl 15% ang crs snd 20% shang m snd 65%	
_	с. С. о. о.	600-610-Tr grvl. 15% ang crs snd. 20% sbang m snd. 65% sbang-sbrnd f-vf snd. Subordinate cly.	
610 —		soang-sonna i-vi sina. Suborannate ery.	
	-C ₀ 0 	610-620- 5% ang grvl. 10% ang crs snd. 20% sbang m snd.	
-	. ° °	65% sbang-sbrnd vf-f snd. Subordinate cly.	
620	¢° ,		
	0	620-630- 5% ang grvl. 40% ang crs snd. 15% sbang m snd.	
	• • • • • • • • • • • • • • • • • • •	40% sbang-sbrnd snd. Subordinate cly.	
630 —	• • • • •	630-640- Tr grvl. 20% ang crs snd. 10% sbang m snd. 70%	
		sbang-sbrnd f-vf snd. Subordinate cly.	
640 —	•	640-650- Tr grvl. 20% ang crs snd. 10% sbang m snd. 70%	
4		sbang-sbrnd f-vf snd. Subordinate cly.	
650	° °	sound sound reversite. Subordinate ory.	
	C 0 0	650-660- 5% ang grvl. 25% ang crs snd. 15% sbang m snd.	
-	с° °	55% sbrnd-sbang f-vf snd. Subordinate cly.	
660 _			
	u e° ° °	660-670- 20% ang grvl. 20% ang crs snd. 20% sbang m snd.	
	0 0 0	35% sbang-sbrnd f-vf snd. Abundant red cly.	
670	6. ⁰ .0 6°		
	.a.e.a.	670-680- 30% ang grvl. 15% ang crs snd. 15% sbang m snd.	
	6.º0 6	40% sbang-sbrnd f-vf snd. Subordinate cly.	
680 —	0.0.n.	680-690- 5% ang grvl. 25% ang crs snd. 25% sbang m snd.	
_	° ° ° °	45% ang-sbrnd f-vf snd. Subordinate cly.	
	° ° ° ° · · · · · · · · · · · · · · · ·		
690 —	•	690-700- Tr grvl. 20% ang crs snd. 5% sbang m snd. 75%	
_	•	sbang sbrnd f-vf snd. Subordinate cly.	





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710 —	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Reached surface casing depth of	700-710- Tr grvl. 10% ang crs snd. 15% ang-sbang m snd. 20% sbang f snd. 55% vf sbang-sbrnd snd. Subordinate cly.
-	ο ο ις ο ο ο	716.47' (TD) True subsurface	710-716- 5% ang grvl. 15% ang crs snd. 25% ang-sbang m sr 55% sbang-sbrnd f-vf snd. Subordinate cly.
720 —	• • • • • • • • • • • • • • • • • • •	depth of 701.2' @ 0030 hrs 3/14/2019.	720-730- 20% ang crs snd. 15% ang-sbang m snd. 65% sbang sbrnd f-vf snd. Subordinate cly.
730 —		Run casing & cement.	730-740- 45% ang crs snd. 20% ang-sbang m snd. 35% sbang sbrnd f-vf snd. Subordinate cly.
740 —		BOP test @ 1100 hrs 3/15/19	740-750- 40% ang crs snd. 20% ang-sbang m snd. 30% sbang sbrnd f-vf snd. Subordinate cly.
750 —		Trip in hole @ 1700 hrs Resume drilling	750-760- Tr grvl. 55% ang crs snd. 20% ang-sbang m snd. 25% sbang-sbrnd f-vf snd. Abundant cly.
760 —		@ 2330 hrs 3/15/2019	760-770- 75% ang crs snd. 20% ang-sbang m snd. 5% sbang f-vf snd. Abundant cly.
770 —			770-780- 30% ang crs snd. 30% ang-sbang m snd. 40% sbang f-vf snd. Subordinate cly.
780 —	•		780-790- 5% ang crs snd. 10% ang-sbang m snd. 85% sbang f-vf snd. Abundant cly.
790 —	6. 6		790-800- 25% ang crs snd. 10% ang-sbang snd. 65% ang-sba f-vf snd. Subordinate cly.
800 —			800-810- 25% ang crs snd. 35% ang-sbang m snd. 40% ang- sbang f-vf snd. Subordinate cly.
810 —			810-820- Tr grvl. 5% ang crs snd. 15% ang-sbang m snd. 80% sbang f-vf snd. Subordinate cly.
820			820-830- 15% ang crs snd. 55% ang m snd. 30% sbang f-vf snd. Subordinate cly.
830 -	0 0 0 0 0		830-840- 10% ang crs snd. 10% ang m snd. 80% ang-sbang f-vf snd. Subordinate cly.
840	-9 -9 - 5 - 		840-850- Tr grvl. 10% ang crs snd. 15% ang m snd. 75% ang sbang f-vf snd. Subordinate cly.
850 <u> </u>	• • • • • • • • • • • • • • • • • • •		850-860- Tr grvl. 5% ang crs snd. 10% ang m snd. 85% ang- sbang f-vf snd. Abundant cly.
860			860-870- 15% ang crs snd. 30% ang m snd. 55% sbang f-vf snd. Subordinate cly.
870			870-880- 35% ang crs snd. 45% ang m snd. 20% sbang f-vf snd. Subordinate cly.
880			880-890- Tr grvl. 20% ang crs snd. 30% sbang m snd. 50% sbang f-vf snd. Abundant cly.
890 —	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		890-900- 10% ang crs snd. 30% ang m snd. 70% sbang f-vf snd. Abundant cly.





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DEPTH	LITHOLOGY	DRILLING NOTES	LITHOLOGY DESCRIPTION
910 —			900-910- 10% ang crs snd. 40% ang m snd. 50% ang-sbang f-vf snd. Subordinate cly. 910-920- 10% ang crs snd. 45% ang m snd. 45% ang-sbang f-vf snd. Subordinate cly.
920 —	0.00 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		920-930- 5% ang crs snd. 5% ang m snd. 90% ang-sbang f-vf snd. Subordinate cly.
930 —	0 0 0 0 0 0 0 0		930-940- Tr grvl. 10% ang crs snd. 10% sbang m snd. 80% ang-sbang f-vf snd. Subordinate cly.
940 —			940-950- 10% ang crs snd. 10% ang m snd. 80% sbang f-vf snd. Abundant cly.
950 —			950-960- 5% ang crs snd. 10% ang m snd. 85% sbang f-vf snd. Abundant cly.
960 —			960-970- 10% ang crs snd. 50% ang m snd. 40% ang-sbang f-vf snd. Subordinate cly.
970 —			970-980- Tr grvl. 20% ang crs snd. 40% ang m snd. 40% sbang f snd. Subordinate cly.
980 -			980-990- 30% ang crs snd. 45% ang m snd. 25% sbang f-vf snd. Subordinate cly.
990 -			990-1000- 25% ang crs snd. 40% ang m snd. 35% sbang f-vt snd. Subordinate cly.
1000 -		1000' @ 0005 hrs 3/16/2019.	1000-1010- Tr crs snd. 65% ang m snd. 35% ang f snd. Subordinate cly.
1010 -		Perform airlift 0600-0800 hrs	1010-1020- Tr crs snd. 40% ng m snd. 50% ang f snd. Subordinate cly.
1020		3/16/2019. Drilling on hold as stabilizers are	1020-1030- 40% ang m snd. 60% ang f snd. Subordinate cly.
1030 -	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	transported to site and installed to	1030-1040- 20% m ang snd. 80% ang f-vf snd. Almost all qtz snd; lacking fldspr like other samples. Subordinate cly.
1040 -	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	prevent further borehole deviation.	1040-1050- 15% ang crs snd. 15% ang m snd. 70% ang f-vf snd. Subordinate cly.
1060		Resume drilling @ 0900 hrs	1050-1060- 10% ang crs snd. 25% ang m snd. 65% ang f-vf snd. Subordinate cly.
1070	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3/17/2019	1060-1070- 5% ang crs snd. 20% ang m snd. 75% ang-sbang f-vf snd. Subordinate cly.
1070			1070-1080- 10% ang crs snd. 40% ang m snd. 50% ang-sban f-vf snd. V abdundant cly.
	e		1080-1090- 5% ang crs snd. 10% ang m snd. 55% ang-sbang f-vf snd. Subordinate cly.
1090 —	0.0.		1090-1100- 5% ang crs snd. 15% ang m snd. 80% ang-sbang f-vf snd. Subordinate cly.





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 1110			1100-1110- 10% ang crs snd. 60% ang m snd. 30% ang-sbang f-vf snd. Subordinate cly. 1110-1120- 15% ang crs snd. 20% ang-sbang m snd. 65% ang-
1120 —			sbang f-vf snd. Subordinate cly. 1120-1130- 20% ang crs snd. 35% ang-sbang m snd. 45% sbang f-vf snd. Subordinate cly.
1130 —			1130-1140- 20% crs ang snd. 40% ang m snd. 40% sbang f snd. Subordinate cly.
1140 — 	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		1140-1150- 20% ang crs snd. 15% ang-sbang m snd. 65% sbang f-vf snd. Subordinate cly.
1150 —		1050' @ 1130 hrs 3/17/2019	1150-1160- 5% ang crs snd. 30% ang-sbang m snd. 65% sbang f-vf snd. Subordinate cly.
1160 — 			1160-1170- 10% ang crs snd. 40% ang m snd. 50% sbang f-vf snd. Subordinate cly.
1180 —			1170-1180- 5% ang crs snd. 70% ang m snd. 25% sbang f-vf snd. Subordinate cly.
1190 —	6 0		1180-1190- 5% ang crs snd. 25% ang m snd. 70% sbang f-vf snd. Subordinate cly.
1200 —			1190-1200- 15% ang crs snd. 55% ang m snd. 30% ang-sbang vf-f snd. Subordinate cly.
1210			1200-1210- 15% ang crs snd. 65% ang m snd. 20% sbang f-vf snd. Subordinate clay.
1220			1210-1220- 15% ang crs snd. 60% ang m snd. 25% sbang f-vf snd. Subordinate cly.
1230 _			1220-1230- 30% ang crs snd. 55% ang m snd. 15% sbang f-vf snd. Subordinate cly.
1240			1230-1240- 10% ang crs snd. 40% ang m snd. 50% ang-sbang f-vf snd. Subordinate cly.
1250 —			1240-1250- 5% ang crs snd. 40% ang m snd. 55% ang-sbang f-vf snd. Subordinate cly.
 1260		1250' @ 1330 hrs 3/17/2019	1250-1260- 15% ang crs snd. 35% ang m snd. 50% ang-sbang f-vf snd. Subordinate cly.
			1260-1270- 20% ang crs snd. 60% ang m snd. 20% ang-sbang f-vf snd. Subordinate cly.
			1270-1280- 25% ang-sbang crs snd. 40% ang-sbang m snd. 35% ang-sbang f-vf snd. Subordinate cly.
1290 —			1280-1290- 30% ang crs snd. 40% ang m snd. 30% ang-sbang f-vf snd. Subordinate cly.
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		1290-1300- 30% ang crs snd. 30% ang m snd. 40% ang-sbang f-vf snd. Subordinate cly.





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1310 —	. 0. 0. 9. 0. 9. 0. 9. 0. 9. 0. 9. 0.		1300-1310- 5% ang crs snd. 30% ang m snd. 60% ang-sbang f-vf snd. Subordinate cly. 1310-1320- 15% ang m snd. 85% sbang-ang f-vf snd.
1320	o 0 0 0 0		Subordinate cly. 1320-1330- 30% ang crs snd. 25% ang m snd. 45% ang-sbang
1330 —			f-vf snd. Subordinate cly.
1340	0 6 0		1330-1340- 15% ang crs snd. 30% ang m snd. 55% ang-sbang f-vf snd. Subordinate cly.
1350	• • • • • • • • • • • • • • • • • • •		1340-1350- 10% ang crs snd. 30% ang m snd. 60% ang-sbang f-vf snd. Subordinate cly.
Ţ,IJ,IJ,IJ		1350' @ 1520 hrs 3/17/2019	1350-1360- 15% ang crs snd. 30% ang m snd. 60% ang-sbang f-vf snd. Subordinate cly.
1360			1360-1370- 5% ang crs snd. 55% ang m snd. 40% ang-sbang f-vf snd. Subordinate cly.
			1370-1380- 10% ang crs snd. 55% ang m snd. 35% ang-sbang f-vf snd. Subordinate cly.
1380 —			1380-1390- 10% ang crs snd. 50% ang m snd. 40% ang-sbang f-vf snd. Subordinate cly.
1390			1390-1400- 10% ang crs snd. 50% ang m snd. 40% sbang f-v snd. Mostly qtz snd (lacking fldspr) and minor mylonated mafic grains. Subordinate cly. 1400-1410- 25% ang crs snd. 25% ang m snd. 50% ang f-vf
1410			snd. Subordinate cly. 1410-1420- Tr crs snd. 50% ang m snd. 50% sbang f snd. Subordinate cly.
1420	0 0 0 0 0 0 0 0 0 0 0 0 0		1420-1430- 15% ang crs snd. 30% ang m snd. 55% sbang f si Subordinate cly.
1430	•		1430-1440- 5% ang crs snd. 95% ang-sbang f-vf snd. Subordinate cly.
1440			1440-1450- 10% ang crs snd. 40% ang m snd. 50% ang-sbang f-vf snd. Subordinate cly.
1450	ър. 9 9 9 9	1450' @ 1750 hrs 3/17/2019	1450-1460- 15% ang m snd. 85% ang-sbang f-vf snd. Subordinate cly.
1460			1460-1470- 65% ang m snd. 35% ang-sbang f-vf snd. Subordinate cly.
1470	0 0 0 0 0 0 0		1470-1480- Tr ang crs snd. 35% ang m snd. 65% ang-sbang f-vf snd.Subordinate cly.
1480			1480-1490- Tr crs snd. 15% ang-sbang m snd. 85% ang-sbrnd f-vf snd. Abundant cly.
1490	0 		1490-1500- 60% ang m snd. 40% sbang f-vf snd. Subordinate cly.





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-	6 0		
1	° •		1500-1510- 35% ang-sbang m snd. 65% sbang f-vf snd.
1510 -	0. -0.0		Subordinate cly.
			1510-1520- 5% ang m snd. 95% sbang-sbrnd f-vf snd.
			Abundant cly.
1520 —			1520-1530- 45% ang-sbang m snd. 55% sbang-sbrnd f-vf sn
-			Subordinate cly.
7	°		Subordinate cry.
1530	•		1530-1540- 10% ang-sbang m snd. 90% sbang f-vf snd.
	°		Subordinate cly.
1540 —	Ē		
-	•		1540-1550- 15% ang-sbang m snd. 85% sbang f-vf snd.
	0 0		Subordinate cly.
1550 —	•		
-			1550-1560- 5% ang-sbang m snd. 95% sbang f-vf snd.
-			Abundant cly.
1560			1560-1570- Tr m snd. 100% sbang f-vf snd. Abundant cly.
			1000 1070 11 III bita. 10070 boung 1 (1 bita. 110 ana ani 01).
1570 —			
			1570-1580- Tr m snd. 5% sbang f snd. 95% sbang vf snd.
_			Abundant cly.
1580 —			
7			1580-1590- Tr m snd. 5% sbang f snd. 95% sbang-sbrnd vf
-			snd. Abundant cly.
1590			1590-1600- Tr m snd. 50% sbang f snd. 50% sbang-sbrnd vf
	E		snd. Subordinate cly.
1600 -	E		sild. Subordinate cry.
			1600-1630 (one sample)- 5% f sbang-sbrnd snd. 95% sbrnd
_			vf snd. Abundant cly.
1610 —			
_			
-			
1620			
1630 _			
			1630-1640- 5% sbang-sbrnd f snd. 95% sbrnd vf snd.
			Abundant cly.
1640			1640-1650- 5% ang m snd. 50% sbang-sbrnd f snd. 45%
7			
			sbrnd vf snd. Subordinate cly.
1650 -	0 0 0		1650-1660- 15% ang crs snd. 45% ang-sbang m snd. 40%
	o 0 0 0		sbrnd f-vf snd. Subordinate cly.
1660 _	0.0		
	0.0.0		1660-1670- 5% ang crs snd. 40% ang-sbang m snd. 55%
_	· · · ·		sbang-sbrnd f-vf snd. Subordinate cly.
1670 _	o		
7	0.0		1670-1680- Tr crs snd. 50% sbang-sbrnd m snd. 50% sbang-
4000	• • • •		sbrnd f-vf snd. Subordinate cly.
1680 —	· · · · · · · · · · · · · · · · · · ·		1680-1690- Tr crs snd. 30% m sbang-sbrnd snd. 70% sbang-
	o o o		sbrnd f-vf snd. Subordinate cly.
1690 -	° °		
	•		1690-1700- Tr crs snd. 40% sbang-sbrnd m snd. 60% sbang-
			sbrnd f-vf snd. Subordinate cly.





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		3	1700-1710- 30% sbang m snd. 70% sbrnd-sbang snd.
	0 0	1700' @ 0800 hrs 3/18/2019	Subordinate cly.
1710	Macestration	5/16/2019	1710-1720- 5% sbang m snd. 95% sbang-sbrnd f-vf snd.
			Subordinate cly.
1720			1720-1730- Tr crs snd. 10% m ang snd. 90% sbang-sbrnd
Ť	e .		f-vf snd. Subordinate cly.
1730	0 0 0		1730-1740- 20% ang crs snd. 30% ang-sbang m snd.
	o. 0 0 0 0		50% sbang-sbrnd snd. Subordinate cly.
1740	0 0 0		1740-1750- 30% ang-sbang m snd. 70% sbang-sbrnd f-vf snd.
	0 0 0	3	Subordinate cly.
1750	0 0 0		1750-1760- Tr crs snd. 20% ang-sbang m snd. 80% sbang-
	e 0		sbrnd f-vf snd. Subordinate cly.
1760 —	0		1760-1770- Tr crs snd. 20% ang-sbang m snd. 80% sbang-
	с с		sbrnd f-vf snd. Subordinate cly.
1770	e 0		1770-1780- Tr crs snd. 25% ang-sbang m snd. 75% sbang-
-	0 		sbrnd f-vf snd. Subordinate cly.
1780	0 0	1780' @ 1215 hrs	1780-1790- Tr crs snd. 25% ang-sbang m snd. 75% sbang-
	e e .0	3/18/2019	sbrnd f-vf snd. Subordinate cly.
1790 —	0		1790-1800- Tr crs snd. 30% ang-sbang m snd. 70% sbang-
1800	a 0 0		sbrnd f-vf snd. Subordinate cly.
	0 0 0		1800-1810- Tr crs snd. 30% ang-sbang m snd. 70% sbang-
1810	0.0		sbrnd f-vf snd. Subordinate cly.
	0 0		1810-1820- Tr crs snd. 25% ang-sbang m snd. 75% sbang-
1820	0 0		sbrnd f-vf snd. Subordinate cly.
	0 0 0		1820-1830- 25% ang-sbang m snd. 75% sbang-sbrnd snd.
1830	o 0		Subordinate cly.
	0		1830-1840- Tr crs snd. 10% ang m snd. 90% sbang-sbrnd f-vf snd. Subordinate cly.
1840			
Ť.	0 0 .0	1840' @ 1430 hrs 3/18/2019	1840-1850- 30% ang-sbang m snd. 70% sbang-sbrnd f-vf snd. Subordinate cly.
1850	0 0		r r
	-6		1850-1860- 20% ang-sbang m snd. 80% sbang-sbrnd f-vf snd.
1860	0		Subordinate cly.
	6		1860-1870- Tr crs snd. 15% ang-sbang m snd. 85% sbang-
1870 -	đ		sbrnd f-vf snd. Subordinate cly.
TÌ.	0		1870-1880- Tr crs snd. 15% ang-sbang m snd. 85% sbang- sbrnd f-vf snd. Subordinate cly.
1880 -	0	1880' @ 1630 hrs	1880-1890- Tr crs mylonated gray-black-white grains. 20%
	-6 -	3/18/2019	ang m snd. 80% sbang-sbrnd f-vf snd. Subordinate cly.
1890 -	0		1890-1900- 30% ang m snd. 70% sbang f-vf snd. Subordinate
	0 0		cly.





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1910 – 1			 1900-1910- 5% ang crs snd. 25% ang m snd. 75% sbang f-vf snd. Subordinate cly. 1910-1920- 5% ang crs snd. 35% ang m snd. 60% ang-sbang f-vf snd. Subordinate cly.
1920	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		1920-1930- Tr mafic crs snd. 30% ang m snd. 70% sbang f-vf snd. Subordinate cly.
1930 —			1930-1940- Tr crs snd. 5% ang-sbang m snd. 95% sbang snd. Abundant cly.
1940 — — —			1940-1950- Tr crs snd. 10% ang-sbang m snd. 90% sbang- sbrnd f-vf snd. Subordinate cly.
1950 — 			1950-1960- 5% ang-sbang m snd. 10% ang-sbang f snd. 85% sbrnd vf snd. Abundant cly.
1960 — 			1960-1970- 10% ang m snd. 90% sbang-sbrnd f-vf snd. Subordinate cly.
1970 — - - - - - - - - - - - - - - - - - - -			1970-1980- 5% ang m snd. 85% sbang-sbrnd f-vf snd. Abundant cly.
1980 — 			1980-1990- Tr crs snd. 15% ang m snd. 85% sbang-sbrnd f-vi snd. Subordinate cly.
1990 — - - - -			1990-2000- 10% ang-sbang m snd. 10% sbang f snd. 80% sbang-sbrnd vf snd. Subordinate cly.
2000	•		2000-2010- 20% ang m snd. 80% sbang-sbrnd f-vf snd. Subordinate cly.
2010			2010-2020- 5% ang-sbang m snd. 10% sbang-sbrnd f snd. 85% sbang-sbrnd vf snd. Abundant cly.
2020			2020-2030- Tr crs snd. 5% ang-sbang m snd. 5% sbang f snd. 90% ang-sbrnd snd. Abundant cly.
2030			2030-2040- 5% ang-sbang m snd. 5% sbang-sbrnd f snd. 90% ang-sbrnd snd. Abundant cly.
2040			2040-2050- Tr crs snd. 5% ang-sbang m snd. 5% sbang-sbrnd f snd. 90% ang-sbang vf snd. Abundant cly.
2050			2050-2060- Tr m snd. 5% ang-sbang f snd. 95% sbang-sbrnd vf snd. Abundant cly.
2060			2060-2070- Tr m snd. 10% ang-sbang f snd. 95% sbang-sbrnd vf snd. Significant cly.
2070			2070-2080- 25% sbang f snd. 75% sgang-sbrnd vf snd. Significant cly.
2080			2080-2090- Tr mafic crs snd. 20% ang m snd. 80% sbang f-vf snd. Significant cly.
2090			2090-2100- 5% ang m snd. 95% sbang-sbrnd vf snd. Abundar cly.





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2110 –			2100-2110- Tr mafic crs snd. 5% sbang m-f snd. 95% sbang- sbrnd vf snd. Abundant cly. 2110-2120- 5% sbang-sbrnd m-f snd. 95% sbang-sbrnd vf snd.
2120	. =		Abundant cly. 2120-2130- 35% ang m snd. 75% sbang-sbrnd f-vf snd. Significant cly.
2130			2130-2140- 20% ang m snd. 80% sbang-sbrnd snd. Significant cly.
2140 –			2140-2150- 15% ang m snd. 85% sbang-sbrnd f-vf snd. Significant cly.
2150 – . 	• E		2150-2160- 5% ang m snd. 95% sbang-sbrnd f-vf snd. Subordinate cly.
2160			2160-2170- Tr crs snd. 5% ang-sbang m snd. 95% sbang-sbrnd f-vf snd. Abundant cly.
2170 -			2170-2180- 10% ang m snd. 90% sbang-sbrnd f-vf snd. Abundant cly.
2180			2180-2190- 10% ang-sbang m snd. 90% sbrnd f-vf snd. Significant cly.
2190			2190-2200- 5% sbang m snd; abundant dark grains. 95% ang- sbang f-vf snd. Abundant cly.
2200	:		2200-2210- 15% sbang-sbrnd m snd. 85% sbang-sbrnd f-vf snd. Abundant cly.
2210			2210-2220- 5% sbang m-f snd. 95% ang-sbrnd snd. Abundant cly.
2220			2220-2230- 15% sbang m snd. 85% sbang-sbrnd f-vf snd. Significant cly.
2230	• • • • • • • • • • • • • • • • • • •		2230-2240- 25% ang m snd. 75% ang-sbang f-vf snd. Subordinate cly.
2240			2240-2250- Tr crs snd. 40% ang m snd. 60% sbang-sbrund f-vf snd. Subordinate cly.
2250	0 0 0 0 0 0 0 0 0 0 0 0 1 1		2250-2260- Tr crs snd. 45% ang m snd. 55% sbang-sbrnd f-vf snd. Subordinate cly.
2260	•		2260-2270- 15% ang m snd. 85% ang-sbang f-vf snd. Abundant cly.
2270	•		2270-2280- Tr crs snd. 20% ang m snd. 80% sbang-sbrnd f-vf snd. Subordinate cly.
2280			2280-2290- 10% ang m snd. 90% sbang f-vf snd. Abundant cly.
2290			2290-2300- 25% ang m snd. 75% sbang-sbrnd f-vf snd. Subordinate cly.





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DEPTH	LITHOLOGY	DRILLING NOTES	LITHOLOGY DESCRIPTION
2310 – –		2300' @ 0845 hrs 3/19/2019	2300-2310- Tr crs snd. 15% ang-sbang m snd. 85% sbang f-vf snd. Subordinate cly. 2310-2320- Tr crs snd. 40% ang-sbang m snd. 60% ang-sbrnd f-vf snd. Subordinate cly.
2320 -			2320-2330- 5% ang crs snd. 40% ang-sbang m snd. 55% sbar f-vf snd. Subordinate cly.
2330	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		2330-2340- 10% ang crs snd; abundant mafic grains. 30% ang sbang m snd. 60% sbang f-vf snd. Subordinate cly.
2340 —			2340-2350- 5% ang crs snd. 45% ang-sbang m snd. 50% sbar f-vf snd. Subordinate cly.
2350 —	о о о		2350-2360- 5% ang crs snd. 15% ang-sbang m snd. 80% sbar f-vf snd. Subordinate cly.
2360 — - - - -	9		2360-2370- Tr crs snd. 10% ang-sbang m snd. 90% ang-sbang f-vf snd. Subordinate cly.
2370	0 0 0	2370' @ 1230 hrs 3/19/2019	2370-2380- Tr crs snd. 15% ang-sbang m snd. 85% ang-sbrnd f-vf snd. Subordinate cly.
2380	9 9		2380-2390- Tr crs snd. 15% ang-sbang m snd. 85% ang-sbang f-vf snd. Subordinate cly.
2390	5. 0. 		2390-2400- Tr crs snd. 30% ang-sbang m snd. 70% ang-sbang f-vf snd. Subordinate cly.
2400			2400-2410- Tr crs snd. 40% ang-sbang m snd. 60% ang-sbang f-vf snd. Subordiante cly.
2410			2410-2420- 40% ang m snd. 60% ang-sbang f-vf snd. Subordinate cly.
2420 2430			2420-2430- Tr crs snd. 50% ang-sbang m snd. 50% ang-sbang f-vf snd. Subordinate cly.
	6 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		2430-2440- Tr crs snd. 40% ang-sbang m snd. 60% ang-sbang f-vf snd. Subordinate cly.
2440			2440-2450- Tr crs snd. 50% ang-sbang m snd. 50% ang-sbang f-vf snd. Subordinate cly.
2450	9 9 9	2450' @ 1530 hrs 3/19/2019	2450-2460- Tr crs snd. 20% ang-sbang m snd. 80% ang-sbang f-vf snd. Subordinate cly.
2460			2460-2470- Tr crs snd. 15% ang-sbang m snd. 85% ang-sbang f-vf snd. Subordinate cly.
		2470' @ 1715 hrs Switch out survey wire @	2470-2480- 5% ang-sbang m snd. 95% sbang-sbrnd f-vf snd. Significant cly.
2480	• • • · · · · · · · · · · · · · · · · ·	1730 hrs 3/19/2019	2480-2490- 20% ang-sbang m snd. 80% sbang-sbrnd f-vf snd Significant cly.
2490 — - - -			2490-2500- 10% ang-sbang m snd. 90% sbang-sbrnd f-vf snd Significant cly.





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DEPTH	LITHOLOGY		
-	EIMOEOGI	DRILLING NOTES	LITHOLOGY DESCRIPTION
-			2500-2510- No sample.
2510 – 			2510-2520- 15% ang-sbang m snd. 85% sbang-sbrnd f-vf snd. Subordinate cly.
2520	eden de la deserve		2520-2530- No sample.
2530			2530-2540- 5% ang-sbang m snd. 95% sbang-sbrnd f-vf snd. Subordinate cly.
2540			2540-2550- Tr m snd. 100% sbrnd f-vf snd. Liquid-rich sample, very abdundant cly and slt.
2550			2550-2560- 10% ang m snd. 90% sbang-sbrnd f-vf snd. Subordinate cly.
2560			2560-2570- "Liquid sample" - 100% sbrnd vf snd, slt, cly.
2570			2570-2580- "Liquid sample" - 100% sbrnd vf snd, slt, cly.
2580			2580-2590- "Liquid sample" - 100% sbrnd vf snd, slt, cly.
2590 — ···	(s) / W		2590-2600- No sample.
2600			2600-2610- No sample.
2610		2617' @ 0730 hrs	2610-2620- 5% rhyolite. 95%+ granite (<1% mafic grains).
2620		Trip out of hole to swap out bit.	2620-2630- Tr rhyolite. 100% granite (<1% mafic grains).
2630		3/20/2019 Trip in hole @	2630-2640- Granite (<1% mafic grains).
2640		1600 hrs 3/20/2019	2640-2650- Granite (<1% mafic grains).
2650			2650-2660- Granite (<1% mafic grains).
2660			2660-2670- Granite (<1% mafic grains).
2670			2670-2680- Granite (<1% mafic grains).
2680			2680-2690- Granite (<1% mafic grains).
2690			2690-2700- Granite (<1% mafic grains).





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DEPTH	LITHOLOGY	DRILLING NOTES	LITHOLOGY DESCRIPTION
			2700-2710- Granite (<1% mafic grains).
2710 -			
-			2710-2720- Granite (<1% mafic grains).
2720 -			
			2720-2730- Granite (<1% mafic grains).
2730 —			
			2730-2740- Granite (<1% mafic grains).
2740 —			
-			2740-2750- Granite (<1% mafic grains).
2750 —			
-			2750-2760- Granite (<1% mafic grains).
2760 —			
1			2760-2770- Granite (<1% mafic grains).
2770 —			
-			2770-2780- Granite (<1% mafic grains).
2780 —			
			2780-2790- Granite (<1% mafic grains).
2790 —			
-			2790-2800- Granite (<1% mafic grains).
2800 —			
			2800-2810- Granite (<1% mafic grains).
2810 —			
			2810-2820- Granite (<1% mafic grains).
2820 _			
			2820-2830- Granite (<1% mafic grains).
2830 _			2820 2840 (remits (<18/ motio aroing)
			2830-2840- Granite (<1% mafic grains).
2840 _			2840,2850, Consists (<10 / modes ansists)
			2840-2850- Granite (<1% mafic grains).
2850 _			
			2850-2860- Granite (<1% mafic grains).
2860 _			
			2860-2870- Granite (<1% mafic grains).
2870 _			2870 2880 Granita (<18/ matic arriva)
			2870-2880- Granite (<1% mafic grains).
2880 —			2880-2890- Granite (<1% mafic grains).
2890 -			2890-2900- Granite (<1% mafic grains).
			2000 2000- Granice (S170 marie grains).
_			





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DEPTH			
DEPTH	LITHOLOGY	DRILLING NOTES	LITHOLOGY DESCRIPTION
			2900-2910- Granite (<1% mafic grains).
2910 -			
			2910-2920- Granite (<1% mafic grains).
2920		2920' @ 0700 hrs.	2920-2930- Granite (<1% mafic grains).
_	1-11511-11	Trip out of hole,	
2930 -		swap bits and	
		work on mud	2930-2940- Granite (<1% mafic grains).
		pump.	
2940		3/22/2019	2940-2950- Granite (<1% mafic grains).
-			
2950 —			
3			2950-2960- Granite (<1% mafic grains).
2960 -	01101000100		
2000			2960-2970- Granite (<1% mafic grains).
_			
2970 -			2970-2980- Granite (<1% mafic grains).
			2570-2500- Granice (<170 mane granis).
2980 -			
_			2980-2990- Granite (<1% mafic grains).
2990 -			2990-3000- Granite (<1% mafic grains).
-			
3000 —			2000 2010 Cranity (<10/ mg (
3			3000-3010- Granite (<1% mafic grains).
3010 -			
			3010-3020 Granite (<1% mafic grains).
_			
3020			3020-3030- Granite (<1% mafic grains).
			sozo soso Grante (Arvinare grans).
3030 —			2020 2040 Cranita (<10/ maß - amina)
-			3030-3040- Granite (<1% mafic grains).
3040			
5040 _			3040-3050- Granite (<1% mafic grains).
-	0000000000		
3050			2050 2060 Crasita (<10(maß
			3050-3060- Granite (<1% mafic grains).
3060 _			
-			3060-3070- Granite (15% mafic grains).
-			
3070 _			3070-3080- Granodiorite (40% mafic grains).
-			
3080 —			3080-3090- Granodiorite (45% mafic grains).
-			5060-5090- Granoulorite (45% marie granis).
-			
3090 -			3090-3100- Granodiorite (65% mafic grains).
Í			





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DEPTH	LITHOLOGY	DRILLING NOTES	LITHOLOGY DESCRIPTION
1111			3100-3110- Diorite (75% mafic grains).
3110 —			3110-3120- Diorite (85%+ mafic grains).
3120			3120-3130- Diorite (85%+ mafic grains).
3130			3130-3140- Diorite (85%+ mafic grains).
3140 —			3140-3150- Diorite (85%+ mafic grains).
3150			3150-3160- Diorite (85%+ mafic grains).
3160			3160-3170- Diorite (85%+ mafic grains).
3170 -			3170-3180- Diorite (85%+ mafic grains).
3180			3180-3190- Diorite (85%+ mafic grains).
3190			3190-3200- Diorite (85%+ mafic grains).
3200			3200-3210- Diorite (85%+ mafic grains).
3210			3210-3220- Diorite (85%+ mafic grains).
3220			3220-3230- Diorite (85%+ mafic grains).
3230			3230-3240- Diorite (85%+ mafic grains).
3240			3240-3250- Diorite (85%+ mafic grains).
3250			3250-3260- Diorite (85%+ mafic grains).
3260		Bit issues and	3260-3270- Diorite (85%+ mafic grains).
3270		slow drilling, end of hole called 3280' @ 0800 hrs	3270-3280- Diorite (85%+ mafic grains).
3280		3/25/2019	
-			





Appendices

- 1. Daily Drilling Reports
- 2. Operations Activity Detail Report
- 3. Operations Time Graph
- 4. Days verses Depth graph
- 5. Bit reports
- 6. BHAs
- 7. Casing reports
- 8. Deviation Surveys
- 9. Schlumberger CBL log





Job ID: Original

GRG

Well Name: 78-32

Report No: 1 Description Propert For 13-Mar-10 Description Measured Depth (ft): 700 Working Interest: Wellbore: Original Wellboro AFE (s) Actual (s) Vertical Depth (ft): 700 Not claning: 13.378 at 69 RKB Elevation (ft): 5.70 — …	7			ige 10-02	1	00010.01	Se	ct: 26 Town: 26	S Rna: 9W C	ountv: Beaver	State: UT
Measured Depth (ft): 700 Working Interest: Wellbore: Original Wellbore AFE No. AFE (s) Actual (s) Proposed TD (ft): 3000 Next Casing: 13.375 at 60 PRB Elevation (ft): 5.00 - <t< th=""><th>Report N</th><th>lo: 1</th><th></th><th></th><th></th><th></th><th></th><th></th><th><u> </u></th><th>•</th><th></th></t<>	Report N	lo: 1							<u> </u>	•	
Vertical Depth (ft): 700 Last Casing: 14.000 at 60 RKB Elevation (ft): 5.70	Operator:		University	of Utah R	ig:	#10031	Spud Date:	13-Mar-19	Daily Cost / N	/lud (\$):	
Eventical Depth (ft): 700 Last Casing: 14.000 at 69 RKB Elevation (ft): 5.70	Measured	Depth (ft):	700 W	orking Interest	:	Wellbore:	Original Wellbor	e AFE No.	AFE (\$)	Actual (\$)
Proposed To (m): 3000 Next Casino: 13.375 at 60					-		RKB Elevatio	n (ft): 5.70)		
		• • •		3000 N	ext Casing:			. ,			
Bit/BIA Days (act/plan): 100 Fish 2 (act/plan): 100 Fish 2 (act/plan): 100 Days On Location:	•	• •	rs: 70		U				Totals:		
Drilling Days (act./plan): 100 Flat Days (act./plan): 000 Total Days (act./plan): 100 Days On Location: Verner Ope: Drill to 716 with full returns. Circulate to chan hole. No nursey (8) 700' Inc. 1.8': Pulled out of hole to rig up and run 95/8' casing. Total.sto Total		• •									
Clarent Ops: Drill to 710° with full returns. Circulate to clean hole. Run survey (2) 70° inc. 1.8°. Pulled out of hole to rig up and run 9 5/8° casing Prened Ops: Finish pulling out of the hole and run and coment 9.5%? casing. Toolpusher: Tyler Curtis, Kollin Meliott Supervisors: Randy Badwin/ Virgil Welch, Roger Tel No.: From To Elapsed End MD(t) Core Operations Summary From To Elapsed End MD(t) Code Operations Summary From To Elapsed End MD(t) Code Operations Summary Stot 6.00 1:00 6.93 4.94 Pick up Antiling assembly. Make up New 12-14° PDC, so and dcs. Elapsed 6:00 1:00 5.00 6.94 4.84 Heid pre spotd safety meeting From 60° to 69°. From 90°. 11:00 1:30 0:50 6.91 10-5-1 Condition mud and circulate. Washed from 60° to 69°. From 90°. From 90°. <t< td=""><td>•</td><td>•</td><td>•</td><td></td><td></td><td>• 0/0</td><td>Total Days (a</td><td>act /nlan):</td><td></td><td></td><td>1</td></t<>	•	•	•			• 0/0	Total Days (a	act /nlan):			1
Bit/BHA Information Start Solution St	•		• /						-		-
Toolpusher: Tyler Curtis, Kollin Mellott Supervisors: Randy Baldwin/ Virgil Weich, Roger Tel No.: Comments: Operations Summary Operations Summary Non-Proc 0:00 5:00 5:00 6:00 1:00 5:00 6:00 1:00								IIIC. I.O. Fulleu	out of hole to hy	up and run 9 5/	o casing
Operations Summary Operations Description Non-Prot Operations Summary Operations Description Non-Prot Operations Summary Operations Description Non-Prot Operations Description Non-Prot Operations Summary Operations Description Non-Prot Operations Summary Operations Description Non-Prot Solution Summary Operations Summary Non-Prot Solution Summary Operations Summary Non-Prot Solution Summary Operations Summary Operations Summary Non-Prot <td></td> <td>•</td> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td>Virail Wolch Ro</td> <td></td> <td></td> <td></td>		•					0	Virail Wolch Ro			
Operations Summary From To Elapsed End MD(ft) Code Operations Description Non-Proce 0:00 5:00 6:00 1:00 6:00 1:00 6:00 1:00 6:00 1:00 6:00 1:00 6:00 1:00 6:00 1:00 6:00 1:00 6:00 1:00 6:00 1:00 6:00 6:00 6:00 6:00 1:00 6:00 6:00 6:00 6:00 6:00 6:00 6:00 6:00 6:00 6:00 6:00 6:00 6:00 6:00 7:00 5:00 6:00 1:00 7:00 5:00 7:00 5:00 7:00 5:00 7:00 5:00 7:00 5:00 7:0 5:00 7:0 5:00 7:0 5:00 7:0 5:00 7:0 5:00 7:0 5:00 7:0 5:00 7:0 5:00 7:0 5:00 7:0 5:00 7:0 5:00 7:0 5:00 7:0 5:00 </td <td>•</td> <td>,</td> <td>er Curtis, Kor</td> <td></td> <td></td> <td>supervisors.</td> <td>Ralluy Baluwii</td> <td>i/ virgii weich, Ro</td> <td>yei ieir</td> <td>NO</td> <td></td>	•	,	er Curtis, Kor			supervisors.	Ralluy Baluwii	i/ virgii weich, Ro	yei ieir	NO	
From To Elapsed End MD(Y. Code Operations Description Non-Pro- 0:00 5:00 6:00 1:01 Rigue peujoment. Weide on fiange for rotating head assembly on conductor. Set DC's and drill pipe on racks. 6:00 1:00 6:00 1:00 6:00 1:00 6:00 1:00 6:00 1:00 6:00 1:01 0:00 6:01 1:00 6:01 1:00 6:01 1:00 1:00 6:01 1:00 6:01 1:00 6:01 1:00 1:00 6:01 1:00 6:01 1:00 1:00 6:01 1:00 1:00 9:00	Comments	5.				0		-			
0:00 5:00 5:00 69 1:01 Rig up equipment. Weld on Tange for rotating head assembly on conductor. Set DC's and df'ippe on ranks. 5:00 6:00 1:00 69 3:34-3 Pick up drilling assembly. Make up New 12-1/4" PDC, xo and dc's. 6 6:00 11:00 5:00 69 1:00 Complete rig up and testing of rig equipment for spud. 1 11:00 11:30 0.50 69 10-5 Condition mud and circulate. Washed from 60'to 69'. 1 11:00 11:30 0.50 69 10-5-1 Condition mud and circulate. Washed from 60'to 69'. 1 12:00 0:00 12:00 700 3:2-1 Spud wellat 12:00 firs at 69'. Dnill form 60'to 50'. 1 0:9'. 11:100 11:2200 0:20 20 0:31 15'. 500'. Inc 0:9'. #2 at 500'.		T .	Flavad	Fuel MD/6		Operatio					New Decid
Bit/BHA Information No. 0 0.00 60 1.00 60 1.00 60 1.00 60 1.00 60 1.00 60 1.00 60 1.00 60 1.00 60 1.00 60 1.00 60 1.00 60 1.00 60 1.00 1.00 1.00 1.00 60 1.00 1.00 1.00 1.00 60 1.00 1.00 1.00 60 1.00 1				•	·						
Sto0 6:00 1:00 6:00 1:00 6:00 1:00 5:00 6:00 1:00	0:00	5:00	5.00	69				ange for rotating he	ead assembly on	conductor. Set	DC's
6:00 11:00 5:00 69 1-01 Complete rig up and testing of rig equipment for spud. 1 11:00 11:30 0.50 69 4-88 Held pre spud safety meeting. 1 11:20 0.50 69 1-5-1 Condition mud and circulate. Washed from 60' to 69'. 1 1 12:00 0:00 12:00 700 3-2-1 Spud well at 12:00 is safety meeting. 1 12:00 0:00 12:00 700 3-2-1 Spud well at 12:00 is safety meeting. 1 1 11:00 0:00 12:00 700 3-2-1 Spud well at 12:00 is safety meeting. 1	5.00	6.00	1.00	60				(0 UD Now 12 1/4"	PDC vo and do	'e	
11:00 11:30 0.50 69 4.98 Held pre spud safety meeting. 11:30 12:00 0.60 69 10-5-1 Condition mud and circulate. Washed from 60' to 700' with full returns. WOB 3000, RPM 70, SPP 700 psi, SPM 60, GPM 450 Surveys #1 at 300', Inc 0.9', #2 at 500', #2 at 500', Inc 0.9', #2 at 500', Inc 0.9', #2 a						1 0				5.	
11:30 12:00 0.50 69 10-5-1 Condition mud and circulate. Washed from 60' to 69'. 12:00 0:00 12:00 700 3-21 Spud well at 12:00 hrs at 69'. Drill from 69' to 700'. with full returns. WOB 3000, RPM 70, SPP 700 psi, SPP 700 psi, SPP 80 psi,						1 0	· ·	i ng equipment ior	spua.		
12:00 0:00 12:00 700 3-2-1 Spud well at 12:00 hrs at 69'. Drll from 69' to 700', with full returns. WOB 3000, RPM 70, SPP 700 pai, SPM 60, GPM 450 Surveys #1 at 300', Inc 0.5'', #2 at 500', Inc 0.9'. Bit/BHA Information No/Run Make Model Diam Jets 1-4 Dist Hrs ROP WOB RPM Torg MudWt Flow Press J.Vel P.Drp HHP JIF 1 1 REED BBK 12:250 20 20 20 20 20 631 12 52.6 3,000 65 6,500 8.70 450 500 78 48 13 150 DepthOut: 716 Cutter:Inner/Outer: 1/1 Dull:Maj/Oth: NO/NO WearLoc: A Brgs: X Gauge: 0 Pull: Mud Reports Mud Reports Mud Reports Mud Reports Date/Time Dens. Vis. PV YP Filt. Cake pH Solids Oil Water Sand LGS CI Ca CaCl Gels Temp In/Ot 13-Mar:19 18:00 8.70 41 Mud Reports Mud Log Depth ROP Av/Mx WOB RPM Torque Flow AV:DC AV:DP Press. Depth Gas:Back Max Conn Trip Pore Prest Gas:Back Max Conn Trip Pore Prest Mud Log Depth ROP Av/Mx WOB RPM Torque Flow AV:DC AV:DP Press. Depth Gas:Back Max Conn Trip Pore Prest Gas:Back Internation Environment Item Used Invent. LT: Days Since: Com. Water Haule:: 0 No Inventory Records for this report. Mud Log Si							, ,		201		
70, SPP 700 psi, SPM 60, GPM 450 Surveys #1 at 300°, Inc 0.9°, #2 at 500°, Inc 0.9°, #1 at 300°, Inc 0.9°, #1 at 300°, Inc 0.9°, #2 at 500°, Inc 0.9°, #2 a											
Bit/BHA Information No/Run Make Model Diam Jets 1.4 Dist Hrs ROP WOB RPM Torg MudWt Flow Prop HHP JF 1 1 REED BBK 12.250 20 20 20 631 12 52.6 3.000 65 6.500 8.70 450 500 78 48 13 150 DepthOut: 716 Cutter:Inner/Outer: 1/1 Dull:Maj/Oth: NO/NO WearLoe: A Brgs: X Gauge: 0 Pull: BHA - No. 1 - BIT, BS, 15 DC, XO = 454.50 //// /// /// ////	12:00	0:00) 12.00	700	7	⁷ 0, SPP 700 p					
Mud Reports Date/Time Dens. Vis. PV YP Filt. Cake pH Solids Oil Water Sand LGS CI Ca CaCl Gels Temp In/Ou 13-Mar-19 18:00 8.70 41 1 <th></th>											
Date/Time Dens. Vis. PV YP Filt. Cake pH Solids Oil Water Sand LGS CI Ca CaCl Gels Temp In/Ot 13-Mar-19 8.70 41 Image: Constraint of the state of the st	BHA - No.	.1- B	IT, BS, 15 D0	C, XO = 454	4.50	Maral	Davasta				
13-Mar-19 18:00 8.70 41 /// /// /// /// /// /// /// /// /// /// /// /// //// //// /// //// //// //// //// //// //// ///// ///// ///// ///// ///// ///// <	Dete (T		Dama Ma				•	0		0.1	T
Mud Log Depth ROP Av/Mx WOB RPM Torque Flow AV:DC AV:DP Press. Depth Gas:Back Max Con Trip Pore Press 69-700 52.0 / 75.0 2,000 65 450 88.2 85.0 700 No Mud Log Information for this report. Inventory Safety Information Environment 0.000 acree Item Used Invent. Item Used Invent. LTI: Days Since: Cum. Water Hauled: 0.000 acree No Inventory Records for this report. Med: 1 st Aid: Mod Inc. Azim. TVD NS EW Description: Oper: 3 Cont: 8 Serv: 0 Othr: 0 500 0.9 0 500 3 0 Equipment Problems: Location Condition: Transport Status: Sky: Snowing and Vis.: 1 Pressure: 29.63 Wind: 21 Gusts: 25 <th></th> <th>-</th> <th></th> <th></th> <th>YP Filt. Ca</th> <th>ke pH Solid</th> <th>s Oil Water</th> <th>Sand LGS C</th> <th>i Ca CaC</th> <th></th> <th>Temp In/Ou</th>		-			YP Filt. Ca	ke pH Solid	s Oil Water	Sand LGS C	i Ca CaC		Temp In/Ou
Depth ROP Av/Mx WOB RPM Torque Flow AV:DC AV:DC Depth Gas:Back Max Conn Trip Pore Press 69-700 52.0 / 75.0 2,000 65 450 88.2 85.0 700 No Mud Log Information for this report. Item Used Inventory Safety Information Environment Item Used Invent. LTI: Days Since: Cum. Water Hauled: 0.000 acre- No Inventory Records for this report. Med: 1st Aid: Surveys MD Inc. Azim. TVD NS EW Doper: 3 Cont: 8 Serv: 0 Othr: 0 500 0.9 500 3 0 <t< th=""><th>13-Mar-19</th><th>18:00</th><th>8.70 4</th><th>1</th><th></th><th></th><th></th><th></th><th></th><th>11</th><th>1</th></t<>	13-Mar-19	18:00	8.70 4	1						11	1
69-700 52.0 / 75.0 2,000 65 450 88.2 85.0 700 No Mud Log Information for this report. Inventory Safety Information Environment Item Used Invent. Item Used Invent. LTI: Days Since: Cum. Water Hauled: 0.000 acree No Inventory Records for this report. Med: 1st Aid: Surveys Accident Description: 0 MD Inc. Azim. TVD NS EW 000 0.9 0 300 0.9 0 300 0 0 Cum. Water Hauled: 0.000 acree Med: 1st Aid: MD Inc. Azim. TVD NS EW 0 Oper: 3 Cont: 8 Serv: 0 Othr: 0 500 3 0 Rig/Weather Information Equipment Problems: Location Condition: Transport Status: Sky: Snowing and Vis: 1 Temp: 40 Pressure: 29.63 Wind: 21 Gusts: 25 <td></td> <td></td> <td></td> <td>Drilling</td> <td>Parameters</td> <td></td> <td></td> <td></td> <td>Mud</td> <td>Log</td> <td></td>				Drilling	Parameters				Mud	Log	
Inventory Safety Information Environment Item Used Invent. Item Used Invent. LTI: Days Since: Cum. Water Hauled: 0.000 acre- No Inventory Records for this report. Med: 1st Aid: Ist Aid: MD Inc. Azim. TVD NS EW Description: Oper: 3 Cont: 8 Serv: 0 Othr: 0 500 0.9 0 500 3 0 Rig/Weather Information Equipment Problems: Location Condition: Transport Status: Sky: Snowing and Vis.: 1 Temp: 40 Pressure: 29.63 Wind: 21 Gusts: 25	Dept	h	ROP Av/Mx	WOB R	PM Torque F	low AV:DC	AV:DP Press.	Depth	Gas:Back Max	x Conn Tri	p Pore Pres
Inventory Safety Information Environment Item Used Invent. Item Used Invent. LTI: Days Since: Cum. Water Hauled: 0.000 acre- No Inventory Records for this report. Med: 1st Aid: Ist Aid: MD Inc. Azim. TVD NS EW Description: Oper: 3 Cont: 8 Serv: 0 Othr: 0 500 0.9 0 500 3 0 Rig/Weather Information	6	9-700	52.0 / 75.0	2,000	65	450 88.2	85.0 70	0 No Mud Log	Information for	this report.	-
Item Used Invent. Item Used Invent. LTI: Days Since: Cum. Water Hauled: 0.000 acre- No Inventory Records for this report. Med: 1st Aid: 1st Aid: MD Inc. Azim. TVD NS EW Accident Description: Oper: 3 Cont: 8 Serv: 0 Othr: 0 500 0.9 0 300 0 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>•</td> <td></td>										•	
Item Used Invent. Item Used Invent. LTI: Days Since: Cum. Water Hauled: 0.000 acre- No Inventory Records for this report. Med: 1st Aid: Med: 1st Aid: MD Inc. Azim. TVD NS EW Accident Description: Oper: 3 Cont: 8 Serv: 0 Othr: 0 500 0.9 0 500 0			Invent	tory			afetv Inform	ation	F	nvironment	
No Inventory Records for this report. Med: 1st Aid: MD Inc. Azim. TVD NS EW Accident Description: Accident Description: MD Inc. Azim. TVD NS EW 0per: 3 Cont: 8 Serv: 0 <t< td=""><td>Item</td><td>Use</td><td></td><td>-</td><td>Used Invent</td><td></td><td></td><td></td><td></td><td></td><td>0.000 acre-f</td></t<>	Item	Use		-	Used Invent						0.000 acre-f
Accident Description: MD Inc. Azim. TVD NS EW 300 0.9 0 300 0 0 Oper: 3 Cont: 8 Serv: 0 Othr: 0 Total Personnel: 11 Hours: 0 500 0.9 0 500 3 0 Rig/Weather Information Equipment Problems: Inc. Azim. TVD NS EW Condition: Transport Status: Sky: Snowing and Vis.: 1 Temp: 40 Pressure: 29.63 Wind: 21 Gusts: 25	No Invent			s report.		Med:				Surveys	
Doscription: Oper: 3 Cont: 8 Serv: 0 Othr: 0 Total Personnel: 11 Hours: 0 Rig/Weather Information Equipment Problems: Location Condition: Transport Status: Sky: Snowing and Vis.: 1 Temp: 40 Pressure: 29.63 Wind: 21 Gusts: 25		,, ,				Accident			MD Inc. A	zim. TVD	NS EW
Oper: 3 Cont: 8 Serv: 0 Othr: 0 Total Personnel: 11 Hours: 0 Rig/Weather Information Equipment Problems: Location Condition: Transport Status: Sky: Snowing and Vis.: 1 Temp: 40 Pressure: 29.63 Wind: 21 Gusts: 25							n:				
Rig/Weather Information Equipment Problems:						Oper: 3	Cont: 8 Sei	rv: 0 Othr: 0	500 0.9	0 500	3 0
Equipment Problems: Location Condition: Transport Status: Sky: Snowing and Vis.: 1 Temp: 40 Pressure: 29.63 Wind: 21 Gusts: 25						Total Perso	onnel: 11 Ho	0			
Equipment Problems: Location Condition: Transport Status: Sky: Snowing and Vis.: 1 Temp: 40 Pressure: 29.63 Wind: 21 Gusts: 25								Juis . 0			
Transport Status: Fressure: 29.63 Wind: 21 Gusts: 25						Dig/Moath	or Informatic				
Transport Status: Sky: Snowing and Vis.: 1 Temp: 40 Pressure: 29.63 Wind: 21 Gusts: 25	Equipmer	nt Prob	ems:			Rig/Weath	er Informatio				
Sky: Snowing and Vis.: 1 Temp: 40 Pressure: 29.63 Wind: 21 Gusts: 25						Rig/Weath	er Informatic				
	Location	Conditi	on:			Rig/Weath	er Informatio				
Drinted: 07:29 20 Apr 10 Degree 1 of	Location Transport	Conditi t Status	on: :	1 7				on			



Job ID: Original

GRG

Well Name: 78-32

Sect: 26 Town: 26S Rng: 9W County: Beaver State: UT

0 0

8 Serv: 0 Othr:

							Sect: 2	26 Iow	n: 265	Rng:	9W C	ounty: Beav	ver Stat	ie: UT
Report N	o: 2											Report F	or 14-M	lar-19
Operator:			of Utah Rig	g:	#10031	Spud Date:		13-N	/lar-19	Daily C	ost/N	lud (\$):		
Measured	Depth (ft	:):	716 W e	orking Interest:		Wellbore:	Or	iginal W	ellbore	AFE N	0.	AFE (\$)	Act	ual (\$)
Vertical De	epth (ft):		716 La	ast Casing:	9.625 at 704	RKB Elevat	tion (ft)):	5.70					
Proposed 7	TD (ft):		3000 Ne	ext Casing: 5.8	500 at 3,000									
Hole Made	(ft) / Hrs	:	16/0.5 La	ast BOP Test:						Totals:				
Average R	OP (ft/hr):	32.0 Ne	ext BOP Test:						Well C	ost (\$):			
Drilling Da	ys (act./j	olan):	2/0 Flat D	Days (act./plan):	0/0	Total Days	act./p	olan):		2/0 Da y	ys On I	Location:		2
Current Op	os: Cu	toff 9 5/8" c	asing and la	id down. Lay ove	er mast. Cut o	off conductor	pipe w	ith rotati	ing hea	d. Cutof	f and D	ress 9.625"	casing. V	Veld
Planned O	ps: Co	mplete Nipp	ole up. Funct	tion and test BOI	P's Make up	8 3/4" assem	bly, Cle	ean out o	cement	. Test sł	noe tra	ck. Drill 8.75	" new ho	le
Toolpushe	r: Tyle	r Curtis, Kol	llin Mellott	Si	upervisors:	Virgil Welch	i, Roge	r Almon	d		Tel N	No.:		
Comments	:													
					Operatio	ons Summa	ary							
From	То	Elapsed	End MD(ft)	Code			Opera	tions De	escript	ion			No	n-Prod
0:00	0:30	0.50	716	3-2-1 D	rill from 700'	to716' with fu	Ill returi	ns. WOE	3 3000,	RPM 70), SPP	700 psi, SPN	И 60,	
0:30	2:00	1.50	716	4-5-1 C	irculate hole	clean and co	ndition	for 9 5/8	3" casin	g.				
2:00	2:30	0.50	716	3-58 R	un Survey @	700' Inc. 1.8	deg.							
2:30	4:30	2.00	716	10-6-4 P	ull out of the	hole and lay	down E	BHA.						
4:30	8:00	3.50	716	4-56 R	ig up to run c	asing. Held s	afety n	neeting.						
8:00	14:30	6.50	716	4-12-1 R	un 18 joints (706') of 9-5/8	3" 36# J	J-55, LT&	&C cas	ing as p	er casir	ng program.	Rigged	
14:30	15:30	1.00	716	5-12-2 H	eld safety me	eting. Hooke	ed up ce	ement lir	nes and	l cemen	t head	with wiper pl	ug.	
15:30	0:00	8.50	716	6-13 W	/OC. Ran a s	tring line and	taggeo	d top of o	cement	at estim	nated 3	4'. Ran a 20'	joint of	
No/Due M	alea Ma	del Diem	a lata d	4 Dia		Informatio		Town	A	F law I	Duese			
No/Run Ma		del Diam				OP WOB 1.8 2,000	RPM 70	Torq	8.70	Flow 450	700	J.Vel P.D	'p HHF 18 13	
DepthOut:			Inner/Outer		ull:Maj/Oth:		Wear	d oc:		rgs: X		uge: 0	Pull:	5 159
Depthout	. 710	Cutter.	inner/Outer	. 1/1 0	un.waj/otn.		wear	LUC.		nys. A	Ga	uge. 0	Fuil.	
BHA - No.	1- BIT	r, BS, 15 D	C, XO = 454	.50	Mud	Reports								
Date/Tir	me D	Dens. Vis	. PV `	YP Filt. Cak	e pH Solid	•	er Sa	nd LGS	CI	Са	CaC	l Gels	Tem	p In/Out
No Mud R	ecords f	or this repo	ort.										•	
			Drilling F	Parameters							Mud	Log		
Depth	n R	OP Av/Mx		PM Torque Flo	ow AV:DC	AV:DP Pres	ss.	Dept	th G	as:Bacl	K Ma	x Conn	Trip Por	re Pres.
700	0-716 5	52.0 / 52.0	2,000	70 4	50 88.2	85.0	700	No Mud	Log Ir	nformati	on for	this report.		
		Inven	torv			Safety Infor	matio	n			F	nvironme	nt	
Item	Used	Invent.	Item	Used Invent.			/s Sinc		c	um. Wate				0 acre-fl
		ords for this			Med:		Aid:					Surveys		
	,				Accident							zim. TVD	NS	EW
					Description	ו:				700	1.8	0 700) 8	0
					Onor: 2	C	Some	0 Othe						

Oper: 2 Cont:

Total Personnel: 10 Hours: **Rig/Weather Information**



Job ID: Original

GRG

Well Name: 78-32

1							Sect: 26 T	own: 26	S Rng: 9	W Coun	ty: Beave	r State: U
Report N	lo: 3									R	eport For	· 15-Mar-1
Operator:		University	of Utah Ri	g:	#10031	Spud Date	: 1	3-Mar-19	Daily C	ost / Mud	(\$):	-
Measured	Depth (f	t):	1000 W	orking Intere	st:	Wellbore:	Origina	l Wellbore	AFE No).	AFE (\$)	Actual (\$
Vertical D	epth (ft):		1000 La	st Casing:	9.625 at 704	RKB Eleva	tion (ft):	5.70				-
Proposed	TD (ft):		3000 N e	ext Casing:	5.500 at 3,000							-
Iole Made	e (ft) / Hrs	s: 28	34 / 2.75 La	st BOP Test:	15-Mar-19				Totals:			-
Average R	ROP (ft/hr	r):	103.27 N e	ext BOP Test	: 30-Mar-19				Well Co	ost (\$):		-
Drilling Da	avs (act./	plan):	3/0 Flat D) ays (act./pla	n): 0/0	Total Days	(act./plan)	:	3/0 Dav	s On Loca	ation:	
Current O					n water to chang	-	· · /		-			it and xo.
Planned C	•				o run in hole wit	5	,					
oolpushe	•	r Curtis, Kol			Supervisors:	•			inicaa ire	Tel No.:	oncontana	
Comment	,	,		ling all measu	rements from G	•			onvert to		irements hi	it its not
	3. Tiya			ing an measu		ons Summa				TtD medou		
From	То	Elapsed	End MD(ft	Code	Operatio		Operations	Descrip	tion			Non-Pro
0:00	0:30	0.50		6-35	Cut off 9-5/8" of	paging and re						NOII-PIC
						•	inove 13-3/0	o rotating	neau.			
0:30	1:00	0.50		6-35	Lay over mast.		· · · · · · · · · · · · · · · · · · ·		1I			
1:00	4:00	3.00		6-35	Make final cut		0					
4:00	11:00	7.00	716	6-35	Nipple up 11" 3	3M single ga	te BOP. Fun	iction test	accumula	ator. Raise	Mast and p	pin in
11:00	11:30	0.50	716	6-35	place. Test casing, w	oll bood and		DSI and y	witnossoc	by lim Co	addard with	•
11.00	11.50	0.50	710	0-33	DWR. Test Ap				withessee	by Jill Oc		1
11:30	18:00	6.50	716	1-01	Fabricate disch	, narge line, pr	epare to dril	ll 8-3/4" ho	ole.			
18:00	19:30	1.50	716	11-6-3	RIH w/ 8-3/4" k	• •	•					
19:30	21:15	1.75	716	6-28	Clean out cem		,	0		d float colla	ar at 624'. I	Had
					hard cement th							
21:15	0:00	2.75	900	3-2-1	Drill from 716' GPM 450.	to 1,000' with	n full returns	. WOB 30	00, RPM	70, SPP 70	00 psi, SPN	M 60,
						Informatio	n					
No/Run M	lake M	odel Diam	n Jets 1	-4 Г			RPM Tor	whuM n	t Flow F	Press JV	/el P.Drp	HHP JIF
	KER DS				284 2.75 10		70	8.80			78 48	13 16
DepthOut			Inner/Outer		Dull:Maj/Oth:		WearLoc:		Brgs: X	Gauge		Pull: OTH
BHA - No. Date/Ti		T, BS, 15 DO Dens. Vis	C, XO = 453		Mud Cake pH Solid	Reports Is Oil Wa	ter Sand L	.GS CI	Ca	CaCl	Gels	Temp In/C
15-Mar-19	22:00	8.80 5	53								11	/
			Drilling I	Parameters						Mud Log	g	
Dept	h F	ROP Av/Mx	•		Flow AV:DC	AV:DP Pres	ss. D	epth G	as:Back	Max	Conn Tri	p Pore Pre
716	6-1000	94.0 / 94.0	2,000	70	450 213.9	195.9	700 No N	Iud Log I	nformatio	on for this	report.	-
								-				
		Inven	tory			Safety Info	rmation			Envi	ronment	
Item	Used	Invent.	Item	Used Inver	nt. LTI:	Da	ys Since:	<u> </u>	Cum. Wate			0.000 acre
No Invent	tory Reco	ords for this	s report.		Med:	1st	Aid:				urveys	
					Accident			-		nc. Azim.		NS EW
					Description				980	4 (0 980	22
					Oper: 2 Total Perso		Serv: 1 C Hours:	Othr: 0				
					Rig/Weath	er Informa	tion					
Equipme	nt Proble	ms:										
Location	Conditio	n:										
Transpor	t Status:											
Sky: Clea	ar Skies	Vis.:	10 Temp	: 43 Pres	ssure: 30.33	Wind: 9	Gusts:	11				
Printed: 07	7.38 30-4	nr_10			DIME	ase 7.4.89.0						Page: 1 o



Job ID: Original

GRG

Well Name: 78-32

							20 10	WIII. 20C	s ring. s	W Count	y. Deave	· Olulo	
Report N	o : 4									Re	port Fo	r 16-Ma	ar-19
Operator:		University	of Utah R	ig:	#10031	Spud Date:	13	-Mar-19	Daily Co	ost / Mud (-		
Measured I	Depth (ft	:):	1000 W	orking Intere	st:	Wellbore:	Original	Wellbore	AFE No		AFE (\$)	Actu	al (\$)
Vertical De				ast Casing:	9.625 at 704	RKB Elevat	ion (ft):	5.70					
Proposed 1			3000 N	ext Casing:	5.500 at 3,000		ζ, γ						
Hole Made	• •	;		ast BOP Test	,				Totals:				
Average R	• •			ext BOP Test					Well Co	st (\$):			
Drilling Day				Days (act./pla		Total Days	(act./plan):			s On Locat	tion:		4
Current Op					mp lines. POH	-	· · ·					nto hole	
Planned O			• •		make up tools.		•						
Toolpushe	•	Curtis, Kol			Supervisors:				0, 1 11010	Tel No.:			
Comments				yield of 200 g		ingi iteleli	,						
3 records r				<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>		ons Summa	rv						
From	То	Elapsed	End MD(ft	Code	oporatio		Operations	Descript	ion			Non	-Prod
1:30	3:00	1.50) 10-6-4	POH and brea								
3:00	5:00	2.00) 11-6-3	RIH with open		pe to 500'						
5:00	5:30	0.50) STIM	Air lift @ 500'		po to 0001						
5:30	6:00	0.50) 11-6-3	RIH to 980' wit		d drill pipe						
6:00	8:00	2.00	1,000		Airlift @ 980' h	•	• •	n +					
8:00	10:00	2.00) STIM	Conducted rec		•••		nhout test	•			
10:00	11:30	1.50) 10-6-4	POH with oper				gnouttoot	•			
11:30	21:00	9.50) 10-32	Waiting on sta	•	•	ore com	mence dri	Ilina			x
21:00	22:00	1.00) 10-343	Unload stabiliz					inig.			~
21:00	22:30	0.50	,) 10-6-1	RIH with DC's.	•		ory.					
22:30	23:00	0.50) 10-6-3	RIH with DP to								
22:30	0:00	1.00	,) 10-5-1	Conditioned m		d ria. Tiabter	helte or	n mud nur	nn			
23.00	0.00	1.00	1,000	10-5-1		Informatio	<u> </u>		r muu pui	np.			
No/Run Ma	ake Mo	odel Diam	n Jets 1	-4 !			RPM Torq	MudWt	Flow P	ress J.Ve	el P.Drp	HHP	JIF
2 1 BAI	KER DS6	616N 8.75	0 20 20	0 20 20	518 5.75 9	90.1 4,000	70	8.80	1		'8 48	13	161
DepthOut:	1,000	Cutter:	Inner/Outer	r: 1/1	Dull:Maj/Oth:	NO/NO	WearLoc:	A B	Brgs: X	Gauge:	0	Pull:	отн
2 2 BA	KER DS6												
DepthOut:	2,617	Cutter:	Inner/Outer	r: 3/3	Dull:Maj/Oth:	NO/NO	WearLoc:	A B	Brgs: X	Gauge:	0	Pull:	FM
BHA - No.	3 - BIT	, BS, DC, S	STAB, DC, S	STAB, 13 DC,	XO = 461.31				0				
					Mud	Reports							
Date/Tir	ne C		D 1/	YP Filt. C		IVEDOUIS							In/Out
16-Mar-19	10.00	Dens. Vis	. PV		ake pH Solic		er Sand LO	S CI	Са	CaCl	Gels	Temp	
	12:00		37 PV		Cake pH Solic		er Sand LC	S CI	Са	CaCl	Gels	Temp	/
	12:00				Cake pH Solic		er Sand LC	S CI	Са	CaCl			
	12:00		37	Parameters	Cake pH Solic		er Sand LC	S CI	Са	CaCl Mud Log			
Depth			B7 Drilling	Parameters	Cake pH Solic	ds Oil Wat			Ca as:Back	Mud Log	/ /		/
•	ı R	8.70 3	B7 Drilling	Parameters PM Torque		ds Oil Wat	s. De	pth G	as:Back	Mud Log	// I Conn Tri		/
•	ı R	8.70 3	Drilling WOB R	Parameters PM Torque		ds Oil Wat	s. De	pth G	as:Back	Mud Log Max C	// I Conn Tri		/
•	ı R	8.70 3	Drilling WOB R	Parameters PM Torque		ds Oil Wat	s. De	pth G	as:Back	Mud Log Max C	// I Conn Tri		/
•	ı R	8.70 3	Drilling WOB R rds for this	Parameters PM Torque	Flow AV:DC	ds Oil Wat	ss. De No Mi	pth G	as:Back	Mud Log Max C on for this	// I Conn Tri	ip Pore	/
•	n R g Parame	8.70 3 OP Av/Mx eters Reco	Drilling WOB R rds for this	Parameters PM Torque	Flow AV:DC	Is Oil Wat	ss. De No Mi	pth G Id Log Ir	as:Back	Mud Log Max C on for this Envir	/ / Conn Tri report.	ip Pore	/
No Drilling) R g Paramo Used	8.70 3 COP Av/Mx eters Recor	Drilling WOB R rds for this tory Item	Parameters PM Torque report.	Flow AV:DC	AV:DP Pres	ss. De No Mu mation	pth G Id Log Ir	as:Back	Mud Log Max C on for this Envir	/ / Conn Tri report.	ip Pore	Pres.
No Drilling	n R g Paramo Used	8.70 3 COP Av/Mx eters Recon Invent	Drilling WOB R rds for this tory Item	Parameters PM Torque report.	Flow AV:DC	AV:DP Pres	s. De No Mu mation rs Since:	pth G Id Log Ir	as:Back	Mud Log Max C on for this Envir	/ / Conn Tri report.	ip Pore	Pres.
No Drilling	n R g Paramo Used	8.70 3 COP Av/Mx eters Recon Invent	Drilling WOB R rds for this tory Item	Parameters PM Torque report.	Flow AV:DC	AV:DP Pres	ss. De No Mu mation rs Since: Aid:	pth G Id Log Ir	as:Back	Mud Log Max C on for this Envir	/ / Conn Tri report.	ip Pore	Pres.
No Drilling	n R g Paramo Used	8.70 3 COP Av/Mx eters Recon Invent	Drilling WOB R rds for this tory Item	Parameters PM Torque report.	Flow AV:DC nt. LTI: Med: Accident Description Oper: 2	AV:DP Pres Safety Infor Day 1st n: Cont: 8 S	ss. De No Mu mation rs Since: Aid: Gerv: 0 Ot	pth G Id Log Ir C hr: 0	as:Back	Mud Log Max C on for this Envir	/ / Conn Tri report.	ip Pore	Pres.
No Drilling	n R g Paramo Used	8.70 3 COP Av/Mx eters Recon Invent	Drilling WOB R rds for this tory Item	Parameters PM Torque report.	Flow AV:DC	AV:DP Pres Safety Infor Day 1st n: Cont: 8 S	ss. De No Mu mation rs Since: Aid:	pth G Id Log Ir	as:Back	Mud Log Max C on for this Envir	/ / Conn Tri report.	ip Pore	Pres.
No Drilling	n R g Paramo Used	8.70 3 COP Av/Mx eters Recon Invent	Drilling WOB R rds for this tory Item	Parameters PM Torque report.	Flow AV:DC	AV:DP Pres Safety Infor Day 1st n: Cont: 8 S	ss. De No Mu mation /s Since: Aid: Gerv: 0 Ot Hours:	pth G Id Log Ir C hr: 0	as:Back	Mud Log Max C on for this Envir	/ / Conn Tri report.	ip Pore	Pres.
No Drilling	y Paramo y Paramo Used pry Recc	8.70 3 COP Av/Mx eters Record Invent Invent. ords for this	Drilling WOB R rds for this tory Item	Parameters PM Torque report.	Flow AV:DC	AV:DP Pres Safety Infor Day 1st n: Cont: 8 S onnel: 10	ss. De No Mu mation /s Since: Aid: Gerv: 0 Ot Hours:	pth G Id Log Ir C hr: 0	as:Back	Mud Log Max C on for this Envir	/ / Conn Tri report.	ip Pore	Pres.
No Drilling Item No Invento	y Paramo y Paramo Used pry Recc	8.70 3 COP Av/Mx eters Record Invent Invent. ords for this	Drilling WOB R rds for this tory Item	Parameters PM Torque report.	Flow AV:DC	AV:DP Pres Safety Infor Day 1st n: Cont: 8 S onnel: 10	ss. De No Mu mation /s Since: Aid: Gerv: 0 Ot Hours:	pth G Id Log Ir C hr: 0	as:Back	Mud Log Max C on for this Envir	/ / Conn Tri report.	ip Pore	Pres.
No Drilling Item No Invento	y Paramo y Paramo Used ory Recc	8.70 3 COP Av/Mx eters Record Invent Invent. ords for this ms:	Drilling WOB R rds for this tory Item	Parameters PM Torque report.	Flow AV:DC	AV:DP Pres Safety Infor Day 1st n: Cont: 8 S onnel: 10	ss. De No Mu mation /s Since: Aid: Gerv: 0 Ot Hours:	pth G Id Log Ir C hr: 0	as:Back	Mud Log Max C on for this Envir	/ / Conn Tri report.	ip Pore	Pres.
No Drilling Item No Invento	y Paramo y Paramo Used ory Recc t Proble Conditio	8.70 3 COP Av/Mx eters Record Invent Invent. ords for this ms:	Drilling WOB R rds for this tory Item	Parameters PM Torque report.	Flow AV:DC	AV:DP Pres Safety Infor Day 1st n: Cont: 8 S onnel: 10	ss. De No Mu mation /s Since: Aid: Gerv: 0 Ot Hours:	pth G Id Log Ir C hr: 0	as:Back	Mud Log Max C on for this Envir	/ / Conn Tri report.	ip Pore	Pres.
No Drilling Item No Invento Equipmen	y Paramo y Paramo Used ory Recc t Proble Conditio Status:	8.70 3 COP Av/Mx eters Record Invent Invent. ords for this ms:	Drilling WOB R rds for this tory Item s report.	Parameters PM Torque report. Used Inve	Flow AV:DC	AV:DP Pres Safety Infor Day 1st n: Cont: 8 S onnel: 10	ss. De No Mu mation /s Since: Aid: Gerv: 0 Ot Hours:	pth G Id Log Ir hr: 0 0	as:Back	Mud Log Max C on for this Envir	/ / Conn Tri report.	ip Pore	Pres.



Report No: 5

Daily Drilling Report Well ID: Forge 78-32

Job ID: Original

GRG

Well Name: 78-32

Report For 17-Mar-19

Sect: 26 Town: 26S Rng: 9W County: Beaver State: UT

Report N	•											Report Fo		
Operator:		University	of Utah R	ig:		#10031	Spud Date:		13-Mar-	9 Daily 0	Cost / M	ud (\$):		
Measured	Depth (ft	:):	1550 W	orking Inter	rest:		Wellbore:	Origir	nal Wellbo	re AFE N	о.	AFE (\$)	Actua	al (\$)
Vertical De	epth (ft):		1546 L a	ast Casing:	9.6	25 at 704	RKB Elevat	ion (ft):	5.	'0			-	
Proposed	TD (ft):		3000 N	ext Casing:	5.500) at 3,000							-	
Hole Made	e (ft) / Hrs	: 55	0/12.5 L a	ast BOP Tes	st: 1	5-Mar-19				Totals	:		-	
Average R	OP (ft/hr):	44.0 N	ext BOP Tes	st: 3	0-Mar-19				Well C	ost (\$):			
Drilling Da	ays (act./p	, olan):	5/0 Flat I	Days (act./pl	an):	0/0	Total Days	(act./pla	n):	5/0 Da	ys On L	ocation:		5
Current O	• • •						ns. Survey @	•	•		•		1.610' wit	th.
Planned O							h fiber optics		•			,	<i>,</i>	
Toolpushe	•	Curtis, Kol				•	Virgil Welch				Tel N	0.:		
Comments	•	ourio, rioi	in monote		Cap		thigh troion,	, nogor /	interna			•		
2 records	-	d				Onoratio	ons Summa	r\/						
From	То	Elapsed	End MD(ft	Code		operatio		operatio	ns Descr	intion			Non-	Pro
2:00	3:00	1.00) 10-6-3	RIH	to 700'		operatio					Non	1100
3:00	9:00	6.00) WASH			from 700' to 1	000' in (attemnt to	straighter	hole			
9:00	9:30	0.50) 3-58		ey @ 990'		,000 117	allemptic	Straighter	THOIE			
							-	om 1 000'	to 1 100	with full	oturno 1			_
9:30	12:00	2.50	,) 3-2-1			8-3/4" hole fro	JII 1,000	10 1,180		etums. \	1100 2000, R	РМ	•
12:00	12:30	0.50	,) 3-58			50', 3.9 deg	4001 1	1 0071		- 14/05	0000 001/-	20	_
12:30	14:30	2.00	,	7 3-2-1			1" hole from 1	,180° to '	1,297° Wit	i iuli returr	is. WOB	2000, RPM /	υ,	
14:30	15:00	0.50	,	7 3-58		, 0,	67', 3.7 deg	00-1		6 H	1	1000 5511		
15:00	16:30	1.50	,	7 3-2-1			1" hole from 1	,297' to 1	,417' with	tull return	s. WOB	1000, RPM 9	U, SPP	•
16:30	17:00	0.50	,	7 3-58		ey @ 1,38								
17:00	21:00	4.00	,) 3-2-1			hole from 1,	,417' to 1	,537' with	full returns	s. WOB '	1000, RPM 90), SPP	•
21:00	21:30	0.50		3-58		ey @ 1,53								
21:30	0:00	2.50	1,550) 3-2-1			hole from 1,		,550' with	full returns	s. WOB [^]	1000, RPM 90), SPP	
No/Pup M	lako Ma	dol Diam	lote f	1.4					vra Mud		Droce		υυр	116
No/Run M		odel Diam	1 1		Dist	Hrs RC	OP WOB	RPM To	•	Wt Flow		J.Vel P.Drp		JIF
2 2 BA	KER DS6	616N 8.75	0 20 20	0 20 20	Dist 550	Hrs R0 12.5 4	OP WOB 4.0 1,500	RPM To 90	. 8.	90 450	600	78 49	13	163
	KER DS6	616N 8.75	1 1	0 20 20	Dist 550	Hrs RC	OP WOB 4.0 1,500	RPM To	. 8.		600			163
2 2 BA	KER DS6	616N 8.75	0 20 20	0 20 20	Dist 550	Hrs R0 12.5 4	OP WOB 4.0 1,500	RPM To 90	. 8.	90 450	600	78 49	13	163
2 2 BA DepthOut	KER DS6 :: 2,617	616N 8.75 Cutter:I	0 20 20 nner/Oute	20 20 20 r: 3/3	Dist 550 Dull	Hrs R(12.5 4 :Maj/Oth:	OP WOB 4.0 1,500 NO/NO	RPM To 90	. 8.	90 450	600	78 49	13	163
2 2 BA	KER DS6 :: 2,617	616N 8.75 Cutter:I	0 20 20 nner/Oute	0 20 20	Dist 550 Dull	Hrs R0 12.5 4 :Maj/Oth: 0 = 464.96	OP WOB 4.0 1,500 NO/NO	RPM To 90	. 8.	90 450	600	78 49	13	163
2 2 BA DepthOut BHA - No.	KER DS6 :: 2,617 .4- BIT	616№ 8.75 Cutter: , STAB, DC	0 20 20 nner/Oute) 20 20 r: 3/3 C, STAB, 13	Dist 550 Dull DC, XC	Hrs R0 12.5 4 :Maj/Oth: 0 0 = 464.96 Mud	OP WOB 4.0 1,500 NO/NO Reports	RPM To 90 WearLo	6: A	90 450 Brgs: X	600 Gau	78 49 ige: 0	13 Pull: F	163 FM
2 2 BA DepthOut BHA - No. Date/Ti	KER DS6 :: 2,617 . 4 - BIT me C	016№ 8.75 Cutter:I	0 20 20 nner/Oute ;, STAB, D0) 20 20 r: 3/3 C, STAB, 13	Dist 550 Dull DC, XC	Hrs R0 12.5 4 :Maj/Oth: 0 0 = 464.96 Mud	OP WOB 4.0 1,500 NO/NO	RPM To 90 WearLo	6: A	90 450	600	78 49 ige: 0 Gels	13 Pull: F	163 ⁼M In/Ou
2 2 BA DepthOut BHA - No.	KER DS6 :: 2,617 . 4 - BIT me C	016№ 8.75 Cutter:I	0 20 20 nner/Oute) 20 20 r: 3/3 C, STAB, 13	Dist 550 Dull DC, XC	Hrs R0 12.5 4 :Maj/Oth: 0 0 = 464.96 Mud	OP WOB 4.0 1,500 NO/NO Reports	RPM To 90 WearLo	6: A	90 450 Brgs: X	600 Gau	78 49 ige: 0	13 Pull: F	163 ⁼M In/Ou
2 2 BA DepthOut BHA - No. Date/Ti	KER DS6 :: 2,617 . 4 - BIT me C	016№ 8.75 Cutter:I	0 20 20 nner/Oute ;, STAB, D0 . PV 7) 20 20 r: 3/3 C, STAB, 13 YP Filt .	Dist 550 Dull DC, XC Cake	Hrs R0 12.5 4 :Maj/Oth: 0 0 = 464.96 Mud	OP WOB 4.0 1,500 NO/NO Reports	RPM To 90 WearLo	6: A	90 450 Brgs: X	600 Gau CaCl	78 49 ige: 0 Gels / /	13 Pull: F	163 ⁼M In/Ou
2 2 BA DepthOut BHA - No. Date/Ti 17-Mar-19	KER DS6 :: 2,617 .4 - BIT me D 9 22:00	316N 8.75 Cutter: Cutter: , STAB, DC	0 20 20 nner/Oute ;, STAB, D0 . PV 7 Drilling	20 20 20 r: 3/3 C, STAB, 13 YP Filt.	Dist 550 Dull: DC, XC Cake	Hrs RC 12.5 4 :Maj/Oth: 0 0 = 464.96 Mud pH Solid	OP WOB 4.0 1,500 NO/NO Reports Is Oil	RPM To 90 WearLo er Sand	LGS	90 450 Brgs: X	600 Gau CaCl Mud	78 49 ige: 0 Gels / /	13 Pull: F Temp I	163 ⁼M In/Ou
2 2 BA DepthOut BHA - No. Date/Til 17-Mar-19 Deptt	KER DS6 :: 2,617 .4 - BIT me C 9 22:00 h R	316N 8.75 Cutter:I , STAB, DO Dens. Vis 8.90 3 COP Av/Mx	0 20 20 nner/Oute , STAB, Do PV 7 Drilling WOB R	20 20 20 r: 3/3 C, STAB, 13 YP Filt. Parameters PM Torque	Dist 550 Dull: DC, XC Cake S Flow	Hrs RC 12.5 4 :Maj/Oth: - 0 = 464.96 Mud pH Solid AV:DC A	AV:DP Pres	RPM To 90 WearLo er Sand s.	LGS Depth	90 450 Brgs: X CI Ca Gas:Bac	600 Gau CaCl Mud k Max	78 49 Ige: 0 Gels / / Log Conn Tr	13 Pull: F Temp I	163 ⁼M In/Ou
2 2 BA DepthOut BHA - No. Date/Til 17-Mar-19 Deptt	KER DS6 :: 2,617 .4 - BIT me E 9 22:00	316N 8.75 Cutter: Cutter: , STAB, DC	0 20 20 nner/Oute ;, STAB, D0 . PV 7 Drilling	20 20 20 r: 3/3 C, STAB, 13 YP Filt.	Dist 550 Dull: DC, XC Cake	Hrs RC 12.5 4 :Maj/Oth: - 0 = 464.96 Mud pH Solid AV:DC A	AV:DP Pres	RPM To 90 WearLo er Sand s.	LGS Depth	90 450 Brgs: X CI Ca Gas:Bac	600 Gau CaCl Mud k Max	78 49 ige: 0 Gels / /	13 Pull: F Temp I	163 ⁼M In/Ou
2 2 BA DepthOut BHA - No. Date/Til 17-Mar-19 Deptt	KER DS6 :: 2,617 .4 - BIT me C 9 22:00 h R	316N 8.75 Cutter:I , STAB, DO Dens. Vis 8.90 3 COP Av/Mx	0 20 20 nner/Oute , STAB, Do PV 7 Drilling WOB R	20 20 20 r: 3/3 C, STAB, 13 YP Filt. Parameters PM Torque	Dist 550 Dull: DC, XC Cake S Flow	Hrs RC 12.5 4 :Maj/Oth: - 0 = 464.96 Mud pH Solid AV:DC A	AV:DP Pres	RPM To 90 WearLo er Sand s.	LGS Depth	90 450 Brgs: X CI Ca Gas:Bac	600 Gau CaCl Mud k Max	78 49 Ige: 0 Gels / / Log Conn Tr	13 Pull: F Temp I	163 ⁼M In/Ou
2 2 BA DepthOut BHA - No. Date/Til 17-Mar-19 Deptt	KER DS6 :: 2,617 .4 - BIT me C 9 22:00 h R	316N 8.75 Cutter: Cutter: 7, STAB, DC 3 8.90 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 20 20 nner/Oute ;, STAB, D0 7 7 Drilling WOB R 1,000	20 20 20 r: 3/3 C, STAB, 13 YP Filt. Parameters PM Torque	Dist 550 Dull: DC, XC Cake S Flow	Hrs R0 12.5 4. Maj/Oth:	OP WOB 4.0 1,500 NO/NO Incomparison Reports Incomparison Is Oil Wate AV:DP Press 195.9 6	RPM To 90 WearLo er Sand s. 550 No	LGS Depth	90 450 Brgs: X CI Ca Gas:Bac	600 Gau CaCl Mud k Max	78 49 Ige: 0 Gels / / Log Conn Tr	13 Pull: F Temp I	163 ⁼M In/Ou
2 2 BA DepthOut BHA - No. Date/Til 17-Mar-19	KER DS6 :: 2,617 .4 - BIT me C 0 22:00 h R -1550 4	316N 8.75 Cutter: Cutter: 7, STAB, DC 3 0ens. Vis 8.90 3 300P Av/Mx 3 44.0 / 1	0 20 20 nner/Oute ;, STAB, D0 7 7 Drilling WOB R 1,000	20 20 r: 3/3 C, STAB, 13 YP Filt. Parameters PM Torque 90	Dist 550 Dull: DC, XC Cake S Flow 450	Hrs R0 12.5 4. Maj/Oth:	AV:DP Pres	RPM To 90 WearLo er Sand s. 550 No	LGS Depth	90 450 Brgs: X CI Ca Gas:Bac	600 Gau CaCl Mud k Max ion for t	78 49 Ige: 0 Gels / / Log Conn Tr his report.	13 Pull: F Temp I / ip Pore	16: FM In/Ou Pres
2 2 BA DepthOut BHA - No. Date/Til 17-Mar-19	KER DS6 :: 2,617 .4 - BIT me C 0 22:00 h R -1550 4	316N 8.75 Cutter: Cutter: 7, STAB, DC 3 8.90 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 20 20 nner/Oute ;, STAB, D0 7 7 Drilling WOB R 1,000	20 20 20 r: 3/3 C, STAB, 13 YP Filt. Parameters PM Torque	Dist 550 Dull: DC, XC Cake S Flow 450	Hrs R0 12.5 4. Maj/Oth:	OP WOB 4.0 1,500 NO/NO Image: second sec	RPM To 90 WearLo er Sand s. 550 No	LGS Depth	90 450 Brgs: X CI Ca Gas:Bac	600 Gau CaCl Mud k Max ion for t	78 49 ige: 0 Gels / / Log Conn Tr his report. ivironmenti:	13 Pull: F Temp I / ip Pore t 0.000	163 FM In/Ou Pres
2 2 BA DepthOut BHA - No. Date/Ti 17-Mar-19 Depti 1000	KER DS6 :: 2,617 .4 - BIT me C 0 22:00 h R 0-1550 4 Used	316N 8.75 Cutter: Cutter: 7, STAB, DC 3 0ens. Vis 8.90 3 300P Av/Mx 3 44.0 / 1	0 20 20 nner/Oute , STAB, D0 , PV 7 7 Drilling WOB R 1,000 0ry Item	20 20 r: 3/3 C, STAB, 13 YP Filt. Parameters PM Torque 90	Dist 550 Dull: DC, XC Cake S Flow 450	Hrs RC 12.5 4 :Maj/Oth: - 0 = 464.96 Mud pH Solid AV:DC 4 213.9 S	OP WOB 4.0 1,500 NO/NO Image: second sec	RPM To 90 WearLo er Sand s. 550 No mation s Since:	LGS Depth	90 450 Brgs: X CI Ca Gas:Bac J Informat	600 Gau CaCl Mud k Max ion for t Er er Hauleo	78 49 ige: 0 Gels / / Log Conn Tr his report. nvironmenti: Surveys	13 Pull: F Temp I / ip Pore t 0.000 (1 not sl	16: M In/Ou Pres
2 2 BA DepthOut BHA - No. Date/Ti 17-Mar-19 Depti 1000	KER DS6 :: 2,617 .4 - BIT me C 0 22:00 h R 0-1550 4 Used	infold 8.75 Cutter: Cutter: , STAB, DC	0 20 20 nner/Oute , STAB, D0 , PV 7 7 Drilling WOB R 1,000 0ry Item	20 20 r: 3/3 C, STAB, 13 YP Filt. Parameters PM Torque 90	Dist 550 Dull: DC, XC Cake S Flow 450	Hrs RC 12.5 4 :Maj/Oth: - 0 = 464.96 Mud pH Solid AV:DC A 213.9 S TI: -	OP WOB 4.0 1,500 NO/NO Reports Is Oil Wate AV:DP Pres 195.9 6 Safety Inform	RPM To 90 WearLo er Sand s. 550 No mation s Since:	LGS Depth	90 450 Brgs: X CI Ca Gas:Bac J Informat	600 Gau CaCl Mud k Max ion for t Er er Hauleo	78 49 ige: 0 Gels / / Log Conn Tr his report. nvironment: Surveys im. TVD	13 Pull: F Temp I / / / / / / / / / / / / /	16 M In/Ou Pres acre- howr EW
2 2 BA DepthOut BHA - No. Date/Ti 17-Mar-19 Depti 1000	KER DS6 :: 2,617 .4 - BIT me C 0 22:00 h R 0-1550 4 Used	infold 8.75 Cutter: Cutter: , STAB, DC	0 20 20 nner/Oute , STAB, D0 , PV 7 7 Drilling WOB R 1,000 0ry Item	20 20 r: 3/3 C, STAB, 13 YP Filt. Parameters PM Torque 90	Dist 550 Dull: DC, XC Cake S Flow 450 ent. L' M A	Hrs R(12.5 4 :Maj/Oth:) = 464.96 Mud pH Solid AV:DC 4 213.9 S TI: led:	OP WOB 4.0 1,500 NO/NO Ison Reports Ison Oil Wate AV:DP Press 195.9 Oil Safety Inform Day 1st	RPM To 90 WearLo er Sand s. 550 No mation s Since:	LGS Depth	90 450 Brgs: X CI Ca Gas:Bac J Informat	600 Gau CaCl Mud k Max ion for t er Hauleo Inc. Az 3.7	78 49 ige: 0 Gels / / Log / / Conn Tr his report. Image: 100 nvironment: Surveys im. TVD 0 1266	13 Pull: F Temp I / / rip Pore t 0.000 (1 not sł NS 41	16 FM In/Ou Pres acre howr EW
2 2 BA DepthOut BHA - No. Date/Ti 17-Mar-19 Depti 1000	KER DS6 :: 2,617 .4 - BIT me C 0 22:00 h R 0-1550 4 Used	infold 8.75 Cutter: Cutter: , STAB, DC	0 20 20 nner/Oute , STAB, D0 , PV 7 7 Drilling WOB R 1,000 0ry Item	20 20 r: 3/3 C, STAB, 13 YP Filt. Parameters PM Torque 90	Dist 550 Dull: DC, XC Cake S Flow 450 ent. L M A D	Hrs RC 12.5 4 :Maj/Oth:	OP WOB 4.0 1,500 NO/NO Incomparent statements Reports Incomparent statements Is Oil Wate AV:DP Press 195.9 Comparent statements Safety Inform Day 1st / 1st /	RPM To 90 WearLo er Sand s. 550 No mation s Since:	LGS Depth Mud Log	90 450 Brgs: X CI Ca Gas:Bac J Informat	600 Gau CaCl Mud k Max ion for t Er er Hauleo Inc. Az 3.7 4	78 49 ige: 0 Gels / / Log // Conn Tr his report. // nvironmenti: Surveys im. TVD 0 1266 0 1386	13 Pull: F Temp I / ip Pore t 0.000 (1 not sl NS 41 50	16: M In/Ou Pres acre- howr EW (
2 2 BA DepthOut BHA - No. Date/Ti 17-Mar-19 Depti 1000	KER DS6 :: 2,617 .4 - BIT me C 0 22:00 h R 0-1550 4 Used	infold 8.75 Cutter: Cutter: , STAB, DC	0 20 20 nner/Oute , STAB, D0 , PV 7 7 Drilling WOB R 1,000 0ry Item	20 20 r: 3/3 C, STAB, 13 YP Filt. Parameters PM Torque 90	Dist 550 Dull: DC, XC Cake S Flow 450 ent. L M A D O	Hrs RC 12.5 4 Maj/Oth: 4 D = 464.96 Mud pH Solid AV:DC A 213.9 S TI: scident ed: ccident	OP WOB 4.0 1,500 NO/NO Image: state stat	RPM To 90 WearLo er Sand s. 550 No mation s Since: Aid:	LGS Depth Mud Log	90 450 Brgs: X CI Ca Gas:Bac J Informat Cum. Wat 1267 1387	600 Gau CaCl Mud k Max ion for t er Hauleo Inc. Az 3.7	78 49 ige: 0 Gels / / Log / / Conn Tr his report. Image: 100 nvironment: Surveys im. TVD 0 1266	13 Pull: F Temp I / / rip Pore t 0.000 (1 not sł NS 41	163 FM In/Ou Pres acre- howr EW ((((
2 2 BA DepthOut BHA - No. Date/Ti 17-Mar-19 Depti 1000	KER DS6 :: 2,617 .4 - BIT me C 0 22:00 h R 0-1550 4 Used	infold 8.75 Cutter: Cutter: , STAB, DC	0 20 20 nner/Oute , STAB, D0 , PV 7 7 Drilling WOB R 1,000 0ry Item	20 20 r: 3/3 C, STAB, 13 YP Filt. Parameters PM Torque 90	Dist 550 Dull: DC, XC Cake S Flow 450 ent. L M A D O T	Hrs RC 12.5 4 Maj/Oth: D = 464.96 Mud pH Solid AV:DC 4 213.9 S TI: led: ccident escription per: 2 0 otal Perso	OP WOB 4.0 1,500 NO/NO Reports Soli Wate AV:DP Pres 195.9 6 Safety Inform Day 1st a n: Cont: 8 S pnnel: 10 I	RPM To 90 WearLo er Sand s. 550 No mation s Since: Aid: erv: 0 Hours:	LGS Depth Mud Log	90 450 Brgs: X CI Ca Gas:Bac J Informat	600 Gau CaCl Mud k Max ion for t Er er Haulec Inc. Az 3.7 4	78 49 ige: 0 Gels / // / Log // Conn Tr his report. // Nvironmente: // Surveys // 0 1266 0 1386 0 1416	13 Pull: F Temp I / / / / / / / / / / / / /	16: M In/Ou Pres acre- howr EW ((
2 2 BA DepthOut BHA - No. Date/Ti 17-Mar-19 Depti 1000 Item No Invent	KER DS6 :: 2,617 .4 - BIT me C 0 22:00 h R 0-1550 4 Used :ory Reco	Cutter: Cutter: Cutter: Cutter: Cutter: Coens. Vis 8.90 3 COP Av/Mx 44.0 / Invent Invent. ords for this	0 20 20 nner/Oute , STAB, D0 , PV 7 7 Drilling WOB R 1,000 0ry Item	20 20 r: 3/3 C, STAB, 13 YP Filt. Parameters PM Torque 90	Dist 550 Dull: DC, XC Cake S Flow 450 ent. L M A D O T	Hrs RC 12.5 4 Maj/Oth: D = 464.96 Mud pH Solid AV:DC 4 213.9 S TI: led: ccident escription per: 2 0 otal Perso	OP WOB 4.0 1,500 NO/NO Image: state stat	RPM To 90 WearLo er Sand s. 550 No mation s Since: Aid: erv: 0 Hours:	LGS Depth Mud Log	90 450 Brgs: X CI Ca Gas:Bac J Informat	600 Gau CaCl Mud k Max ion for t Er er Haulec Inc. Az 3.7 4	78 49 ige: 0 Gels / // / Log // Conn Tr his report. // Nvironmente: // Surveys // 0 1266 0 1386 0 1416	13 Pull: F Temp I / / / / / / / / / / / / /	163 FM In/Ou Pres acre- howr EW ((() ()
2 2 BA DepthOut BHA - No. Date/Ti 17-Mar-19 Depti 1000	KER DS6 :: 2,617 .4 - BIT me C 0 22:00 h R 0-1550 4 Used :ory Reco	Cutter: Cutter: Cutter: Cutter: Cutter: Coens. Vis 8.90 3 COP Av/Mx 44.0 / Invent Invent. ords for this	0 20 20 nner/Oute , STAB, D0 , PV 7 7 Drilling WOB R 1,000 0ry Item	20 20 20 r: 3/3 C, STAB, 13 YP Filt. Parameters PM Torque 90	Dist 550 Dull: DC, XC Cake S Flow 450 ent. L M A D O T	Hrs RC 12.5 4 Maj/Oth: D = 464.96 Mud pH Solid AV:DC 4 213.9 S TI: led: ccident escription per: 2 0 otal Perso	OP WOB 4.0 1,500 NO/NO Reports Soli Wate AV:DP Pres 195.9 6 Safety Inform Day 1st a n: Cont: 8 S pnnel: 10 I	RPM To 90 WearLo er Sand s. 550 No mation s Since: Aid: erv: 0 Hours:	LGS Depth Mud Log	90 450 Brgs: X CI Ca Gas:Bac J Informat	600 Gau CaCl Mud k Max ion for t Er er Haulec Inc. Az 3.7 4	78 49 ige: 0 Gels / // / Log // Conn Tr his report. // Nvironmente: // Surveys // 0 1266 0 1386 0 1416	13 Pull: F Temp I / / / / / / / / / / / / /	16: M In/Ou Pres acre- howr EW ((
2 2 BA DepthOut BHA - No. 17-Mar-19 1000 1000 1000 1000 Equipment	KER DS6 :: 2,617 .4 - BIT me C 22:00 h R -1550 4 Used :ory Reco	316N 8.75 Cutter:I Cutter:I Cutter:I Cutter:I Correlation State COP Av/Mx Invent Invent. ords for this	0 20 20 nner/Oute , STAB, D0 , PV 7 7 Drilling WOB R 1,000 0ry Item	20 20 20 r: 3/3 C, STAB, 13 YP Filt. Parameters PM Torque 90	Dist 550 Dull: DC, XC Cake S Flow 450 ent. L M A D O T	Hrs RC 12.5 4 Maj/Oth: D = 464.96 Mud pH Solid AV:DC 4 213.9 S TI: led: ccident escription per: 2 0 otal Perso	OP WOB 4.0 1,500 NO/NO Reports Soli Wate AV:DP Pres 195.9 6 Safety Inform Day 1st a n: Cont: 8 S pnnel: 10 I	RPM To 90 WearLo er Sand s. 550 No mation s Since: Aid: erv: 0 Hours:	LGS Depth Mud Log	90 450 Brgs: X CI Ca Gas:Bac J Informat	600 Gau CaCl Mud k Max ion for t Er er Haulec Inc. Az 3.7 4	78 49 ige: 0 Gels / // / Log // Conn Tr his report. // Nvironmente: // Surveys // 0 1266 0 1386 0 1416	13 Pull: F Temp I / / / / / / / / / / / / /	163 FM In/Ou Pres acre- howr EW ((((
2 2 BA DepthOut BHA - No. 17-Mar-19 1000 1000 1000 1000 Equipmer Location	KER DS6 :: 2,617 .4 - BIT me C 22:00 h R -1550 4 Used :ory Reco	316N 8.75 Cutter:I Cutter:I Cutter:I Cutter:I Correlation State COP Av/Mx Invent Invent. ords for this	0 20 20 nner/Oute , STAB, D0 , PV 7 7 Drilling WOB R 1,000 0ry Item	20 20 20 r: 3/3 C, STAB, 13 YP Filt. Parameters PM Torque 90	Dist 550 Dull: DC, XC Cake S Flow 450 ent. L M A D O T	Hrs RC 12.5 4 Maj/Oth: D = 464.96 Mud pH Solid AV:DC 4 213.9 S TI: led: ccident escription per: 2 0 otal Perso	OP WOB 4.0 1,500 NO/NO Reports Soli Wate AV:DP Pres 195.9 6 Safety Inform Day 1st a n: Cont: 8 S pnnel: 10 I	RPM To 90 WearLo er Sand s. 550 No mation s Since: Aid: erv: 0 Hours:	LGS Depth Mud Log	90 450 Brgs: X CI Ca Gas:Bac J Informat	600 Gau CaCl Mud k Max ion for t Er er Haulec Inc. Az 3.7 4	78 49 ige: 0 Gels / // / Log // Conn Tr his report. // Nvironmente: // Surveys // 0 1266 0 1386 0 1416	13 Pull: F Temp I / / / / / / / / / / / / /	163 FM In/Ou Pres acre- howr EW ((() ()
2 2 BA DepthOut BHA - No. 17-Mar-19 Dept1 1000 Item No Invent Equipmer Location	KER DS6 :: 2,617 .4 - BIT me E 0 22:00 h R -1550 4 Used cory Reco nt Problem Condition t Status:	316N 8.75 Cutter:I , STAB, DC Dens. Vis 8.90 3 300	0 20 20 nner/Oute , STAB, D0 PV 7 Drilling WOB R 1,000 ory Item s report.	20 20 r: 3/3 C, STAB, 13 YP Filt. Parameters PM Torque 90 Used Inv	Dist 550 Dull: DC, XC Cake S Flow 450 ent. L M A A D O T G R	Hrs RC 12.5 4 Maj/Oth: D = 464.96 Mud pH Solid AV:DC 4 213.9 S TI: led: ccident escription per: 2 0 otal Perso ig/Weath	OP WOB 4.0 1,500 NO/NO Reports Reports Isonil Wate AV:DP Press 195.9 C Safety Inform Day 1st / Ist / n: Cont: 8 Cont: 8 S ner Informat Ist /	RPM To 90 WearLo WearLo Solution er Sand s. Solution Solution No mation s Since: Aid: O Hours: Since:	C: A LGS Depth Mud Log	 450 Brgs: X CI Ca Gas:Bac Jinformat Cum. Wat MD 1267 1387 1417 	600 Gau CaCl Mud k Max ion for t Er er Haulec Inc. Az 3.7 4	78 49 ige: 0 Gels / / Log Conn Tr his report. Nvironmente: Surveys im. TVD 0 1266 0 1386 0 1416	13 Pull: F Temp I / / / / / / / / / / / / /	163 FM In/Ou Pres acre- howr EW ((((
2 2 BA DepthOut BHA - No. 17-Mar-19 1000 1000 1000 1000 Equipmer Location	.KER DS6 .4 - BIT me E 0 22:00 h R -1550 4 Output Second Record .KER DS6 A	NIGN 8.75 Cutter:I Invent Invent. Ords for this ms: n: Vis.:	0 20 20 nner/Oute , STAB, D0 PV 7 Drilling WOB R 1,000 ory Item s report.	20 20 r: 3/3 C, STAB, 13 YP Filt. Parameters PM Torque 90 Used Inv	Dist 550 Dull: DC, XC Cake S Flow 450 ent. L M A A D O T G R	Hrs RC 12.5 4 Maj/Oth: D = 464.96 Mud pH Solid AV:DC 4 213.9 S TI: led: ccident escription per: 2 0 otal Perso ig/Weath : 30.14	OP WOB 4.0 1,500 NO/NO Reports Soli Wate AV:DP Pres 195.9 6 Safety Inform Day 1st a n: Cont: 8 S pnnel: 10 I	RPM To 90 WearLo er Sand s. 550 No mation s Since: Aid: erv: 0 Hours:	C: A LGS Depth Mud Log	 450 Brgs: X CI Ca Gas:Bac Jinformat Cum. Wat MD 1267 1387 1417 	600 Gau CaCl Mud k Max ion for t Er er Haulec Inc. Az 3.7 4	78 49 ige: 0 Gels / / Log Conn Tr his report. Nvironmente: Surveys im. TVD 0 1266 0 1386 0 1416	13 Pull: F Temp I / / / / / / / / / / / / /	163 FM In/Ou Pres acre- hown EW CC CC CC



Job ID: Original

GRG

Well Name: 78-32

Report No									S Rng: 9	W Obul	ny. Doaro	
Operator:	o: 6											18-Mar-19
		University	of Utah Rig	j:	#10031	Spud Date:		13-Mar-19	Daily Co	ost / Mud	(\$):	-
Measured I	Depth (ft	i):	2077 Wo	orking Interest:		Wellbore:	Origin	al Wellbor	e AFE No		AFE (\$)	Actual (\$
Vertical De				-	9.625 at 704	RKB Eleva	-)			-
Proposed 1	ΓD (ft):		3000 Ne	xt Casing: 5.	500 at 3,000							-
Hole Made	(ft) / Hrs	5 2	7/22.0 La	st BOP Test:	15-Mar-19				Totals:			-
Average R	• •		23.95 Ne	xt BOP Test:	30-Mar-19				Well Co	st (\$):		-
Drilling Day	•	•	6/0 Flat D	ays (act./plan):	: 0/0	Total Days	act./plar	ו):	6/0 Day s		ation:	
Current Op		. ,		2,077' to 2,205'		-	(*** F *	,				
Planned Or				Prepare to run			otics cable	attached a	ind cement	in place		
Foolpushe	-	r Curtis, Koll			upervisors:	•				Tel No.:		
Comments	•			,867' in case of	-	-	i, riogor / i	iniona				
Johnnenito	· otart					ons Summa	arv					
From	То	Elapsed	End MD(ft)	Code			-	ns Descrip	otion			Non-Pro
0:00	2:00	2.00	1,597	3-2-1 T	ime drill 8-3/4	hole from 1	,550' to 1,	597' with fu	ull returns a	and no ho	le issues	
2:00	2:30	0.50	1,597		urvey @ 1,55							
2:30	7:30	5.00			ime drill 8-3/4	-	,597' to 1.	687' with fu	ull returns a	and no ho	le issues	
7:30	8:00	0.50	1,687		urvey @ 1,65		,					
8:00	12:00	4.00	1,777		ime drill 8-3/4	. 0	.687' to 1	777' with fi	ull returns :	and no ho	le issues	
12:00	12:30	0.50	1,777		urvey @ 1,74		, I,					
12:30	15:00	2.50	1,867	3-2-1 T	ime drill 8-3/4 neasure, start	hole from 1		867', notice	e small am	ount of lo	sses too sn	nall to
15:00	15:30	0.50	1 867		ervice rig							
15:30	0:00	8.50	,		ime drill 8-3/4	" hole from 1	867' to 2	077'				
DepthOut:	2,617	Cutter:I	nner/Outer:	3/3 D	oull:Maj/Oth:	NO/NO	WearLo	c: A	Brgs: X	Gauge	: 0	Pull: FM
BHA - No.	4 - BIT	F, STAB, DC	C, STAB, DC	, STAB, 13 DC,								
		· ·	· ·	· · · ·	Mud	Reports	tor Sand				Gols	Tomp In/O
Date/Tin	ne C	Dens. Vis.	PV	· · · ·		Reports	ter Sand	LGS CI	Ca	CaCl	Gels	Temp In/O
Date/Tin	ne C	· ·	PV	· · · ·	Mud	Reports	ter Sand	LGS CI	Ca	CaCl	Gels / /	Temp In/O
	ne C	Dens. Vis.	. PV	/P Filt. Cal	Mud	Reports	ter Sand	LGS CI	Ca		11	Temp In/O
Date/Tin 18-Mar-19	ne D 22:00	Dens. Vis . 8.90 4	PV 1 Drilling P	/P Filt. Cal	Mud ke pH Solid	Reports Is Oil Wat			Ca Gas:Back	Mud Lo	/ / g	1
Date/Tin 18-Mar-19 Depth	me E 22:00	Dens. Vis. 8.90 4 ROP Av/Mx	PV 1 Drilling P WOB RF	/P Filt. Cal arameters M Torque Fl	Mud ke pH Solid ow AV:DC A	Reports Is Oil Wat	SS.	Depth (Gas:Back	Mud Lo Max	/ / g Conn Tri	1
Date/Tin 18-Mar-19	me E 22:00	Dens. Vis . 8.90 4	PV 1 Drilling P WOB RF	(P Filt. Cal arameters M Torque Fi	Mud ke pH Solid	Reports Is Oil Wat	SS.		Gas:Back	Mud Lo Max	/ / g Conn Tri	1
Date/Tin 18-Mar-19 Depth	me E 22:00	Dens. Vis. 8.90 4 ROP Av/Mx	PV 1 Drilling P WOB RF 8,000	/P Filt. Cal arameters M Torque Fl	Mud ke pH Solid ow AV:DC A 450 213.9	Reports Is Oil Wat	ss. 800 No	Depth (Gas:Back	Mud Lo Max n for this	/ / g Conn Tri	p Pore Pre
Date/Tin 18-Mar-19 Depth	me C 22:00 N R -2077 2	Dens. Vis. 8.90 4 ROP Av/Mx 24.0 / 30.0	PV 1 Drilling P WOB RF 8,000	/P Filt. Cal arameters M Torque Fl	Mud ke pH Solid ow AV:DC A 450 213.9	Reports Is Oil Wat AV:DP Pres 195.9 Safety Infor	ss. 800 No	Depth (Gas:Back	Mud Lo Max n for this Envi	/ / g Conn Tri s report.	p Pore Pre
Date/Tin 18-Mar-19 Depth 1550- Item	ne C 22:00 n R -2077 2 Used	Dens. Vis. 8.90 4 ROP Av/Mx 24.0 / 30.0	PV 1 Drilling P WOB RF 8,000	/P Filt. Cal arameters M Torque Fil 90 4	Mud ke pH Solid ow AV:DC A 450 213.9	Reports Is Oil Wat AV:DP Pres 195.9 Safety Infor Day	ss. 800 No rmation	Depth (Gas:Back Informatic	Mud Lo Max n for this Envi	/ / g Conn Tri s report.	p Pore Pre
Date/Tin 18-Mar-19 Depth 1550- Item	ne C 22:00 n R -2077 2 Used	Dens. Vis. 8.90 4 ROP Av/Mx 4 24.0 / 30.0 1 Invent 1	PV 1 Drilling P WOB RF 8,000	/P Filt. Cal arameters M Torque Fil 90 4	Mud ke pH Solid ow AV:DC A 450 213.9 LTI:	Reports Is Oil Wat AV:DP Pres 195.9 Safety Infor Day	ss. 800 No rmation ys Since:	Depth (Gas:Back Informatic	Mud Lo Max n for this Envi	/ / g Conn Tri s report.	p Pore Pre
Date/Tin 18-Mar-19 Depth 1550- Item	ne C 22:00 n R -2077 2 Used	Dens. Vis. 8.90 4 ROP Av/Mx 4 24.0 / 30.0 1 Invent 1	PV 1 Drilling P WOB RF 8,000	/P Filt. Cal arameters M Torque Fil 90 4	Mud ke pH Solid ow AV:DC / 450 213.9 LTI: Med:	Reports Is Oil Wat AV:DP Pres 195.9 Safety Infor Day 1st	ss. 800 No rmation ys Since: Aid:	Depth 0 Mud Log	Gas:Back Informatic	Mud Lo Max n for this Envi	/ / g Conn Tri s report.	p Pore Pre
Date/Tin 18-Mar-19 Depth 1550- Item	ne C 22:00 n R -2077 2 Used	Dens. Vis. 8.90 4 ROP Av/Mx 4 24.0 / 30.0 1 Invent 1	PV 1 Drilling P WOB RF 8,000	/P Filt. Cal arameters M Torque Fil 90 4	Mud ke pH Solid ow AV:DC A 450 213.9 LTI: Med: Accident	Reports Is Oil Wat AV:DP Pres 195.9 Safety Infor Day 1st n: Cont: 8 \$	ss. 800 No rmation ys Since:	Depth 0 Mud Log	Gas:Back Informatic	Mud Lo Max n for this Envi	/ / g Conn Tri s report.	p Pore Pre
Date/Tin 18-Mar-19 Depth 1550- Item	ne C 22:00 n R -2077 2 Used	Dens. Vis. 8.90 4 ROP Av/Mx 4 24.0 / 30.0 1 Invent 1	PV 1 Drilling P WOB RF 8,000	/P Filt. Cal arameters M Torque Fil 90 4	Mud ke pH Solid ow AV:DC A 450 213.9 LTI: Med: Accident Descriptior Oper: 2 c Total Perso	Reports Is Oil Wat AV:DP Pres 195.9 Safety Infor Day 1st n: Cont: 8 \$ 000000000000000000000000000000000000	ss. 800 No rmation ys Since: Aid: Serv: 0 Hours:	Depth 0 Mud Log Othr: 0	Gas:Back Informatic	Mud Lo Max n for this Envi	/ / g Conn Tri s report.	p Pore Pre
Date/Tin 18-Mar-19 Depth 1550- Item No Invento	ne E 22:00 N R -2077 2 Used ory Reco	Dens. Vis. 8.90 4 ROP Av/Mx 24.0 / 30.0 Invent. Invent. Dords for this	PV 1 Drilling P WOB RF 8,000	/P Filt. Cal arameters M Torque Fil 90 4	Mud ke pH Solid ow AV:DC A 450 213.9 LTI: Med: Accident Descriptior Oper: 2 c Total Perso	Reports Is Oil Wat AV:DP Pres 195.9 Safety Infor Day 1st n: Cont: 8 \$	ss. 800 No rmation ys Since: Aid: Serv: 0 Hours:	Depth 0 Mud Log Othr: 0	Gas:Back Informatic	Mud Lo Max n for this Envi	/ / g Conn Tri s report.	p Pore Pre
Date/Tin 18-Mar-19 Depth 1550- Item	ne E 22:00 N R -2077 2 Used ory Reco	Dens. Vis. 8.90 4 ROP Av/Mx 24.0 / 30.0 Invent. Invent. ords for this ms:	PV 1 Drilling P WOB RF 8,000	/P Filt. Cal arameters M Torque Fil 90 4	Mud ke pH Solid ow AV:DC A 450 213.9 LTI: Med: Accident Descriptior Oper: 2 c Total Perso	Reports Is Oil Wat AV:DP Pres 195.9 Safety Infor Day 1st n: Cont: 8 \$ 000000000000000000000000000000000000	ss. 800 No rmation ys Since: Aid: Serv: 0 Hours:	Depth 0 Mud Log Othr: 0	Gas:Back Informatic	Mud Lo Max n for this Envi	/ / g Conn Tri s report.	p Pore Pre
Date/Tin 18-Mar-19 Depth 1550- Item No Invento	ne E 22:00 N R -2077 2 Used ory Reco	Dens. Vis. 8.90 4 ROP Av/Mx 24.0 / 30.0 Invent. Invent. ords for this ms: n:	PV 1 Drilling P WOB RF 8,000	/P Filt. Cal arameters M Torque Fil 90 4	Mud ke pH Solid ow AV:DC A 450 213.9 LTI: Med: Accident Descriptior Oper: 2 c Total Perso	Reports Is Oil Wat AV:DP Pres 195.9 Safety Infor Day 1st n: Cont: 8 \$ 000000000000000000000000000000000000	ss. 800 No rmation ys Since: Aid: Serv: 0 Hours:	Depth 0 Mud Log Othr: 0	Gas:Back Informatic	Mud Lo Max n for this Envi	/ / g Conn Tri s report.	p Pore Pre



Daily Drilling Report

GRG

		Vell ID: Fo	ige 70-52		Job ID: O	-	: 26 Town: 2	6S Rnd	· 9W Co	Well Na unty: Beave	
Report N	lo: 7					0000	. 20 10000.2			Report For	
Operator:		University	of Utah Rig	ı.	#10031	Spud Date:	13-Mar-	19 Daily	Cost / Mu	•	
Measured	Donth (f			orking Interest:		•	Original Wellb	-		AFE (\$)	Actual (\$)
				-	9.625 at 704		-	70	NU.		
Vertical De				•		KND Elevation	(11): 5.				
Proposed				xt Casing: 5.							
Hole Made	• •			st BOP Test:	15-Mar-19			Total			-
Average R				xt BOP Test:	30-Mar-19				Cost (\$):		-
Drilling Da				ays (act./plan):		Total Days (act	t./plan):	7/0 D	ays On Lo	ocation:	
Current Op		0.0		ing hole straigh							
Planned O	ps: Co	ntinue drillir	ig 8-3/4" hol	e to total depth.							
Toolpushe	er: Tyle	r Curtis, Kol	lin Mellott	S	upervisors:	Virgil Welch, Mo	nty Keown		Tel No	b.:	
Comments	S:										
					Operatio	ons Summary					
From	То	Elapsed	End MD(ft)	Code			rations Desc	iption			Non-Pro
0:00	6:00	6.00	2,277	3-2-1 T	ime drill 8-3/4	hole from 2,077		-	IS		
6:00	6:30	0.50	2,227		eld Safety me						
6:30	17:00	10.50	2,400		,	4" hole from 2,227	'' to 2 437' wit	n full retur	าร		
17:00	17:30	0.50	2,400			d spool on new su		. ian iotur			
17:30	18:00	0.50	2,437		-						
						0 4.7 deg 105.3F ole from 2,437' to					
18:00	22:00	4.00	2,530								
22:00 22:30	22:30 0:00	0.50 1.50	2,530 2,545		• •	,500' 4.5 deg 113. 530' t0 2,545' w/ 2					
No/Run M	KER DS		0 20 20	20 20 1,5	t Hrs R 645 56.5 2	27.3 4 4	15 8	_	1,000	J.Vel P.Drp 78 48	HHP JIF 13 16
2 2 BA	KER DS(: 2,617	616№ 8.75 Cutter:	0 20 20 Inner/Outer:	20 20 1,5 3/3 D	t Hrs R 45 56.5 2 ull:Maj/Oth:	OP WOB RPM 7.3 4 4 NO/NO We	•		1,000	78 48	1
2 2 BA	KER DS(: 2,617	616№ 8.75 Cutter:	0 20 20 Inner/Outer:	20 20 1,5	t Hrs R 645 56.5 2 ull:Maj/Oth: XO = 464.96	OP WOB RPM 77.3 4 4 NO/NO We	15 8	80 450	1,000	78 48	13 16
2 2 BA DepthOut	KER DS : 2,617 4 - Bl	616№ 8.75 Cutter:	0 20 20 Inner/Outer: C, STAB, DC	20 20 1,5 3/3 D , STAB, 13 DC,	t Hrs R 45 56.5 2 ull:Maj/Oth: XO = 464.96 Mud	OP WOB RPM 7.3 4 4 NO/NO We	5 8 earLoc: A	80 450	1,000 X Gau	78 48	13 16 Pull: FM
2 2 BA DepthOut: BHA - No. Date/Tir	KER DS : 2,617 4 - Bl	616Ν 8.75 Cutter: Γ, STAB, DC Dens. Vis	0 20 20 Inner/Outer: C, STAB, DC	20 20 1,5 3/3 D , STAB, 13 DC,	t Hrs R 45 56.5 2 ull:Maj/Oth: XO = 464.96 Mud	OP WOB RPM 7.3 4 4 NO/NO We Reports	5 8 earLoc: A	80 450 Brgs:	1,000 X Gau	78 48 ge: 0	13 16 Pull: FM
2 2 BA DepthOut: BHA - No.	KER DS : 2,617 4 - Bl	616N 8.75 Cutter: T, STAB, DC Dens. Vis	0 20 20 Inner/Outer: C, STAB, DC	20 20 1,5 3/3 D , STAB, 13 DC, /P Filt. Cal	t Hrs R 45 56.5 2 ull:Maj/Oth: XO = 464.96 Mud	OP WOB RPM 7.3 4 4 NO/NO We Reports	5 8 earLoc: A	80 450 Brgs:	1,000 X Gau	78 48 ge: 0 Gels / /	13 16 Pull: FM
2 2 BA DepthOut: BHA - No. Date/Tir	KER DS(: 2,617 4 - Bl' me l 19:00	616N 8.75 Cutter: T, STAB, DC Dens. Vis	0 20 20 Inner/Outer: C, STAB, DC . PV N 8 Drilling P	20 20 1,5 3/3 D , STAB, 13 DC,	t Hrs R i45 56.5 2 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid	OP WOB RPM 7.3 4 4 NO/NO We Reports S Oil Water S	5 8 earLoc: A	80 450 Brgs:	1,000 X Gau CaCl	78 48 ge: 0 Gels / /	13 16 Pull: FM Temp In/O /
2 2 BA DepthOut: BHA - No. Date/Tin 19-Mar-19 Depth	KER DS(: 2,617 4 - Bl me I 19:00	616 8.75 Cutter: T, STAB, DC Dens. Vis 8.80 3	0 20 20 Inner/Outer: C, STAB, DC . PV N 8 Drilling P WOB RP	20 20 1,5 3/3 D , STAB, 13 DC, /P Filt. Cal arameters M Torque Fil	t Hrs R i45 56.5 2 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid	OP WOB RPM 7.3 4 4 NO/NO We Reports Is Oil Water S AV:DP Press.	Sand LGS	80 450 Brgs: CI Ca Gas:Ba	1,000 X Gau CaCl Mud L Ck Max	78 48 ge: 0 Gels / / -Og Conn Tri	13 16
2 2 BA DepthOut: BHA - No. Date/Tin 19-Mar-19 Depth	KER DS(: 2,617 4 - Bl me I 19:00	616 8.75 Cutter: T, STAB, DC Dens. Vis 8.80 3 ROP Av/Mx	0 20 20 Inner/Outer: C, STAB, DC 8 Drilling P WOB RP 2	20 20 1,5 3/3 D , STAB, 13 DC, /P Filt. Cal arameters M Torque Fl	it Hrs Ri i45 56.5 2 ull:Maj/Oth: 2 XO = 464.96 Mud ce pH Solid Solid ow AV:DC 450 213.9	OP WOB RPM 7.3 4 4 NO/NO We Reports Is Oil Water S AV:DP Press.	Sand LGS Depth No Mud Lo	80 450 Brgs: CI Ca Gas:Ba	1,000 X Gau CaCl Mud L ck Max tion for th	78 48 ge: 0 Gels / / -Og Conn Tri	13 16 Pull: FM Temp In/O / p Pore Pre
2 2 BA DepthOut: BHA - No. Date/Tin 19-Mar-19 Depth	KER DS : 2,617 4 - Bl 19:00 h F -2545	616 8.75 Cutter: Cutter: T, STAB, DC State Dens. Vis 8.80 3 ROP Av/Mx 21.3 / 23.0	0 20 20 Inner/Outer: C, STAB, DC 8 Drilling P WOB RP 2	20 20 1,5 3/3 D , STAB, 13 DC, /P Filt. Cal arameters M Torque Fl	it Hrs Ri i45 56.5 2 ull:Maj/Oth: 2 XO = 464.96 Mud Ke pH Sow AV:DC 450 213.9	OP WOB RPM 7.3 4 4 NO/NO We Reports Is Oil Water S AV:DP Press. 195.9 10000 Safety Informat	Sand LGS Depth No Mud Lo ion	80 450 Brgs: CI Ca Gas:Ba g Informa	1,000 X Gau CaCl Mud L ck Max tion for th	78 48 ge: 0 Gels / / -Og Conn Tri nis report. vironment	13 16 Pull: FM Temp In/C / p Pore Pre
2 2 BA DepthOut: BHA - No. Date/Tin 19-Mar-19 Depth 2077- Item	KER DS : 2,617 4 - Bl' me I 19:00 h F -2545 Used	616 8.75 Cutter: Cutter: T, STAB, DC State Dens. Vis 8.80 3 ROP Av/Mx 21.3 / 23.0 Invent State	0 20 20 Inner/Outer: C, STAB, DC 8 Drilling P WOB RP 2 :ory Item	20 20 1,5 3/3 D , STAB, 13 DC, /P Filt. Calar arameters M Torque File 45 2	it Hrs Ri i45 56.5 2 ull:Maj/Oth: XO = 464.96 Mud Mud ke pH Solid ow AV:DC 450 213.9 LTI: Med:	OP WOB RPM 17.3 4 4 NO/NO We Reports Image: Second secon	Sand LGS Depth No Mud Lo ion nce:	80 450 Brgs: CI Ca Gas:Ba g Informa	1,000 X Gau CaCl Mud L ck Max tion for th	78 48 ge: 0 Gels / / -Og Conn Tri nis report. vironment	13 1 Pull: FM Temp In/C / p Pore Pre
2 2 BA DepthOut: BHA - No. Date/Tin 19-Mar-19 Depth 2077- Item	KER DS : 2,617 4 - Bl' me I 19:00 h F -2545 Used	616 8.75 Cutter: Cutter: T, STAB, DC State Dens. Vis 8.80 3 ROP Av/Mx 21.3 / 23.0 Invent Invent.	0 20 20 Inner/Outer: C, STAB, DC 8 Drilling P WOB RP 2 :ory Item	20 20 1,5 3/3 D , STAB, 13 DC, /P Filt. Calar arameters M Torque File 45 2	it Hrs Ri i45 56.5 2 ull:Maj/Oth: 2 XO = 464.96 Mud KO = H Solid ow AV:DC 450 213.9 LTI: Med: Accident	OP WOB RPN 7.3 4 4 NO/NO We Reports Second Se	Sand LGS Depth No Mud Lo ion nce:	80 450 Brgs: CI Ca Gas:Ba g Informa	1,000 X Gau CaCl Mud L ck Max tion for th	78 48 ge: 0 Gels / / -Og Conn Tri nis report. vironment	13 10 Pull: FM Temp In/C 7 p Pore Pro
2 2 BA DepthOut: BHA - No. Date/Tin 19-Mar-19 Depth 2077- Item	KER DS : 2,617 4 - Bl' me I 19:00 h F -2545 Used	616 8.75 Cutter: Cutter: T, STAB, DC State Dens. Vis 8.80 3 ROP Av/Mx 21.3 / 23.0 Invent Invent.	0 20 20 Inner/Outer: C, STAB, DC 8 Drilling P WOB RP 2 :ory Item	20 20 1,5 3/3 D , STAB, 13 DC, /P Filt. Calar arameters M Torque File 45 2	it Hrs Ri i45 56.5 2 ull:Maj/Oth: 2 XO = 464.96 Mud KO pH Solid S LTI: Med: Accident Description	OP WOB RPM 7.3 4 4 NO/NO We Reports S Oil Water S AV:DP Press. 195.9 10000 Safety Informat Days Si 1st Aid: 1:	Sand LGS Depth No Mud Lo ion nce:	80 450 Brgs: CI Ca Gas:Ba g Informa	1,000 X Gau CaCl Mud L ck Max tion for th	78 48 ge: 0 Gels / / -Og Conn Tri nis report. vironment	13 10 Pull: FM Temp In/C / p Pore Pre
2 2 BA DepthOut: BHA - No. Date/Tin 19-Mar-19 Depth 2077- Item	KER DS : 2,617 4 - Bl' me I 19:00 h F -2545 Used	616 8.75 Cutter: Cutter: T, STAB, DC State Dens. Vis 8.80 3 ROP Av/Mx 21.3 / 23.0 Invent Invent.	0 20 20 Inner/Outer: C, STAB, DC 8 Drilling P WOB RP 2 :ory Item	20 20 1,5 3/3 D , STAB, 13 DC, /P Filt. Calar arameters M Torque File 45 2	it Hrs Ri i45 56.5 2 ull:Maj/Oth: XO = 464.96 Mud Mud ke pH Solid ow AV:DC A 450 213.9 S LTI: Med: Accident Description Oper: 2	OP WOB RPM 7.3 4 4 NO/NO We Reports S Oil Water S AV:DP Press. 195.9 10000 Safety Informat Days Si 1st Aid: n: Cont: 8 Serv:	Sand LGS Depth No Mud Lo ion nce: 0 Othr:	80 450 Brgs: CI Ca Gas:Ba g Informa Cum. Wa	1,000 X Gau CaCl Mud L ck Max tion for th	78 48 ge: 0 Gels / / -Og Conn Tri nis report. vironment	13 16 Pull: FM Temp In/C / p Pore Pre
2 2 BA DepthOut: BHA - No. Date/Tin 19-Mar-19 Depth 2077- Item	KER DS : 2,617 4 - Bl' me I 19:00 h F -2545 Used	616 8.75 Cutter: Cutter: T, STAB, DC State Dens. Vis 8.80 3 ROP Av/Mx 21.3 / 23.0 Invent Invent.	0 20 20 Inner/Outer: C, STAB, DC . PV N 8 Drilling P WOB RP 2 :ory Item	20 20 1,5 3/3 D , STAB, 13 DC, /P Filt. Calar arameters M Torque File 45 2	t Hrs R 45 56.5 2 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid ce pH Solid bow AV:DC A 450 213.9 LTI: Med: Accident Description Oper: 2 Total Perso	OP WOB RPM 7.3 4 4 NO/NO We Reports Is Oil Water S AV:DP Press. 195.9 10000 Safety Informat Days Si 1st Aid: n: Cont: 8 Serv: pnnel: 10 Hour	Sand LGS Depth No Mud Lo ion nce: 0 Othr: rs:	80 450 Brgs: CI Ca Gas:Ba g Informa	1,000 X Gau CaCl Mud L ck Max tion for th	78 48 ge: 0 Gels / / -Og Conn Tri nis report. vironment	13 16 Pull: FM Temp In/C 7 p Pore Pre
2 2 BA DepthOut: BHA - No. Date/Tin 19-Mar-19 Depth 2077- Item	KER DS : 2,617 4 - Bl' me I 19:00 h F -2545 Used	616 8.75 Cutter: Cutter: T, STAB, DC State Dens. Vis 8.80 3 ROP Av/Mx 21.3 / 23.0 Invent Invent.	0 20 20 Inner/Outer: C, STAB, DC . PV N 8 Drilling P WOB RP 2 :ory Item	20 20 1,5 3/3 D , STAB, 13 DC, /P Filt. Calar arameters M Torque File 45 2	t Hrs R 45 56.5 2 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid ce pH Solid bow AV:DC A 450 213.9 LTI: Med: Accident Description Oper: 2 Total Perso	OP WOB RPM 7.3 4 4 NO/NO We Reports S Oil Water S AV:DP Press. 195.9 10000 Safety Informat Days Si 1st Aid: n: Cont: 8 Serv:	Sand LGS Depth No Mud Lo ion nce: 0 Othr: rs:	80 450 Brgs: CI Ca Gas:Ba g Informa Cum. Wa	1,000 X Gau CaCl Mud L ck Max tion for th	78 48 ge: 0 Gels / / -Og Conn Tri nis report. vironment	13 16 Pull: FM Temp In/C 7 p Pore Pre
2 2 BA DepthOut: BHA - No. Date/Tin 19-Mar-19 Depth 2077- Item No Invento	KER DS 2,617 4 - Bl 19:00 h F -2545 Used ory Reco	616 8.75 Cutter: Cutter: T, STAB, DC 9 Dens. Vis 8.80 3 ROP Av/Mx 21.3 / 23.0 Invent 9 pords for this	0 20 20 Inner/Outer: C, STAB, DC . PV N 8 Drilling P WOB RP 2 :ory Item	20 20 1,5 3/3 D , STAB, 13 DC, /P Filt. Calar arameters M Torque File 45 2	t Hrs R 45 56.5 2 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid ce pH Solid bow AV:DC A 450 213.9 LTI: Med: Accident Description Oper: 2 Total Perso	OP WOB RPM 7.3 4 4 NO/NO We Reports Is Oil Water S AV:DP Press. 195.9 10000 Safety Informat Days Si 1st Aid: n: Cont: 8 Serv: pnnel: 10 Hour	Sand LGS Depth No Mud Lo ion nce: 0 Othr: rs:	80 450 Brgs: CI Ca Gas:Ba g Informa Cum. Wa	1,000 X Gau CaCl Mud L ck Max tion for th	78 48 ge: 0 Gels / / -Og Conn Tri nis report. vironment	13 16 Pull: FM Temp In/C / p Pore Pre
2 2 BA DepthOut: BHA - No. Date/Tin 19-Mar-19 Depth 2077- Item No Invento	KER DS KER DS 2,617 4 - Bl 19:00 h F -2545 Used ory Reco	616 8.75 Cutter: Cutter: T, STAB, DC 0 Dens. Vis 8.80 3 ROP Av/Mx 21.3 / 23.0 Invent. 0 pords for this	0 20 20 Inner/Outer: C, STAB, DC . PV N 8 Drilling P WOB RP 2 :ory Item	20 20 1,5 3/3 D , STAB, 13 DC, /P Filt. Calar arameters M Torque File 45 2	t Hrs R 45 56.5 2 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid ce pH Solid bow AV:DC A 450 213.9 LTI: Med: Accident Description Oper: 2 Total Perso	OP WOB RPM 7.3 4 4 NO/NO We Reports Is Oil Water S AV:DP Press. 195.9 10000 Safety Informat Days Si 1st Aid: n: Cont: 8 Serv: pnnel: 10 Hour	Sand LGS Depth No Mud Lo ion nce: 0 Othr: rs:	80 450 Brgs: CI Ca Gas:Ba g Informa Cum. Wa	1,000 X Gau CaCl Mud L ck Max tion for th	78 48 ge: 0 Gels / / -Og Conn Tri nis report. vironment	13 16 Pull: FM Temp In/O / p Pore Pre
2 2 BA DepthOut: BHA - No. Date/Tin 19-Mar-19 Depth 2077- Item No Invento Equipment	KER DS : 2,617 4 - Bl 19:00 h F -2545 Used ory Reco nt Proble Conditio	616/ 8.75 Cutter: Cutter: T, STAB, DC Dens. Vis 8.80 3 ROP Av/Mx 21.3 23.0 Invent. pords for this pords for this ms: n:	0 20 20 Inner/Outer: C, STAB, DC . PV N 8 Drilling P WOB RP 2 :ory Item	20 20 1,5 3/3 D , STAB, 13 DC, /P Filt. Calar arameters M Torque File 45 2	t Hrs R 45 56.5 2 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid ce pH Solid bow AV:DC A 450 213.9 LTI: Med: Accident Description Oper: 2 Total Perso	OP WOB RPM 7.3 4 4 NO/NO We Reports Is Oil Water S AV:DP Press. 195.9 10000 Safety Informat Days Si 1st Aid: n: Cont: 8 Serv: pnnel: 10 Hour	Sand LGS Depth No Mud Lo ion nce: 0 Othr: rs:	80 450 Brgs: CI Ca Gas:Ba g Informa Cum. Wa	1,000 X Gau CaCl Mud L ck Max tion for th	78 48 ge: 0 Gels / / -Og Conn Tri nis report. vironment	13 16 Pull: FM Temp In/O 7 p Pore Pre
2 2 BA DepthOut: BHA - No. Date/Tin 19-Mar-19 2077- 2077- Item No Invento Equipment Location (Transport	KER DSi KER DSi 2,617 1 Me I 19:00 1 h F -2545 1 Used ory Reco nt Proble Conditiot t Status: Conditiot	616/ 8.75 Cutter: Cutter: T, STAB, DC Dens. Vis 8.80 3 ROP Av/Mx 21.3 23.0 Invent. pords for this pords for this ms: n:	0 20 20 Inner/Outer: C, STAB, DC 8 Drilling P WOB RP 2 3 Cory Item 5 report.	20 20 1,5 3/3 D , STAB, 13 DC, /P Filt. Calar arameters M Torque File 45 2	t Hrs R 45 56.5 2 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid ce pH Solid bow AV:DC A 450 213.9 LTI: Med: Accident Description Oper: 2 Total Perso	OP WOB RPM 7.3 4 4 NO/NO We Reports Is Oil Water S AV:DP Press. 195.9 10000 Safety Informat Days Si 1st Aid: n: Cont: 8 Serv: pnnel: 10 Hour	Sand LGS Depth No Mud Lo ion nce: 0 Othr: rs:	80 450 Brgs: CI Ca Gas:Ba g Informa Cum. Wa	1,000 X Gau CaCl Mud L ck Max tion for th	78 48 ge: 0 Gels / / -Og Conn Tri nis report. vironment	13 16 Pull: FM Temp In/O 7 p Pore Pre



Operator:

Report No: 8

Daily Drilling Report Well ID: Forge 78-32

University of Utah Rig:

Job ID: Original

#10031 Spud Date:

GRG

Well Name: 78-32

Report For 20-Mar-19

Sect: 26 Town: 26S Rng: 9W County: Beaver State: UT

13-Mar-19 Daily Cost / Mud (\$):

Measured D Vertical Dep Proposed T	• •	۱.	0040 144									
Proposed T		<i>)</i> .	2643 WC	orking Interest		Wellbore:	0	Wellbore	AFE No.	AF	E (\$)	Actual (\$)
•			2638 La	st Casing:	9.625 at 704	RKB Elevation	on (ft):	5.70				
	D (ft):		3000 Ne	xt Casing: 5	.500 at 3,000							
Hole Made	(ft) / Hrs	: 9	08 / 10.0 La	st BOP Test:	15-Mar-19				Totals:			
Average RC	OP (ft/hr)):	9.8 Ne	xt BOP Test:	30-Mar-19				Well Cos	st (\$):		
Drilling Day	•	,		ays (act./plan)		Total Days (8/0 Days	On Location	n:	8
Current Op				2,700' @ 05:30		ing hole straig	nt					
Planned Op				nd run 5-1/2" ca	asing.							
Toolpusher	: Tyler	Curtis, Kol	lin Mellott	S	Supervisors:	Virgil Welch,	Monty Keov	vn		Tel No.:		
Comments:												
					Operatio	ons Summar	-					
From	То	Elapsed	End MD(ft)	Code			perations					Non-Proc
0:00	7:30	7.50				1" hole from 2,		7' with 2-	4K , 450 (GPM, 1,000 F	'SI 45 R	PM
7:30	8:00	0.50	2,617		-	om @ 2,617' 4	-					
8:00	16:00	8.00				ange, no drag	or hole prob	olems.				
16:00	17:00	1.00			Change bit							
17:00	21:00	4.00				' tri-cone butto					-	
21:00	23:30	2.50	2,643			e from 2,617 to	o 2,643 w/ 8	K WOB 4	50 GPM	1,000 PSI 50	RPM w	full
00.00	0.00	0.50	0.040		eturns	0112 da-						
23:30	0:00	0.50	2,643	3-58 3	Survey @ 2,64	0 4.3 deg						
3 1 HTC	tri-co					00		0.20				
DepthOut: BHA - No. 5 Date/Tim	2,923 5 - BIT ne D	Cutter: , STAB, DO	Inner/Outer: C, STAB, DC	, STAB, 13 DC	Dull:Maj/Oth: , XO = 464.96 Mud		WearLoc: r Sand LC		450 1 rgs: 5 Ca	Gauge: 1 CaCl G	els	130 528 Pull: HR Temp In/Ou
DepthOut: BHA - No. 5	2,923 5 - BIT ne D	Cutter: , STAB, DC	Inner/Outer: C, STAB, DC	2/3 [, STAB, 13 DC	Dull:Maj/Oth: , XO = 464.96 Mud	CT/WT Reports		A B	rgs: 5	Gauge: 1 CaCl G		Pull: HR
DepthOut: BHA - No. 5 Date/Tim	2,923 5 - BIT ne D	Cutter: , STAB, DO	Inner/Outer: C, STAB, DC . PV N	2/3 [, STAB, 13 DC /P Filt. Ca	Dull:Maj/Oth: , XO = 464.96 Mud	CT/WT Reports		A B	rgs: 5	Gauge: 1 CaCl G	els	Pull: HR Temp In/Ou
DepthOut: BHA - No. 5 Date/Tim 20-Mar-19 2	2,923 5 - BIT ne D 22:30	Cutter: , STAB, DC Pens. Vis 9.20 4	Inner/Outer: C, STAB, DC . PV 2 Drilling P	2/3 [, STAB, 13 DC /P Filt. Ca	Dull:Maj/Oth: , XO = 464.96 Mud ke pH Solid	CT/WT Reports s Oil Wate	r Sand LC	A B	rgs: 5 Ca	Gauge: 1 CaCl G Mud Log	els / /	Pull: HR Temp In/Ou /
DepthOut: BHA - No. 5 Date/Tim 20-Mar-19 2 Depth	2,923 5 - BIT ne D 22:30 R	Cutter: , STAB, DC ens. Vis 9.20 4 OP Av/Mx	Drilling P WOB RP	2/3 [, STAB, 13 DC /P Filt. Ca /arameters M Torque F	Dull:Maj/Oth: , XO = 464.96 Mud ke pH Solid	CT/WT Reports s Oil Wate	r Sand LC	A B BS CI	rgs: 5 Ca as:Back	Gauge: 1 CaCl G Mud Log Max Con	els / / in Trip	Pull: HR Temp In/Ou
DepthOut: BHA - No. 5 Date/Tim 20-Mar-19 2 Depth	2,923 5 - BIT ne D 22:30 R	Cutter: , STAB, DC Dens. Vis 9.20 4 OP Av/Mx 0.0 / 12.0	Inner/Outer: C, STAB, DC . PV .2 Drilling P WOB RP 8	2/3 [, STAB, 13 DC /P Filt. Ca /arameters M Torque F	Dull:Maj/Oth: , XO = 464.96 Mud ke pH Solid	CT/WT Reports S Oil Wate AV:DP Press 144.1 100	r Sand LC	A B BS CI	rgs: 5 Ca as:Back	Gauge: 1 CaCl G Mud Log Max Con n for this rep	els / / n Trip port.	Pull: HR Temp In/Ou /
DepthOut: BHA - No. 5 Date/Tim 20-Mar-19 2 Depth 2617-2	2,923 5 - BIT 22:30 R 2643 1	Cutter: , STAB, DC eens. Vis 9.20 4 OP Av/Mx 0.0 / 12.0	Inner/Outer: C, STAB, DC . PV N 22 Drilling P WOB RP 8 8	2/3 [, STAB, 13 DC /P Filt. Ca Parameters M Torque F 45	Dull:Maj/Oth: , XO = 464.96 Mud ke pH Solid low AV:DC / 450 213.9	CT/WT Reports S Oil Wate AV:DP Press 144.1 100 Safety Inform	r Sand LC De Do No Mu	A B BS CI pth G ud Log Ir	rgs: 5 Ca as:Back	Gauge: 1 CaCI G Mud Log Max Con n for this rep Environ	els / / n Trip port.	Pull: HR Temp In/Ou / D Pore Pres
DepthOut: BHA - No. 5 Date/Tim 20-Mar-19 2 Depth 2617-2 Item	2,923 5 - BIT ne D 222:30 R 22643 1 Used	Cutter: , STAB, DC eens. Vis 9.20 4 OP Av/Mx 0.0 / 12.0 Invent	Inner/Outer: C, STAB, DC . PV N 22 Drilling P WOB RP 8 8 tory Item	2/3 [, STAB, 13 DC /P Filt. Ca /arameters M Torque F	Dull:Maj/Oth: , XO = 464.96 Mud ke pH Solid low AV:DC / 450 213.9	CT/WT Reports S Oil Wate AV:DP Press 144.1 100 Safety Inform Days	r Sand LC . De 00 No Mo nation : Since:	A B BS CI pth G ud Log Ir	rgs: 5 Ca as:Back	Gauge: 1 CaCl G Mud Log Max Con n for this rep Environ Hauled:	els / / n Trip port. ment	Pull: HR Temp In/Ou /
DepthOut: BHA - No. 5 Date/Tim 20-Mar-19 2 Depth 2617-2	2,923 5 - BIT ne D 222:30 R 22643 1 Used	Cutter: , STAB, DC eens. Vis 9.20 4 OP Av/Mx 0.0 / 12.0 Invent	Inner/Outer: C, STAB, DC . PV N 22 Drilling P WOB RP 8 8 tory Item	2/3 [, STAB, 13 DC /P Filt. Ca Parameters M Torque F 45	Dull:Maj/Oth: , XO = 464.96 Mud ke pH Solid low AV:DC / 450 213.9	CT/WT Reports S Oil Wate AV:DP Press 144.1 100 Safety Inform	r Sand LC . De 00 No Mo nation : Since:	A B BS CI pth G ud Log Ir	rgs: 5 Ca as:Back Iformatio	Gauge: 1 CaCI G Mud Log Max Com n for this rep Environ Hauled: Surve	els / / m Trip port. ment	Pull: HR Temp In/Ou / D Pore Pres 0.000 acre-
DepthOut: BHA - No. 5 Date/Tim 20-Mar-19 2 Depth 2617-2 Item	2,923 5 - BIT ne D 222:30 R 22643 1 Used	Cutter: , STAB, DC eens. Vis 9.20 4 OP Av/Mx 0.0 / 12.0 Invent	Inner/Outer: C, STAB, DC . PV N 22 Drilling P WOB RP 8 8 tory Item	2/3 [, STAB, 13 DC /P Filt. Ca Parameters M Torque F 45	Dull:Maj/Oth: , XO = 464.96 Mud ke pH Solid low AV:DC / 450 213.9	CT/WT Reports Soli Wate AV:DP Press 144.1 100 Safety Inform Days 1st A	r Sand LC . De 00 No Mo nation : Since:	A B BS CI pth G ud Log Ir	rgs: 5 Ca as:Back Iformatio	Gauge: 1 CaCl G Mud Log Max Com n for this rep Environ Hauled: Surve c. Azim. TV	els / / port. ment eys /D	Pull: HR Temp In/Ou / o Pore Pres 0.000 acre-
DepthOut: BHA - No. 5 Date/Tim 20-Mar-19 2 Depth 2617-2 Item	2,923 5 - BIT ne D 222:30 R 22643 1 Used	Cutter: , STAB, DC eens. Vis 9.20 4 OP Av/Mx 0.0 / 12.0 Invent	Inner/Outer: C, STAB, DC . PV N 22 Drilling P WOB RP 8 8 tory Item	2/3 [, STAB, 13 DC /P Filt. Ca Parameters M Torque F 45	Dull:Maj/Oth: , XO = 464.96 Mud ke pH Solid low AV:DC / 450 213.9	CT/WT Reports Soli Wate AV:DP Press 144.1 100 Safety Inform Days 1st A	r Sand LC . De 00 No Mo nation : Since:	A B BS CI pth G ud Log Ir	rgs: 5 Ca as:Back Iformatio	Gauge: 1 CaCl G Mud Log Max Com n for this rep Environ Hauled: Surve c. Azim. TV	els / / m Trip port. ment	Pull: HR Temp In/Ou / D Pore Pres 0.000 acre-
DepthOut: BHA - No. 5 Date/Tim 20-Mar-19 2 Depth 2617-2 Item	2,923 5 - BIT ne D 222:30 R 22643 1 Used	Cutter: , STAB, DC eens. Vis 9.20 4 OP Av/Mx 0.0 / 12.0 Invent	Inner/Outer: C, STAB, DC . PV N 22 Drilling P WOB RP 8 8 tory Item	2/3 [, STAB, 13 DC /P Filt. Ca Parameters M Torque F 45	Dull:Maj/Oth: , XO = 464.96 Mud ke pH Solid low AV:DC / 450 213.9	CT/WT Reports Soli Wate AV:DP Press 144.1 100 Safety Inform Days 1st A	r Sand LC . De 00 No Mo nation : Since:	A B BS CI pth G ud Log Ir	rgs: 5 Ca as:Back Iformatio	Gauge: 1 CaCl G Mud Log Max Com n for this rep Environ Hauled: Surve c. Azim. TV	els / / port. ment eys /D	Pull: HR Temp In/Ou / o Pore Pres 0.000 acre-
DepthOut: BHA - No. 5 Date/Tim 20-Mar-19 2 Depth 2617-2 Item	2,923 5 - BIT ne D 222:30 R 22643 1 Used	Cutter: , STAB, DC eens. Vis 9.20 4 OP Av/Mx 0.0 / 12.0 Invent	Inner/Outer: C, STAB, DC . PV N 22 Drilling P WOB RP 8 8 tory Item	2/3 [, STAB, 13 DC /P Filt. Ca Parameters M Torque F 45	Dull:Maj/Oth: , XO = 464.96 Mud ke pH Solid low AV:DC / 450 213.9 LTI: Med: Accident Description	CT/WT Reports S Oil Wate AV:DP Press 144.1 100 Safety Inform Days 1st A n:	r Sand LC De DO No Mu nation Since:	A B BS CI pth G ud Log Ir	rgs: 5 Ca as:Back Iformatio	Gauge: 1 CaCl G Mud Log Max Com n for this rep Environ Hauled: Surve c. Azim. TV	els / / port. ment eys /D	Pull: HR Temp In/Ou / o Pore Pres 0.000 acre-
DepthOut: BHA - No. 5 Date/Tim 20-Mar-19 2 Depth 2617-2 Item	2,923 5 - BIT ne D 222:30 2643 1 Used ry Reco	Cutter: , STAB, DC ens. Vis 9.20 4 OP Av/Mx 0.0 / 12.0 Invent Invent. rds for this	Inner/Outer: C, STAB, DC . PV N 22 Drilling P WOB RP 8 8 tory Item	2/3 [, STAB, 13 DC /P Filt. Ca Parameters M Torque F 45	Dull:Maj/Oth: , XO = 464.96 Mud ke pH Solid low AV:DC / 450 213.9 LTI: Med: Accident Description	CT/WT Reports Soli Wate AV:DP Press 144.1 100 Safety Inform Days 1st A	r Sand LC De DO No Mu nation Since:	A B BS CI pth G ud Log Ir	rgs: 5 Ca as:Back Iformatio	Gauge: 1 CaCl G Mud Log Max Com n for this rep Environ Hauled: Surve c. Azim. TV	els / / port. ment eys /D	Pull: HR Temp In/Ou / o Pore Pres 0.000 acre-
DepthOut: BHA - No. 5 Date/Tim 20-Mar-19 2 Depth 2617-2 Item No Invento	2,923 5 BIT 10 D 22:30 R 2643 1 Used ry Reco	Cutter: , STAB, DC Pens. Vis 9.20 4 OP Av/Mx 0.0 / 12.0 Invent. Invent. rds for this	Inner/Outer: C, STAB, DC . PV N 22 Drilling P WOB RP 8 8 tory Item	2/3 [, STAB, 13 DC /P Filt. Ca Parameters M Torque F 45	Dull:Maj/Oth: , XO = 464.96 Mud ke pH Solid low AV:DC / 450 213.9 LTI: Med: Accident Description	CT/WT Reports S Oil Wate AV:DP Press 144.1 100 Safety Inform Days 1st A n:	r Sand LC De DO No Mu nation Since:	A B BS CI pth G ud Log Ir	rgs: 5 Ca as:Back Iformatio	Gauge: 1 CaCl G Mud Log Max Com n for this rep Environ Hauled: Surve c. Azim. TV	els / / port. ment eys /D	Pull: HR Temp In/Ou / o Pore Pres 0.000 acre-
DepthOut: BHA - No. 5 Date/Tim 20-Mar-19 2 Depth 2617-2 Item No Invento	2,923 5 BIT 10 D 22:30 R 2643 1 Used ry Reco t Probler conditior	Cutter: , STAB, DC Pens. Vis 9.20 4 OP Av/Mx 0.0 / 12.0 Invent. Invent. rds for this	Inner/Outer: C, STAB, DC . PV N 22 Drilling P WOB RP 8 8 tory Item	2/3 [, STAB, 13 DC /P Filt. Ca Parameters M Torque F 45	Dull:Maj/Oth: , XO = 464.96 Mud ke pH Solid low AV:DC / 450 213.9 LTI: Med: Accident Description	CT/WT Reports S Oil Wate AV:DP Press 144.1 100 Safety Inform Days 1st A n:	r Sand LC De DO No Mu nation Since:	A B BS CI pth G ud Log Ir	rgs: 5 Ca as:Back Iformatio	Gauge: 1 CaCl G Mud Log Max Com n for this rep Environ Hauled: Surve c. Azim. TV	els / / port. ment eys /D	Pull: HR Temp In/Ou / o Pore Pres 0.000 acre-
DepthOut: BHA - No. 5 Date/Tim 20-Mar-19 2 Depth 2617-2 Item No Invento	2,923 5 BIT 10 D 22:30 R 2643 1 Used ry Reco t Probler conditior Status:	Cutter: , STAB, DC Vens. Vis 9.20 4 OP Av/Mx 0.0 / 12.0 Invent. Invent. rds for this ms: 1:	Inner/Outer: C, STAB, DC PV 2 Drilling P WOB RP 8 tory Item s report.	2/3 [, STAB, 13 DC /P Filt. Ca Parameters M Torque F 45	Dull:Maj/Oth: , XO = 464.96 Mud ke pH Solid low AV:DC / 450 213.9 LTI: Med: Accident Description	CT/WT Reports S Oil Wate AV:DP Press 144.1 100 Safety Inform Days 1st A n:	r Sand LC De DO No Mu nation Since:	A B BS CI pth G ud Log Ir	rgs: 5 Ca as:Back Iformatio	Gauge: 1 CaCl G Mud Log Max Com n for this rep Environ Hauled: Surve c. Azim. TV	els / / port. ment eys /D	Pull: HR Temp In/Ou / o Pore Pres 0.000 acre-



Report No: 9

Daily Drilling Report Well ID: Forge 78-32

Job ID: Original

GRG

Well Name: 78-32

Report For 21-Mar-19

Sect: 26 Town: 26S Rng: 9W County: Beaver State: UT

Onorctor						-						
Operator:			of Utah Rig		#10031	Spud Date:		ar-19 Daily C	•	.,		
Measured):		orking Intere		Wellbore:		lbore AFE N	0.	AFE (\$)	Actual	(\$)
Vertical De				st Casing:	9.625 at 704	RKB Elevati	ion (ft):	5.70				
Proposed	TD (ft):		3000 Ne	xt Casing:	5.500 at 3,000							
Hole Made	· /		/ 23.25 La	st BOP Test	: 15-Mar-19			Totals				
Average R	OP (ft/hr)):	10.8 Ne	xt BOP Test	: 30-Mar-19			Well C	ost (\$):			
Drilling Da	ys (act./p	olan):	9/0 Flat D	ays (act./pla	n): 0/0	Total Days	(act./plan):	9/0 Da	ys On Locat	tion:		9
Current Op	os: Rep	pairing mud	l pump, Drille	ed8 3/4"to 29	23' at 04:30 hrs.							
Planned O	ps: Dril	l 8 3/4" hole	e with bit nur	nber 3 to 30	hrs total drilling	hours, pull out	t of hole, change	e bits, Drill to	TD with new	bit.		
Toolpushe	r: Tyler	Curtis, Kol	lin Mellott		Supervisors:	Virgil Welch,	Monty Keown		Tel No.:			
Comments	:											
					Operatio	ons Summa	ry					
From	То	Elapsed	End MD(ft)	Code		(Operations Des	scription			Non-F	Prod
0:00	13:00	13.00	2,793	3-2-1	Drilling 8-3/4" I of granite @ 2		WOB, 60 RPM,	450 GPM w/	Full returns.	. Estimateo	top	
13:00	13:30	0.50	2,793	3-58	Survey @ 276	3, 4 deg						
13:30	22:45	9.25	2,884	3-2-1	Drilling 8 3/4" I	nole with 8-15	K WOB, 60-50 I	RPM, 450 GF	PM, 1000 PS	I, full retur	ns.	
22:45	23:00	0.25	2,884	3-58	Survey@ 2880)', 4.2 deg						
23:00	0:00	1.00	2,894	3-2-1	Drilling 8 3/4" I	nole with 8-15	K WOB, 60 RPI	M, 450 GPM1	000 PSI			
					DHOUA	1.6						
No/Due M	alta Ma	dal Diam	lata d	4		Information			Drees 11/			
No/Run M		odel Diam			Dist Hrs R	OP WOB	RPM Torq M	udWt Flow	1	el P.Drp		JIF
No/Run M 3 1 HT DepthOut:	C tri-co	one 8.75		16	Dist Hrs R	OP WOB 2.7 20,000		9.20 450	Press J.Ve 1,000 24 Gauge:	5 494		525
3 1 HT	C tri-co : 2,923	one 8.75 Cutter:	0 16 16 Inner/Outer	16 2/3	Dist Hrs R 323 25.5 1 Dull:Maj/Oth: Dull:Maj/Oth: Dull:Maj/Oth:	OP WOB 2.7 20,000 CT/WT	RPM Torq M 55	9.20 450	1,000 24	5 494	130	525
3 1 HT DepthOut BHA - No.	C tri-co : 2,923 5 - BIT	one 8.75 Cutter:	0 16 16 Inner/Outer C, STAB, DC	16 : 2/3 , STAB, 13 D	Dist Hrs R 323 25.5 1 Dull:Maj/Oth: DC, XO = 464.96 Mud	OP WOB 2.7 20,000 CT/WT 8 Reports 8	RPM Torq M 55 WearLoc: A	9.20 450 Brgs: 5	1,000 24 Gauge:	1	130 Pull: HF	525 २
3 1 HT DepthOut BHA - No.	C tri-ca : 2,923 5 - BIT me D	cone 8.75 Cutter: , STAB, DO Dens. Vis	0 16 16 Inner/Outer C, STAB, DC	16 : 2/3 , STAB, 13 D	Dist Hrs R 323 25.5 1 Dull:Maj/Oth: Dull:Maj/Oth: Dull:Maj/Oth:	OP WOB 2.7 20,000 CT/WT Reports	RPM Torq M 55 WearLoc: A	9.20 450	1,000 24	494 1 Gels	130	525 २
3 1 HT DepthOut BHA - No.	C tri-ca : 2,923 5 - BIT me D	cutter: Cutter: , STAB, DC	0 16 16 Inner/Outer C, STAB, DC	16 : 2/3 , STAB, 13 D	Dist Hrs R 323 25.5 1 Dull:Maj/Oth: DC, XO = 464.96 Mud	OP WOB 2.7 20,000 CT/WT Reports	RPM Torq M 55 WearLoc: A	9.20 450 Brgs: 5	1,000 24 Gauge:	1	130 Pull: HF	525 २
3 1 HT DepthOut BHA - No.	C tri-ca : 2,923 5 - BIT me D	cone 8.75 Cutter: , STAB, DO Dens. Vis	0 16 16 Inner/Outer C, STAB, DC . PV	16 : 2/3 , STAB, 13 D /P Filt. (Dist Hrs R 323 25.5 1 Dull:Maj/Oth: DC, XO = 464.96 Mud Cake pH Solic	OP WOB 2.7 20,000 CT/WT Reports	RPM Torq M 55 WearLoc: A	9.20 450 Brgs: 5	1,000 24 Gauge: CaCl	1 Gels / /	130 Pull: HF	525 २
3 1 HT DepthOut BHA - No. Date/Tin 21-Mar-19	C tri-ca : 2,923 5 - BIT me D 22:00	one 8.75 Cutter: , STAB, DO Dens. Vis 9.20 4	0 16 16 Inner/Outer C, STAB, DC . PV 0 Drilling F	16 : 2/3 , STAB, 13 D /P Filt. (Parameters	Dist Hrs R 323 25.5 1 Dull:Maj/Oth: DC, XO = 464.96 Mud Cake pH Solic	OP WOB 2.7 20,000 CT/WT B OI Wate	RPM Torq M 55 WearLoc: A er Sand LGS	9.20 450 Brgs: 5 Cl Ca	1,000 24 Gauge: CaCl Mud Log	1 1 Gels / /	130 Pull: HF Temp In /	525 २
3 1 HT DepthOut BHA - No. Date/Tin 21-Mar-19	C tri-co : 2,923 5 - BIT me D 22:00	0000 8.75 Cutter: Cut	0 16 16 Inner/Outer C, STAB, DC . PV 0 Drilling F WOB RF	16 : 2/3 , STAB, 13 D YP Filt. (Parameters PM Torque	Dist Hrs R 323 25.5 1 Dull:Maj/Oth: Dull:Maj/Oth: 0C, XO = 464.96 Mud Cake pH Solid Flow AV:DC A	OP WOB 2.7 20,000 CT/WT Reports Is Oil Wate AV:DP Pres	RPM Torq M 55 WearLoc: A er Sand LGS s. Depth	9.20 450 Brgs: 5 CI Ca Gas:Bac	1,000 24 Gauge: CaCl Mud Log < Max C	65 494 1 6els / / 5onn Tri	130 Pull: HF Temp In /	525 २ //Out
3 1 HT DepthOut: BHA - No. Date/Tin 21-Mar-19 Depth	C tri-co : 2,923 5 - BIT me D 22:00	one 8.75 Cutter: , STAB, DO Dens. Vis 9.20 4	0 16 16 Inner/Outer C, STAB, DC . PV Drilling F WOB RF	16 : 2/3 , STAB, 13 D /P Filt. (Parameters	Dist Hrs R 323 25.5 1 Dull:Maj/Oth: DC, XO = 464.96 Mud Cake pH Solic	OP WOB 2.7 20,000 CT/WT Reports Is Oil Wate AV:DP Pres	RPM Torq M 55 WearLoc: A er Sand LGS s. Depth	9.20 450 Brgs: 5 Cl Ca	1,000 24 Gauge: CaCl Mud Log < Max C	65 494 1 6els / / 5onn Tri	130 Pull: HF Temp In /	525 २
3 1 HT DepthOut BHA - No. Date/Tin 21-Mar-19	C tri-co : 2,923 5 - BIT me D 22:00	one 8.75 Cutter: , STAB, DO 9.20 4 OP Av/Mx 0.0 / 12.0	0 16 16 Inner/Outer C, STAB, DC . PV 00 Drilling F WOB RF 20, 000	16 : 2/3 , STAB, 13 D YP Filt. (Parameters PM Torque	Dist Hrs R 323 25.5 1 Dull:Maj/Oth: Maj/Oth: 0C, XO = 464.96 Mud Cake PH Solic Flow AV:DC 450 213.9	OP WOB 2.7 20,000 CT/WT Reports Is Oil AV:DP Press 144.1 10	RPM Torq M 55 WearLoc: A er Sand LGS s. Depth 000 No Mud I	9.20 450 Brgs: 5 CI Ca Gas:Bac	1,000 24 Gauge: CaCl Mud Log Max C ion for this	6els / / Conn Trij report.	130 Pull: HF Temp In /	525 २
3 1 HT DepthOut BHA - No. Date/Tin 21-Mar-19	C tri-ca : 2,923 5 - BIT me D 22:00 N R -2894 1	one 8.75 Cutter: , STAB, DO 9.20 4 OP Av/Mx 0.0 / 12.0	0 16 16 Inner/Outer C, STAB, DC . PV N 00 Drilling F WOB RF 20, 000	16 : 2/3 , STAB, 13 D YP Filt. (Parameters PM Torque	Dist Hrs R 323 25.5 1 Dull:Maj/Oth: DC, XO = 464.96 Mud Cake pH Solic Flow AV:DC A 450 213.9	OP WOB 2.7 20,000 CT/WT Reports Is Oil Wate AV:DP Press 144.1 10 Safety Inform	RPM Torq M 55 WearLoc: A er Sand LGS s. Depth 00 No Mud I mation	9.20 450 Brgs: 5 CI Ca Gas:Bac	1,000 24 Gauge: CaCl Mud Log Max C ion for this Envir	65 494 1 6els / / 5onn Tri	130 Pull: HF Temp In /	525 R //Out
3 1 HT DepthOut BHA - No. Date/Tin 21-Mar-19 Depth 2643	C tri-ca : 2,923 5 - BIT me D 22:00 n R -2894 1 Used	one 8.75 Cutter: , STAB, DO 9.20 4 OP Av/Mx 0.0 12.0 Invent	0 16 16 Inner/Outer C, STAB, DC . PV ` .0 Drilling F WOB RF 20, 000	16 2/3 , STAB, 13 D /P Filt. (Parameters PM Torque 50	Dist Hrs R 323 25.5 1 Dull:Maj/Oth: DC, XO = 464.96 Mud Cake pH Solic Flow AV:DC A 450 213.9	OP WOB 2.7 20,000 CT/WT Reports Is Oil Wate AV:DP Press 144.1 10 Safety Inform	RPM Torq M 55	9.20 450 Brgs: 5 CI Ca Gas:Bacl og Informati	1,000 24 Gauge: CaCl Mud Log Max C ion for this Envir er Hauled:	6els / / Conn Trij report.	130 Pull: Hf Temp In / p Pore F	525 R //Ou
3 1 HT DepthOut BHA - No. Date/Tin 21-Mar-19 Depth 2643	C tri-ca : 2,923 5 - BIT me D 22:00 n R -2894 1 Used	one 8.75 Cutter: , STAB, DO 9.20 4 OP Av/Mx 0.0 / 12.0	0 16 16 Inner/Outer C, STAB, DC . PV ` .0 Drilling F WOB RF 20, 000	16 2/3 , STAB, 13 D /P Filt. (Parameters PM Torque 50	Dist Hrs R 323 25.5 1 Dull:Maj/Oth: Dull:Maj/Oth: DC, XO = 464.96 Mud Cake pH Solid Flow AV:DC 450 450 213.9 \$ nt. LTI: \$	OP WOB 2.7 20,000 CT/WT Reports Is Oil Wate AV:DP Pres 144.1 10 Safety Inform Day:	RPM Torq M 55	9.20 450 Brgs: 5 CI Ca Gas:Bacl og Informati	1,000 24 Gauge: CaCl Mud Log Mud Log Max C ion for this Envir er Hauled: Sul Inc. Azim.	Gels // Conn Tri report.	130 Pull: HF Temp In / p Pore F 0.000 a NS E	525 R //Ou
3 1 HT DepthOut BHA - No. Date/Tin 21-Mar-19 Depth 2643	C tri-ca : 2,923 5 - BIT me D 22:00 n R -2894 1 Used	one 8.75 Cutter: , STAB, DO 9.20 4 OP Av/Mx 0.0 12.0 Invent	0 16 16 Inner/Outer C, STAB, DC . PV ` .0 Drilling F WOB RF 20, 000	16 2/3 , STAB, 13 D /P Filt. (Parameters PM Torque 50	Dist Hrs R 323 25.5 1 Dull:Maj/Oth:	OP WOB 2.7 20,000 CT/WT Reports Is Oil Wate AV:DP Pres 144.1 10 Safety Inform Day: 1st / 1st /	RPM Torq M 55	9.20 450 Brgs: 5 CI Ca Gas:Bacl og Informati	1,000 24 Gauge: CaCl Mud Log Max Co ion for this Envir er Hauled: Sur Inc. Azim. 4 0	5 494 1 1 Gels / / / J	130 Pull: HF Temp In / p Pore F 0.000 a NS E 150	525 R //Ou Pres acre-f EW 0
3 1 HT DepthOut BHA - No. Date/Tin 21-Mar-19 Depth 2643	C tri-ca : 2,923 5 - BIT me D 22:00 n R -2894 1 Used	one 8.75 Cutter: , STAB, DO 9.20 4 OP Av/Mx 0.0 12.0 Invent	0 16 16 Inner/Outer C, STAB, DC . PV ` .0 Drilling F WOB RF 20, 000	16 2/3 , STAB, 13 D /P Filt. (Parameters PM Torque 50	Dist Hrs R 323 25.5 1 Dull:Maj/Oth: Maj/Oth: 0C, XO = 464.96 Mud Cake pH Solid Flow AV:DC 450 450 213.9 Solid nt. LTI: Med: Accident Accident	OP WOB 2.7 20,000 CT/WT Reports Is Oil Wate AV:DP Pres 144.1 10 Safety Inform Day: 1st / 1st /	RPM Torq M 55	9.20 450 Brgs: 5 CI Ca Gas:Bacl Log Information Cum. Wate MD 2763 2763	1,000 24 Gauge: CaCl Mud Log Max Co ion for this Envir er Hauled: Sur Inc. Azim. 4 0	Gels // Conn Tri report.	130 Pull: HF Temp In / p Pore F 0.000 a NS E	525 R //Out Pres. acre-fi EW 0
3 1 HT DepthOut BHA - No. Date/Tin 21-Mar-19 Depth 2643	C tri-ca : 2,923 5 - BIT me D 22:00 n R -2894 1 Used	one 8.75 Cutter: , STAB, DO 9.20 4 OP Av/Mx 0.0 12.0 Invent	0 16 16 Inner/Outer C, STAB, DC . PV ` .0 Drilling F WOB RF 20, 000	16 2/3 , STAB, 13 D /P Filt. (Parameters PM Torque 50	Dist Hrs R 323 25.5 1 Dull:Maj/Oth:	OP WOB 2.7 20,000 CT/WT Reports Is Oil AV:DP Pres 144.1 10 Safety Inform Day: 1st / 1st / n: Cont: 8	RPM Torq M 55	9.20 450 Brgs: 5 CI Ca Gas:Bacl Log Information Cum. Wate MD 2763 2763	1,000 24 Gauge: CaCl Mud Log Max Co ion for this Envir er Hauled: Sur Inc. Azim. 4 0	5 494 1 1 Gels / / / J	130 Pull: HF Temp In / p Pore F 0.000 a NS E 150	525 R //Out Pres. acre-fi EW 0
3 1 HT DepthOut BHA - No. Date/Tin 21-Mar-19 Depth 2643	C tri-ca : 2,923 5 - BIT me D 22:00 n R -2894 1 Used	one 8.75 Cutter: , STAB, DO 9.20 4 OP Av/Mx 0.0 12.0 Invent	0 16 16 Inner/Outer C, STAB, DC . PV ` .0 Drilling F WOB RF 20, 000	16 2/3 , STAB, 13 D /P Filt. (Parameters PM Torque 50	Dist Hrs R 323 25.5 1 Dull:Maj/Oth: DC, XO = 464.96 Mud Cake pH Solic Flow AV:DC A 450 213.9 Med: Accident Description Oper: 2 Total Perso	OP WOB 2.7 20,000 CT/WT Reports Is Oil Wate AV:DP Press 144.1 10 Safety Inform Days 1st / 1st / n: Cont: 8 Cont: 8 S	RPM Torq M 55	9.20 450 Brgs: 5 CI Ca Gas:Bacl Log Informati 2763 2880	1,000 24 Gauge: CaCl Mud Log Max Co ion for this Envir er Hauled: Sur Inc. Azim. 4 0	5 494 1 1 Gels / / / J	130 Pull: HF Temp In / p Pore F 0.000 a NS E 150	525 R //Out Pres. acre-fi EW 0
3 1 HT DepthOut BHA - No. Date/Tin 21-Mar-19 Depth 2643 Item	C tri-ca : 2,923 5 - BIT me D 22:00 n R -2894 1 Used ory Reco	one 8.75 Cutter: Cutter: STAB, DC Dens. Vis 9.20 4 OP Av/Mx 0.0 / 12.0 Invent Invent. rds for this	0 16 16 Inner/Outer C, STAB, DC . PV ` .0 Drilling F WOB RF 20, 000	16 2/3 , STAB, 13 D /P Filt. (Parameters PM Torque 50	Dist Hrs R 323 25.5 1 Dull:Maj/Oth: DC, XO = 464.96 Mud Cake pH Solic Flow AV:DC A 450 213.9 Med: Accident Description Oper: 2 Total Perso	OP WOB 2.7 20,000 CT/WT Reports Is Oil AV:DP Pres 144.1 10 Safety Inform Day: 1st / 1st / n: Cont: 8	RPM Torq M 55	9.20 450 Brgs: 5 CI Ca Gas:Bacl Log Informati 2763 2880	1,000 24 Gauge: CaCl Mud Log Max Co ion for this Envir er Hauled: Sur Inc. Azim. 4 0	5 494 1 1 Gels / / / J	130 Pull: HF Temp In / p Pore F 0.000 a NS E 150	525 R //Out
3 1 HT DepthOut BHA - No. Date/Tin 21-Mar-19 Depth 2643 Item No Invente	C tri-co : 2,923 5 - BIT me D 22:00 n R -2894 1 Used ory Reco	one 8.75 Cutter: , STAB, DO 9.20 4 OP Av/Mx 0.0 / 12.0 Invent. rds for this	0 16 16 Inner/Outer C, STAB, DC . PV ` .0 Drilling F WOB RF 20, 000	16 2/3 , STAB, 13 D /P Filt. (Parameters PM Torque 50	Dist Hrs R 323 25.5 1 Dull:Maj/Oth: DC, XO = 464.96 Mud Cake pH Solic Flow AV:DC A 450 213.9 Med: Accident Description Oper: 2 Total Perso	OP WOB 2.7 20,000 CT/WT Reports Is Oil Wate AV:DP Press 144.1 10 Safety Inform Days 1st / 1st / n: Cont: 8 Cont: 8 S	RPM Torq M 55	9.20 450 Brgs: 5 CI Ca Gas:Bacl Log Informati 2763 2880	1,000 24 Gauge: CaCl Mud Log Max Co ion for this Envir er Hauled: Sur Inc. Azim. 4 0	5 494 1 1 Gels / / / J	130 Pull: HF Temp In / p Pore F 0.000 a NS E 150	525 R //Out Pres. acre-fi EW 0
3 1 HT DepthOut BHA - No. 21-Mar-19 2643 0 1tem No Invento Equipment	C tri-co : 2,923 5 - BIT me D 22:00 N R -2894 1 Used ory Reco	one 8.75 Cutter: , STAB, DO 9.20 4 OP Av/Mx 0.0 / 12.0 Invent. rds for this	0 16 16 Inner/Outer C, STAB, DC . PV ` .0 Drilling F WOB RF 20, 000	16 2/3 , STAB, 13 D /P Filt. (Parameters PM Torque 50	Dist Hrs R 323 25.5 1 Dull:Maj/Oth: DC, XO = 464.96 Mud Cake pH Solic Flow AV:DC A 450 213.9 Med: Accident Description Oper: 2 Total Perso	OP WOB 2.7 20,000 CT/WT Reports Is Oil Wate AV:DP Press 144.1 10 Safety Inform Days 1st / 1st / n: Cont: 8 Cont: 8 S	RPM Torq M 55	9.20 450 Brgs: 5 CI Ca Gas:Bacl Log Informati 2763 2880	1,000 24 Gauge: CaCl Mud Log Max Co ion for this Envir er Hauled: Sur Inc. Azim. 4 0	5 494 1 1 Gels / / / J	130 Pull: HF Temp In / p Pore F 0.000 a NS E 150	525 R //Out
3 1 HT DepthOut BHA - No. Date/Tin 21-Mar-19 2643 2643 No Invento No Invento	C tri-co 2,923 5 - BIT me D 22:00 N R -2894 1 Used ory Reco t Problet Condition Status:	one 8.75 Cutter: , STAB, DO 9.20 4 OP Av/Mx 0.0 / 12.0 Invent. rds for this	0 16 16 Inner/Outer C, STAB, DC . PV N 00 Drilling F WOB RF 20, 000 tory Item s report.	16 : 2/3 , STAB, 13 D /P Filt. (/Parameters Parameters PM Torque 50 Used Inve	Dist Hrs R 323 25.5 1 Dull:Maj/Oth: DC, XO = 464.96 Mud Cake pH Solic Flow AV:DC A 450 213.9 Med: Accident Description Oper: 2 Total Perso	OP WOB 2.7 20,000 CT/WT Reports Is Oil Wate AV:DP Press 144.1 10 Safety Inform Days 1st / 1st / n: Cont: 8 Cont: 8 S	RPM Torq M 55	9.20 450 Brgs: 5 CI Ca Gas:Bacl Log Informati 2763 2880	1,000 24 Gauge: CaCl Mud Log Max Co ion for this Envir er Hauled: Sur Inc. Azim. 4 0	5 494 1 1 Gels / / / J	130 Pull: HF Temp In / p Pore F 0.000 a NS E 150	525 R //Out



Job ID: Original

GRG

Well Name: 78-32

4 1 HTC TRI conv 8.750 20 20 43 4.5 9.6 20,000 60 9.20 450 1,000 157 203 DepthOut: 3,077 Cutter:Inner/Outer: 7/7 Dull:Maj/Oth: WT/FC WearLoc: A Brgs: 7 Gauge: 4 F BHA - No. 6 - BIT, STAB, DC, STAB, DC, STAB, 13 DC, XO = 464.96 Mud Reports Mud Reports F F	NE	N	ell ID: Fo	rge 78-	32		Job ID: O	-	Saati 26 T	0.000				ame: 78-3
Operator: University of Urah Rig: #10031 Spud Date: 11-Mar-19 Daily Cost / Mud (\$); Weasured Depth (ft): 2966 Working Interest: Wellbore: Original Wellbore AFE (\$) Proposed TD (ft): 3000 Last Casing: 9.625 at 704 RKB Elevation (ft): 5.70	Report No	: 10							Sect: 20 T	own: 263	5 Rng: S			
Easured Depth (ft): 2968 Working Interest: Wellbore: Original Wellbore: AFE No. AFE (\$) ferical Depth (ft): 2809 Last Casing: 9.625 at 704 RKB Elevation (ft): 5.70	•		University	of Utah	Ria:		#10031	Spud Date	: 1	3-Mar-19	Daily C			
Entral Depth (ft): 2800 Last Casing: 9.825 is 704 RKB Elevation (ft): 5.70	•	epth (ft			•	nterest:		-			-			Actual
Bit/BHA Information Total Sumplement Sumplement Sumplement Sumplement Sumplement Sump		• •	/-						0					
Bit Made (ft) / Hrs: 72 / 9.0 Last BOP Test: 15-Mar-19 Totals: verage KOP (ft/hr): 6.0 Noxt BOP Test: 30-Mar-19 Well Cost (\$): 100 Days On Location: urrent Ops: Drilling Days (act./plan): 100 Days On Location: 100 Days On Location: anned Ops: Continue drilling Bays (act./plan): 100 Days On Location: Tel No.: comments: Last Survey 2973'; 4.7 degrees Operations Description Tel No.: 0:00 4:30 4.50 2,923 3-2-1 Prill 8/34' hole from 2894' to 2923' with 8-20 K WOB, 60 RPM, 450 GPM, 1000 I 0:00 4:30 5.00 2,923 10-6-4 Pull out of hole with bit #4 from surface to 2923' 13:00 14:00 1.00 2,923 10-6-4 Pull out of hole with 8 3/4' button bit #4 14:00 1.00 2,928 10-6-4 Pull wid returns Mode with 9.34' button bit #4 14:00 1.00 2,928 10-6-4 Pull wid returns Mode Note point poi	•	• •				•				0.1.0				
Verage ROP (ft/hr): 8.0 Next BOP Test: 30-Mar-19 Well Cost (\$): illing Days (act./plan): 100 Flat Bays (act./plan): 100 Total Days (act./plan): 100 Days On Location: urrent Ops: Continue diffing 3.34" hole to TD 50:30 hrs with full returns: 100 Days On Location: oolpusher: Tyler Curtis, Kollin Mellott Supervisors: Virgil Welch, Monty Keown Tel No.: omments: Last Survey 2973', 4.7 degrees Operations Description Tel No.: 0:00 4:30 4.50 2,923 3-2-1 Full mud returns Full mud returns 4:30 8:00 3.50 2,923 10-64 Pull out of hole with 54' from 2923' to surface 13:00 4:30 13:00 15:00 2,923 10-64 Pull out of hole with 54' from 2923' to surface 13:00 13:00 14:00 19:30 5:50 2,923 10-63 Run in hole with 8 3/4" builton bit 44 from surface to 2923' 19:30 19:30 0:00 4:50 2,966 3-2.1 Dniii 8 3/4" hole from 2923 to 2966' with 20 K WOB, 60	•	• •	:			•					Totals:			
Bit/BHA Information 10/0 Flat Days (act./plan): 10/0 Total Days (act./plan): 10/0 Days On Location: urrent Ope: Continue drilling 3 4/* hole 0 2994 at 05:30 hrs with full returns Image Ope: Continue drilling 3 4/* hole 10 Supervisors: Virgil Welch, Monty Keown Tel No.: onuments: Last Survey 2973'; 4.7 degrees Operations Summary Tel No.: Operations Description 0:00 4:30 4:50 2.923 3-2.1 Drill 3/4' hole from 294' to 2923' with 8-20 K WOB, 60 RPM, 450 GPM, 1000 F 0:00 4:30 5:00 2.923 10-64 Pull out of hole with 3/4' button bit #4 4:00 13:00 5:00 2.923 10-64 Pull out of hole with 3/4' button bit #4 14:00 1:00 2.923 10-64 Pull out of hole with 3/4' button bit #4 14:00 1:00 2.926 3-2.1 Drill 8:3/4' hole from 2923' to 2966' with 20 K WOB, 60 RPM, 450 GPM, 1000 PS 19:30 0:00 4:50 2.966 3-2.1 Drill 8:3/4' hole from 2923' to 2966' with 20 K WOB, 60 RPM, 450 GPM, 1000 PS 19:30 0:00 4:50 2.966 3-2.1 Drill 8:3/4' hole from 2923' to 296' with 20 K WOB, 60 RPM, 450 GPM, 1000	•	•												
Drilling ahead 8 3/4" hole 2994" at 05:30 hrs with full returns Lanad Op: Continue drilling 8 3/4" hole to TD Operations Summary Type Curits, Kolin Meliott Operations Summary From To Elapsed End MD(ft Coperations Description 0:00 4:30 4.50 2.923 3:2-1 Dill 8 3/4" hole form 2894" to 2923" with 8-20 K WOB, 60 RPM, 450 GPM, 1000 I Full mud returns 4:30 8:00 3.50 2.923 10-64 Pull out of hole with bit #3 from 2923" to surface 3:00 14:00 10:00 2.923 10-643 Change bit to new 8 3/4" button bit #4 from surface to 2923" 19:30 0:00 4.50 2.966 3-2-1 Dill 8 3/4" hole form 229:10 c966" with 20 K WOB, 60 RPM, 450 GPM, 1000 PS with full mud returns. Mud wt. 9.2, Vis. 40 19:30 6.500 2.966 3-2-1 bit/BHA Information 110:10 31:11.6 10.000 55 9.20 450 1.000 245 49 41 HTC Theorem 8.750 16 16 352 </td <td>•</td> <td>•</td> <td>,</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>s (act /plan)</td> <td>• 1</td> <td></td> <td></td> <td>cation:</td> <td></td>	•	•	,						s (act /plan)	• 1			cation:	
Bit/BHA Information Term To Elapsed End MD(ft Code Operations Summary Term To Elapsed End MD(ft Code Operations Summary From To Elapsed End MD(ft Code Operations Summary From To Elapsed End MD(ft Code Operations Summary Operations Description 0:00 4:50 2.923 3-2-1 Dill 18 3/4" hole for 2084/ to 2923" with 8-20 K WOB, 60 RPM, 450 GPM, 1000 IP 4:30 8:00 1:00 2.923 10-6-4 Pull out of hole with bit #3 from 2923" to surface 13:00 5:00 2.923 10-6-4 Pull out of hole with bit #3 from 2923" to surface 13:00 1:00 2.923 10-6-4 Pull out of hole with 34" button bit #4 from surface to 2923" 19:30 0:00 4:50 2.966 3-2-1 Drill 8:34" hole from 2923" to 2966" with 20 K WOB, 60 RPM, 450 GPM, 1000 PS Bit//BHA Information Bit//BHA Information Bit//BHA Information Adv Model Diam Jets 1-4 Dist Hrs ROP WOB RPM Torg MudWt Flow Press J.Vel P.Drp JITC threone 8.750 16 16 352 0.116.18.00 55 9.20 450 1.000 <td></td> <td></td> <td>-</td> <td></td> <td></td> <td>• •</td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td>0 011 200</td> <td><i>,</i></td> <td></td>			-			• •		-				0 011 200	<i>,</i>	
bolpusher: Tyler Curtis, Kollin Mellott Supervisors: Virgil Welch, Monty Keown Tel No.: From To Elapsed End MD(ft Code Operations Description 0:00 4:30 4:50 2.923 3:2-1 Drill 8 3/4" hole from 2894" to 2923" with 8-20 KWOB, 60 RPM, 450 GPM, 1000 I 4:30 8:00 3:50 2.923 10-64 Pull out of hole with bit #3 from 2923" to surface 13:00 14:00 1.00 2.923 10-64 Pull out of hole with bit #3 from 2923" to 564 WOB, 60 RPM, 450 GPM, 1000 PS 19:30 0:00 4.50 2.923 10-64 Pull out of hole with 34" button bit #4 100 19:30 0:00 4.50 2.966 3-2-1 Drill 8 3/4" hole from 2923" to 2966 whith 20 K WOB, 60 RPM, 450 GPM, 1000 PS with full mud returns. Mud wt 9.2, Vis. 40 110 mud returns. 3.04 Torong 8.750 16 16 16 352 30 11.6 18,000 55 9.20,450 1,000 157 203 31 HTC Int-cone 8.750 16 16 16 352 30 11.6 18,000 55 9.20,4	•		•			00.00 11	o marianto	lanno						
Bit/BHA Information Bit/BHA Information 0:00 4:30 4.50 2,923 3-2-1 Form To bit 8 3/4" hole from 2894" to 2923" with 8-20 K WOB, 60 RPM, 450 GPM, 1000 I 4:30 8:00 3.50 2,923 8-8 Work on Mud Pump 8:00 13:00 15:00 2,923 10-6-4 Pull out of hole with bit #3 from 2923" to surface 13:00 14:00 10:00 2,923 10-6-3 Run in hole with bit #3 from 2923" to surface 13:00 14:00 10:00 2,926 3-2-1 Drill 8 3/4" hole from 2923" to 2966" with 20 K WOB, 60 RPM, 450 GPM, 1000 P 19:30 0:00 4.50 2,966 3-2-1 Drill 8 3/4" hole from 2923" to 2966" with 20 K WOB, 60 RPM, 450 GPM, 1000 P 19:30 0:00 4.50 2,966 3-2-1 Drill 8 3/4" hole from 2923" to 2966" with 20 K WOB, 60 RPM, 450 GPM, 1000 P 19:30 0:00 4.50 2,966 3-2-1 Drill 8 3/4" hole from 2923" to 2966" with 20 K WOB, 60 RPM, 450 GPM, 1000 P 19:30 0:00 4.50 2,960 6.0 RPM - 4.50 Regression 2000 100 9.20 450	•			0		S	unervisors:	Virail Welc	n Monty Ker	wn		Tel No	•	
Operations Summary Operations Description 0:00 4:30 4:50 2.923 3.2-1 Dill 8 3/4" hole from 2894" to 2923" with 8-20 K WOB, 60 RPM, 450 GPM, 1000 I 4:30 8:00 3:50 2.923 3.2-1 Dill 8 3/4" hole from 2894" to 2923" with 8-20 K WOB, 60 RPM, 450 GPM, 1000 I 4:30 8:00 13:00 5:00 2.923 10-6-4 Pull out of hole with bit #3 from 2923" to surface 13:00 14:00 100 2.923 10-6-3 Run in hole with 8 3/4" button bit #4 14:00 19:30 5.50 2.923 10-6-3 Run in hole with 8 3/4" button bit #4 from surface to 2923" IBI//BHA Information Bit//BHA Information Bit//BHA Information Image: Bit//BHA Information Bit//BHA Information Bit//BHA Information Image: Bit//BHA Information Image: Bit//BHA Information Image: Bit//BHA Information Image: Bit//BHA Information Bit//BHA Information Image	•							r g.: Treie	.,				-	
From To Elapsed End MD(ft) Code Operations Description 0:00 4:30 4.50 2.923 3:2-1 Drill 8 3/4" hole from 2894'to 2923 with 8-20 K WOB, 60 RPM, 450 GPM, 1000 I Full mud returns 4:30 8:00 3.50 2.923 8-8 Work on Mud Pump 6:00 1100 2.923 10-6-4 Pull out of hole with 8 3/4" button bit #4 13:00 14:00 100 2.923 10-6-4 Pull out of hole with 8 3/4" button bit #4 14:00 19:30 5.50 2.923 10-6-3 Run in hole with 3 3/4" button bit #4 from surface to 2923" 19:30 0:00 4.50 2.966 3-2-1 Drill 8 3/4" button bit #4 from surface to 2923" 19:30 0:00 4.50 2.966 3-2-1 Drill 8 3/4" button bit #3 from 2923" to 2965" with 20 K WOB, 60 RPM, 450 GPM, 1000 PS 3 1 HTC tri-core 8.750 16 16 16 352 30. 11.6 18,000 55 9.20 450 10.00 17 203 1 HTC tri-core 8.750 20.0 2.0 43				-,	- 3		Operatio	ons Summ	arv					
0:00 4:30 4.50 2.923 3-2-1 Drill 8 3/4* hole from 2894' to 2923' with 8-20 K WOB, 60 RPM, 450 GPM, 1000 I Full mud returns 4:30 6:00 3.50 2.923 8-8 Work on Mud Pump 8:00 13:00 5.00 2.923 8-8 Work on Mud Pump 8:00 14:00 1:00 2.923 10-64 Pull out of hole with bit 34' from surface 2.923' 19:30 0:00 4.50 2.923 10-643 Run in hole with 84'from surface to 2923' 19:30 0:00 4.50 2.966 3-2-1 Drill 8 3/4* hole from 2923' to 2966' with 20 K WOB, 60 RPM, 450 GPM, 1000 PS 19:30 0:00 4.50 2.966 3-2-1 Drill 8 3/4* hole from 2923' to 2966' with 20 K WOB, 60 RPM, 450 GPM, 1000 PS 19:30 0:00 4.50 2.966 3-2-1 Drill 8 3/4* hole from 2923' to 2966' with 20 K WOB, 60 RPM, 450 GPM, 1000 PS 19:41 HTC tricone 8.750 16 16 352' 30. 11.6 18,000 50' 9.20' 450' 1.000' 19:41 HTC Tricon	From	То	Elapsed	End MD)(ft' Coo	le	oporati		-	Descrip	tion			Non-P
4:30 8:00 3.50 2.923 8-8 Work on Mud Pump 4:30 8:00 13:00 5.00 2.923 10-64 Pull out of hole with bit #3 from 2923' to surface 13:00 14:00 1.00 2.923 10-64 Pull out of hole with 5.34' button bit #4 Total constraints 19:30 5.50 2.923 10-63 Run in hole with 3.34' button bit #4 from surface to 2923' 19:30 0:00 4.50 2.966 3-2.1 Duil 18 34' hole more 293' to 266' with 20 K WOB, 60 RPM, 450 GPM, 1000 PS Bit/BHA Information Interview of the with 5.34' button bit #4 from 293' to 266' with 20 K WOB, 60 RPM, 450 GPM, 1000 PS WOB RPM Torq MudWt Flow Press JVel P.Drp 3 1 HTC tricone 8.750 16 16 352 30 1.6 18,000 55 9.20 450 1.000 245 494 lepthOut: 2.923 Cutter.Inner/Outer: 2/3 Duil:Maj/Oth: CT/WT WearLoc: A Brgs: 7 Gauge: 1 F Mud Reports Date/Time Dens. Vis. PV YP Fit. Cake pH Solids Oil Water Sand LGS Cl Ca CaCl Gels			•				rill 8 3/4" hol	e from 2894'	•	•		RPM 450) GPM 1000	
8:00 13:00 5.00 2.923 10-6-4 Pull out of hole with bit #3 from 2923' to surface 13:00 14:00 1.00 2.923 10-343 Change bit to new 8 3/4" button bit #4 14:00 19:30 5.50 2.923 10-6-3 Run in hole with 8 3/4" button bit #4 from surface to 2923' 19:30 0:00 4.50 2.966 3-2-1 Drill 3/4" hole from 2923' to 2966' with 20 K WOB, 60 RPM, 450 GPM, 1000 PS with full mud returns. Mud wt 9.2, Vis. 40 Bit/BHA Information Interview of the with sit # from surface to 2923' Bit/BHA Information Interview of the with sit # from surface to 2923' Bit/BHA Information Interview of the with sit # from surface to 2923' Bit/BHA Information Interview of the surface to 2923' Joint His 3/4" hold with 9.2, Vis. 40 Interview of the surface to 2923' Joint Bit # Hrs ROP WOB RPM Torq MudWt Flow Press J.Vel P.Drp Joint His 3/4" hold with 5.60 RPM. Torq MudWt Flow Press J.Vel P.Drp Joint His Alt hold hold for the surface to 2923' Joint His Rop Alt Alt Mole Alt Alt HTC	0.00	1.00	1.00	2,0					to 2020 Mit		100,001	u III, 100		
13:00 1.00 2.923 10-343 Change bit to new 8 3/4" button bit #4 14:00 19:30 5.50 2.923 10-6-3 Run in hole with 8 3/4" button bit #4 19:30 0:00 4.50 2.966 3-2-1 Drill 8 3/4" hole from 2923' to 2966' with 20 K WOB, 60 RPM, 450 GPM, 1000 PS Bit/BHA Information Idvalue in the intervalue in the interval in the intervalue interv	4:30	8:00	3.50	2,9	923 8-8	W	/ork on Mud	Pump						
14:00 19:30 5.50 2,923 Run in hole with 8 3/4" button bit #4 from surface to 2923" 19:30 0:00 4.50 2,966 3-2-1 Drill 8 3/4" hole from 2923 to 2966" with 20 K WOB, 60 RPM, 450 GPM, 1000 PS bit/BHA Information Bit/BHA Information bit/BHA Information Bit/BHA Information Bit/BHA Information bit 3/4" hole from 2923 to 2966" with 20 K WOB, 60 RPM, 450 GPM, 1000 PS bit/BHA Information Bit/BHA Information Bit/BHA Information Bit/BHA Information A 10 AC Bit/BHA Information Cutter:Inner/Outer: 2/3 Dull:Maj/Oth: CT/WT WearLoc: A Brgs: 5 Gauge: 1 / P Bit/ STAB, DC, STAB,	8:00	13:00	5.00	2,9	923 10-6-4	Р	ull out of hole	e with bit #3	rom 2923' to	surface				
14:00 19:30 5.50 2.923 10-6-3 Run in hole with 8 3/4" button bit #4 from surface to 2923" 19:30 0:00 4.50 2.966 3-2-1 Drill 8 3/4" hole from 2923" to 2966" with 20 K WOB, 60 RPM, 450 GPM, 1000 PS with full mud returns. Mud wt. 9.2, Vis. 40 Bit/BHA Information Colspan="4">Bit/BHA Information A trick one 8.750 16 16 322 30 11.6 10.00 55 9.20 450 1,000 157 203 Dull:Maj/Oth: CTWT WearLoc: A Brgs: 7 Gauge: 4 F Bit/Time Dens. Vis. PV YP Filt. Cake pH Solids Oil Water Sand LGS Cl Ca CaCl Gels Call Poption: Poptimou: Safety Inform	13:00	14:00		2,9	923 10-343	3 C	hange bit to	new 8 3/4" b	utton bit #4					
Bit/BHA Information Bit/BHA Information More that the second of the	14:00	19:30	5.50	2,9	923 10-6-3	R	un in hole wi	ith 8 3/4" but	on bit #4 fror	n surface	to 2923'			
Bit/BHA Information io/Run Make Model Diam Jets 1-4 Dist Hrs ROP WOB RPM Torq MudWt Flow Press J.Vel P.Drp 3 1 HTC tri-cone 8.750 16 16 16 352 30. 11.6 18,000 55 9.20 450 1,000 245 494 bepthOut: 2,923 Cutter:Inner/Outer: 2/3 Dull:Maj/Oth: CT/WT WearLoc: A Brgs: 5 Gauge: 1 F 4 1 HTC TRI conv 8.750 20 20 43 4.5 9.6 20,000 60 9.20 450 1,000 157 203 bepthOut: 3,077 Cutter:Inner/Outer: 7/7 Dull:Maj/Oth: WT/FC WearLoc: A Brgs: 7 Gauge: 4 F bte/Time Dens. Vis. PV YP Filt. Cake pH Solids Oil Water Sand LGS CI Ca CaCI Gels 2:-Mar-19 22:00 9.20 40 Inorque Flow AV:DC AV:DP	19:30	0:00	4.50	2,9	966 3-2-1						DB, 60 RF	PM, 450 G	3PM, 1000 F	'SI
BHA - No. 6 - BIT, STAB, DC, STAB, DC, STAB, 13 DC, XO = 464.96 Mud Reports Date/Time Dens. Vis. PV YP Filt. Cake pH Solids Oil Water Sand LGS CI Ca CaCl Gels Dilling Parameters Mud Log Depth ROP Av/Mx WOB RPM Torque Flow AV:DC AV:DP Press. Depth Gas:Back Max Conn Trip 2894-2923 6.5 / 8.0 100, 000 55 450 213.9 182.1 1000 No Mud Log Information for this report. Inventory Safety Information Environment Item Used Invent. Item Used Invent. LTI: Days Since: Cum. Water Hauled: No Inventory Records for this report. Med: 1st Aid: Accident Description: Oper: 2 Cont: 8 Serv: 0 Othr:: 0 Rig/Weather Information	DepthOut: 4 1 HTC	2,923 TRI	Cutter: con 8.75	Inner/Ou 0 20	ter: 2/3 20 20	D	ull:Maj/Oth: 43 4.5	CT/WT 9.6 20,000	WearLoc: 60	A E 9.20	Brgs: 5 450	Gaug 1,000	e: 1 157 203	130 { Pull: HR 53 (Pull: DR
Mud Reports Date/Time Dens. Vis. PV YP Filt. Cake pH Solids Oil Water Sand LGS CI Ca CaCI Gels 22-Mar-19 9.20 40 40 77 77 77 77 77 Drilling Parameters Mud Log Depth ROP Av/Mx WOB RPM Torque Flow AV:DC AV:DC AV:DP Press. Depth Gas:Back Max Conn Trip 2894-2923 6.5 / 8.0 100 55 450 213.9 182.1 1000 No Mud Log Information for this report. Inventory Safety Information Environment Item Used Invent. LTI: Days Since: Cum. Water Hauled: No Inventory Records for this report. Med: 1st Aid: Accident Description: Oper: 2 Cont: 8 Serv: 0 Othr: 0 Rig/Weather Information Rig/Weather Information Rig/Weather Information Rig/Weather Information Rig/	•	'					•		wearLoc:	A	srgs: /	Gaug	e: 4	Pull: PR
2-Mar-19 22:00 9.20 40 // Drilling Parameters Mud Log Depth ROP Av/Mx WOB RPM Torque Flow AV:DC AV:DP Press. Depth Gas:Back Max Conn Trip 2894-2923 6.5 / 8.0 100, 000 55 450 213.9 182.1 1000 No Mud Log Information for this report. Inventory Safety Information Environment Item Used Invent. Item Used Invent. LTI: Days Since: Cum. Water Hauled: No Inventory Records for this report. Med: 1st Aid: Accident Description: Oper: 2 Cont: 8 Serv: 0 Othr: 0 Rig/Weather Information		2	, ,	, e ,										
Mud Log Depth ROP Av/Mx WOB RPM Torque Flow AV:DC AV:DP Press. Depth Gas:Back Max Conn Trip 2894-2923 6.5 / 8.0 000 55 450 213.9 182.1 1000 No Mud Log Information for this report. Inventory Safety Information Environment Item Used Invent. LTI: Days Since: Cum. Water Hauled: Io Inventory Records for this report. Med: 1 st Aid: Accident Description: Oper: 2 Cont: 8 Serv: 0 Othr: 0 Rig/Weather Information	Date/Tim	e C	ens. Vis	. PV	YP Fi	lt. Cak	e pH Soli	ds Oil Wa	ter Sand L	GS CI	Ca	CaCl	Gels	Temp In/
Depth ROP Av/Mx WOB RPM Torque Flow AV:DC AV:DP Press. Depth Gas:Back Max Conn Trip 2894-2923 6.5 / 8.0 0.00 55 450 213.9 182.1 1000 No Mud Log Information for this report. Inventory Safety Information Environment Item Used Invent. Item Used Invent. Cum. Water Hauled: Io Inventory Records for this report. Med: 1st Aid: Accident Description: Oper: 2 Cont: 8 Serv: 0 Othr: 0 Oper: 2 Cont: 8 Serv: 0 Othr: 0 0 Total Personnel: 10 Hours: 0	2-Mar-19 2	2:00	9.20 4	10									/ /	/
Depth ROP Av/Mx WOB RPM Torque Flow AV:DC AV:DP Press. Depth Gas:Back Max Conn Trip 2894-2923 6.5 / 8.0 10, 000 55 450 213.9 182.1 1000 No Mud Log Information for this report. Inventory Safety Information Environment Item Used Invent. LTI: Days Since: Cum. Water Hauled: Io Inventory Records for this report. Med: 1st Aid: Accident Description: Oper: 2 Cont: 8 Serv: 0 Othr: 0 Rig/Weather Information Rig/Weather Information				Drillin	a Paramo	tors						Mudla	oa	
2894-2923 6.5 / 8.0 10, 000 55 450 213.9 182.1 1000 No Mud Log Information for this report. Inventory Safety Information Environment Item Used Invent. Item Used Invent. LTI: Days Since: Cum. Water Hauled: Ioo Inventory Records for this report. Med: 1st Aid: Accident Description: Oper: 2 Cont: 8 Serv: 0 Othr: 0 Oper: 2 Cont: 8 Serv: 0 Othr: 0 Rig/Weather Information	Depth	R			•				ss D	enth C	as Back		•	in Pore P
Item Used Invent. Item Used Invent. LTI: Days Since: Cum. Water Hauled: Io Inventory Records for this report. Med: 1st Aid: Accident Description: Oper: 2 Cont: 8 Serv: 0 Othr: 0 Other: 0 Total Personnel: 10 Hours: 0 0 Rig/Weather Information		923			55	4				lud Log I	nformatio		-	
No Inventory Records for this report. Med: 1st Aid: Accident Description: Oper: 2 Cont: 8 Serv: 0 Othr: 0 Total Personnel: 10 Hours: 0 Rig/Weather Information	14	11		-		lucion d		-			Cum M-1		ironment	0.000 ac
Total Personnel: 10 Hours: 0 Rig/Weather Information						Invent.	Med: Accident Descriptio	1s n:	Aid:		cum. wate	r nauleo:		0.000 ac
							•							
							Rig/Weatl	ner Informa	tion					
	Equipment	Proble	ms:											
ocation Condition:	ocation Co	onditio	n:											
Fransport Status:			••											
Sky: Clear/ partly Vis.: 8 Temp: 45 Pressure: 30.12 Wind: 8 Gusts: 15			Vic	8 T ~	mn: 15	Proces	10 20 12	Wind: 9	Gueter	15				

	Daily Drilling	Report						GRG
NA	Well ID: Forge 78-	32	Job ID: Or	riginal			Well N	ame: 78-32
				Se	ect: 26 Town: 265	8 Rng: 9W	County: Beave	r State: UT
Report No: 🤺	11						Report For	r 23-Mar-19
Operator:	University of Utah	Rig:	#10031	Spud Date:		Daily Cost /	Mud (\$):	
Measured Dept		Working Interest:		Wellbore:	Original Wellbore		AFE (\$)	Actual (\$
/ertical Depth (•		RKB Elevatio	on (ft): 5.70			· _
Proposed TD (ft		Next Casing: 5.						
Hole Made (ft) /		Last BOP Test:	15-Mar-19			Totals:		-
Average ROP (f	,	Next BOP Test:	30-Mar-19			Well Cost (\$	•	-
Drilling Days (a		t Days (act./plan):		Total Days (act./plan): 1	1/0 Days On	Location:	
Current Ops:	Pulling out of hole for b	-	urs on bit.					
Planned Ops:	Change bits, Drill to 3,				M	T .1	NI	
-	Tyler Curtis, Kollin Mellot		upervisors:	Virgil Welch,	Monty Keown	Iei	No.:	
Comments: V	Nill be running one more	DIL	0					
Energy Te			Operatio	ons Summar	•	la n		New Dec
From To 0:00 0:	· · · · · · · · · · · · · · · · · · ·				perations Descript		0 CDM 4 000 F	Non-Pro
4 1 HTC DepthOut: 3,0 BHA - No. 6 - Date/Time	TRI coni 8.750 20 77 Cutter:Inner/Ou BIT, STAB, DC, STAB, Dens. Vis. PV	ter: 7/7 D	t Hrs R(50 28.5 ull:Maj/Oth: XO = 464.96 Mud	5.3 15 WT/FC	RPMTorqMudWr659.20WearLoc:A	· · · ·	0 157 203 Sauge: 4	53 33 Pull: PR
DepthOut: 3,0 BHA - No. 6 - Date/Time	TRI coni 8.750 20 77 Cutter:Inner/Ou BIT, STAB, DC, STAB, Dens. Vis. PV	20 20 1 ter: 7/7 D DC, STAB, 13 DC,	t Hrs R(50 28.5 ull:Maj/Oth: XO = 464.96 Mud	DP WOB F 5.3 15 WT/FC V Reports	RPMTorqMudWr659.20WearLoc:AE	450 1,000 Brgs: 7 G	0 157 203 Sauge: 4 Cl Gels	53 33 Pull: PR Temp In/C
4 1 HTC DepthOut: 3,0 BHA - No. 6 -	TRI coni 8.750 20 777 Cutter:Inner/Ou BIT, STAB, DC, STAB, Dens. Vis. PV 0 9.20 40 Drillin	20 20 1 ter: 7/7 D DC, STAB, 13 DC, YP Filt. Cale g Parameters	t Hrs R(50 28.5 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid	DP WOB F 5.3 15 WT/FC / Reports s Oil Wate	RPMTorqMudWr659.20WearLoc:AE	450 1,000 Brgs: 7 G Ca Ca	0 157 203 Sauge: 4 Cl Gels	53 33 Pull: PR Temp In/O
4 1 HTC DepthOut: 3,0 BHA - No. 6 - Date/Time	TRI coni 8.750 20 077 Cutter:Inner/Ou BIT, STAB, DC, STAB, Dens. Vis. PV 0 9.20 40 Drillin ROP Av/Mx WOB	20 20 1 ter: 7/7 D DC, STAB, 13 DC, YP Filt. Cak g Parameters RPM Torque File	t Hrs R(50 28.5 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid	OP WOB F 5.3 15 WT/FC 15 Reports s Oil Wate	RPM Torq MudWi 65 9.20 WearLoc: A E r Sand LGS CI 5. Depth G	450 1,000 Brgs: 7 G Ca Ca Mu Bas:Back M	0 157 203 Sauge: 4 CI Gels // Id Log ax Conn Tr	53 33 Pull: PR Temp In/O /
4 1 HTC DepthOut: 3,0 BHA - No. 6 - Date/Time 23-Mar-19 22:00	TRI coni 8.750 20 077 Cutter:Inner/Ou BIT, STAB, DC, STAB, Dens. Vis. 0 9.20 40 Drillin ROP Av/Mx	20 20 1 ter: 7/7 D DC, STAB, 13 DC, YP Filt. Cak g Parameters RPM Torque File	t Hrs R(50 28.5 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid	OP WOB F 5.3 15 WT/FC 15 Reports s Oil Wate	RPM Torq MudWi 65 9.20 WearLoc: A E r Sand LGS CI 5. Depth G	450 1,000 Brgs: 7 G Ca Ca Mu Bas:Back M	0 157 203 Sauge: 4 CI Gels // Id Log ax Conn Tr	53 33 Pull: PR Temp In/O /
4 1 HTC DepthOut: 3,0 BHA - No. 6 - Date/Time 23-Mar-19 22:00 Depth	TRI coni 8.750 20 077 Cutter:Inner/Ou BIT, STAB, DC, STAB, Dens. Vis. PV 0 9.20 40 Drillin ROP Av/Mx WOB	20 20 1 ter: 7/7 D DC, STAB, 13 DC, YP Filt. Cak g Parameters RPM Torque File	t Hrs R(50 28.5 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid ow AV:DC / 450 213.9	OP WOB F 5.3 15 WT/FC 15 Reports s Oil Wate	RPM Torq MudWi MudWi 65 9.20 WearLoc: A E r Sand LGS CI s. Depth G 00 No Mud Log In	450 1,000 Brgs: 7 G Ca Ca Mu Bas:Back M nformation fo	0 157 203 Sauge: 4 CI Gels // Id Log ax Conn Tr	53 3: Pull: PR Temp In/C / ip Pore Pre
4 1 HTC DepthOut: 3,0 BHA - No. 6 - Date/Time 23-Mar-19 22:00 Depth 2966-3073	TRI coni 8.750 20 177 Cutter:Inner/Ou BIT, STAB, DC, STAB, Dens. Vis. PV 0 9.20 40 Drillin ROP Av/Mx WOB 3 5.1 / 6.0 15	20 20 1 ter: 7/7 D DC, STAB, 13 DC, YP Filt. Cak g Parameters RPM Torque File	t Hrs R(50 28.5 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid ow AV:DC / 450 213.9	OP WOB F 5.3 15 WT/FC 1 Reports s Oil Wate AV:DP Press 144.1 100 Gafety Inform	RPM Torq MudWi 65 9.20 WearLoc: A E r Sand LGS CI S. Depth G D0 No Mud Log In mation Image: Classical Clascience Clascience Clascience Classical Clascience Classical Clasc	450 1,000 Brgs: 7 G Ca Ca Mu Bas:Back M nformation fo	D 157 203 Sauge: 4 CI Gels // Id Log ax Conn Tr or this report. Environment Ided:	53 3: Pull: PR Temp In/C / ip Pore Pre
4 1 HTC 1 DepthOut: 3,0 BHA - No. 6 - 0 Date/Time 23-Mar-19 22:00 Depth 2966-3073 Item Us	TRI coni 8.750 20 077 Cutter:Inner/Out BIT, STAB, DC, STAB, Dens. Vis. PV 0 9.20 40 Drillin Orillin ROP Av/Mx WOB 3 5.1 / 6.0 15	20 20 1 ter: 7/7 D DC, STAB, 13 DC, YP Filt. Cal g Parameters RPM Torque Flie 60 2	t Hrs R(50 28.5 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid ow AV:DC / 450 213.9	OP WOB F 5.3 15 WT/FC 1 Reports s Oil Wate AV:DP Press 144.1 100 Gafety Inform	RPM Torq MudWith 65 9.20 WearLoc: A E r Sand LGS CI s. Depth G 200 No Mud Log In nation Since: C id: C C	450 1,000 Grgs: 7 G Ca Ca Mu Gas:Back M Information for Cum. Water Hau	D 157 203 Sauge: 4 CI Gels // Id Log ax Conn Tr or this report. Environment Ided: Surveys	53 33 Pull: PR Temp In/C 7 ip Pore Pre 0.000 acre
4 1 HTC 1 DepthOut: 3,0 BHA - No. 6 -	TRI coni 8.750 20 077 Cutter:Inner/Ou BIT, STAB, DC, STAB, Dens. Vis. PV 0 9.20 40 Drillin ROP Av/Mx WOB 3 5.1 / 6.0 15 Inventory Inventory	20 20 1 ter: 7/7 D DC, STAB, 13 DC, YP Filt. Cal g Parameters RPM Torque Flie 60 2	t Hrs R(50 28.5 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid ow AV:DC / 450 213.9 LTI: Med: Accident	OP WOB F 5.3 15 WT/FC 15 Reports s Oil AV:DP Press 144.1 100 Gafety Inform Days 1st A	RPM Torq MudWith 65 9.20 WearLoc: A E r Sand LGS CI s. Depth G 200 No Mud Log In nation Since: C id: C C	450 1,000 Brgs: 7 G Ca Ca Mu bas:Back M Information for Cum. Water Hau MD Inc.	D 157 203 Sauge: 4 CI Gels // d Log ax Conn Tr or this report. Environment led: Surveys Azim. TVD	53 33 Pull: PR Temp In/C / ip Pore Pre 0.000 acre NS EW
4 1 HTC 1 DepthOut: 3,0 BHA - No. 6 - 0 Date/Time 23-Mar-19 22:00 Depth 2966-3073 Item Us	TRI coni 8.750 20 077 Cutter:Inner/Ou BIT, STAB, DC, STAB, Dens. Vis. PV 0 9.20 40 Drillin ROP Av/Mx WOB 3 5.1 / 6.0 15 Inventory Inventory	20 20 1 ter: 7/7 D DC, STAB, 13 DC, YP Filt. Cal g Parameters RPM Torque Flie 60 2	t Hrs R(50 28.5 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid ow AV:DC / 450 213.9	DP WOB F 5.3 15 WT/FC Reports s Oil Wate AV:DP Press 144.1 100 Gafety Inform Days 1st A 1:	RPM Torq MudWr 65 9.20 WearLoc: A E r Sand LGS CI s. Depth G 00 No Mud Log II nation since: C id: I I	450 1,000 Grgs: 7 G Ca Ca Mu Gas:Back M Information for Cum. Water Hau MD Inc. 10 3063 2	157 203 Sauge: 4 Cl Gels / / // Id Log // ax Conn or this report. // Environment // Ided:	53 3: Pull: PR Temp In/C / ip Pore Pre 0.000 acre
4 1 HTC 1 DepthOut: 3,0 BHA - No. 6 -	TRI coni 8.750 20 077 Cutter:Inner/Ou BIT, STAB, DC, STAB, Dens. Vis. PV 0 9.20 40 Drillin ROP Av/Mx WOB 3 5.1 / 6.0 15 Inventory Inventory	20 20 1 ter: 7/7 D DC, STAB, 13 DC, YP Filt. Cal g Parameters RPM Torque Flie 60 2	t Hrs R(50 28.5 ull:Maj/Oth: XO = 464.96 Mud ke pH Solid ow AV:DC / 450 213.9 LTI: Med: Accident Descriptior Oper: 2 1	DP WOB F 5.3 15 WT/FC 9 Reports s Oil Wate AV:DP Press 144.1 100 Safety Inform Days 1st A n: Cont: 7 Se	RPM Torq MudWith 65 9.20 WearLoc: A E r Sand LGS CI s. Depth G 00 No Mud Log In nation	450 1,000 Brgs: 7 G Ca Ca Mu bas:Back M Information for Cum. Water Hau MD Inc.	157 203 Sauge: 4 Cl Gels / / // Id Log // ax Conn or this report. // Environment // Ided:	53 33 Pull: PR Temp In/C / ip Pore Pre 0.000 acro NS EW 169
4 1 HTC 1 DepthOut: 3,0 BHA - No. 6 - 0 Date/Time 23-Mar-19 22:00 Depth 2966-3073 Item Us	TRI coni 8.750 20 077 Cutter:Inner/Ou BIT, STAB, DC, STAB, Dens. Vis. PV 0 9.20 40 Drillin ROP Av/Mx WOB 3 5.1 / 6.0 15 Inventory Inventory	20 20 1 ter: 7/7 D DC, STAB, 13 DC, YP Filt. Cal g Parameters RPM Torque Flie 60 2	t Hrs R(50 28.5 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid ow AV:DC / 450 213.9	DP WOB F 5.3 15 WT/FC 9 Reports s Oil Wate AV:DP Press 144.1 100 Safety Inform Days 1st A n: Cont: 7 Se	RPM Torq MudWr 65 9.20 WearLoc: A E r Sand LGS CI s. Depth G 00 No Mud Log II nation since: C id: I I	450 1,000 Grgs: 7 G Ca Ca Mu Gas:Back M Information for Cum. Water Hau MD Inc. 3063 2	157 203 Sauge: 4 Cl Gels / / // Id Log // ax Conn or this report. // Environment // Ided:	53 33 Pull: PR Temp In/C / ip Pore Pre 0.000 acro NS EV 169
4 1 HTC 1 DepthOut: 3,0 BHA - No. 6 -	TRI coni 8.750 20 077 Cutter:Inner/Ou BIT, STAB, DC, STAB, Dens. Vis. PV 0 9.20 40 Drillin ROP Av/Mx WOB 3 5.1 / 6.0 15 Inventory Inventory	20 20 1 ter: 7/7 D DC, STAB, 13 DC, YP Filt. Cal g Parameters RPM Torque Flie 60 2	t Hrs R(50 28.5 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid ce pH Solid 50 213.9 LTI: Med: Accident Descriptior Oper: 2 Total Perso	DP WOB F 5.3 15 WT/FC 9 Reports s Oil Wate AV:DP Press 144.1 100 Safety Inform Days 1st A n: Cont: 7 Se	RPM Torq MudWith 65 9.20 WearLoc: A E r Sand LGS CI s. Depth G 00 No Mud Log In mation a s. Since: C sid: a ours: 0	450 1,000 Grgs: 7 G Ca Ca Mu Gas:Back M Information for Cum. Water Hau MD Inc. 3063 2	157 203 Sauge: 4 Cl Gels / / // Id Log // ax Conn or this report. // Environment // Ided:	53 33 Pull: PR Temp In/C / ip Pore Pre 0.000 acro NS EV 169
4 1 HTC 1 DepthOut: 3,0 BHA - No. 6 -	TRI coni 8.750 20 OTT Cutter:Inner/Out BIT, STAB, DC, STAB, PV Dens. Vis. PV 0 9.20 40 Drillin ROP Av/Mx WOB 3 5.1 / 6.0 15 Inventory sed Invent. Item Records for this report.	20 20 1 ter: 7/7 D DC, STAB, 13 DC, YP Filt. Cal g Parameters RPM Torque Flie 60 2	t Hrs R(50 28.5 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid ce pH Solid 50 213.9 LTI: Med: Accident Descriptior Oper: 2 Total Perso	OP WOB F 5.3 15 WT/FC 1 Reports s Oil Wate AV:DP Press 144.1 100 Gafety Inform Days 1st A h: Cont: 7 Cont: 7 Se	RPM Torq MudWith 65 9.20 WearLoc: A E r Sand LGS CI s. Depth G 00 No Mud Log In mation a s. Since: C sid: a ours: 0	450 1,000 Grgs: 7 G Ca Ca Mu Gas:Back M Information for Cum. Water Hau MD Inc. 3063 2	157 203 Sauge: 4 Cl Gels / / // Id Log // ax Conn or this report. // Environment // Ided:	53 33 Pull: PR Temp In/C / ip Pore Pre 0.000 acro NS EW 169
4 1 HTC 1 DepthOut: 3,0 BHA - No. 6 -	TRI coni 8.750 20 77 Cutter:Inner/Ou BIT, STAB, DC, STAB, Dens. Vis. PV 0 9.20 40 Drillin ROP Av/Mx WOB 3 5.1 / 6.0 15 Inventory seed Invent. Item seed Soft this report.	20 20 1 ter: 7/7 D DC, STAB, 13 DC, YP Filt. Cal g Parameters RPM Torque Flie 60 2	t Hrs R(50 28.5 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid ce pH Solid 50 213.9 LTI: Med: Accident Descriptior Oper: 2 Total Perso	OP WOB F 5.3 15 WT/FC 1 Reports s Oil Wate AV:DP Press 144.1 100 Gafety Inform Days 1st A h: Cont: 7 Cont: 7 Se	RPM Torq MudWith 65 9.20 WearLoc: A E r Sand LGS CI s. Depth G 00 No Mud Log In mation a s. Since: C sid: a ours: 0	450 1,000 Grgs: 7 G Ca Ca Mu Gas:Back M Information for Cum. Water Hau MD Inc. 3063 2	157 203 Sauge: 4 Cl Gels / / // Id Log // ax Conn or this report. // Environment // Ided:	53 33 Pull: PR Temp In/O 7 ip Pore Pre 0.000 acre NS EW 169
4 1 HTC 1 DepthOut: 3,0 BHA - No. 6 -	TRI coni 8.750 20 TRI coni 8.750 20 Cutter:Inner/Ou BIT, STAB, DC, STAB, Dens. Vis. PV 0 9.20 40 Drillin ROP Av/Mx WOB 3 5.1 / 6.0 15 Inventory sed Invent. Item Records for this report. bblems: lition:	20 20 1 ter: 7/7 D DC, STAB, 13 DC, YP Filt. Cal g Parameters RPM Torque Flie 60 2	t Hrs R(50 28.5 ull:Maj/Oth: XO = 464.96 Mud ce pH Solid ce pH Solid 50 213.9 LTI: Med: Accident Descriptior Oper: 2 Total Perso	OP WOB F 5.3 15 WT/FC 1 Reports s Oil Wate AV:DP Press 144.1 100 Gafety Inform Days 1st A h: Cont: 7 Cont: 7 Se	RPM Torq MudWith 65 9.20 WearLoc: A E r Sand LGS CI s. Depth G 00 No Mud Log In mation a s. Since: C sid: a ours: 0	450 1,000 Grgs: 7 G Ca Ca Mu Gas:Back M Information for Cum. Water Hau MD Inc. 3063 2	157 203 Sauge: 4 Cl Gels / / // Id Log // ax Conn or this report. // Environment // Ided:	53 3: Pull: PR Temp In/C / ip Pore Pro 0.000 acr NS EV 169



Job ID: Original

GRG

Well Name: 78-32

1			U					U	Se	ct: 2	6 Tov	vn: 268	S Rng:	9W Cou	unty: Beave	r State: UT
Report N	lo: 12														Report For	r 24-Mar-19
Operator:		University	of Utah	Rig:			#1003	1 Spud	Date:		13-	Mar-19	Daily C	ost / Mu		
Measured	Depth (f	t):	3213	Worki	ng Inter	est:		Wellt	oore:	Ori	ginal V	Vellbore	AFE N	b.	AFE (\$)	Actual (\$)
Vertical De	epth (ft):		3208	Last C	Casing:	9.6	25 at 70	4 RKB	Elevatio	n (ft)	:	5.70				
Proposed	• •		3000	Next C	Casing:	5.50	0 at 3,00	0								
Hole Made	• •		0 / 11.0				5-Mar-1						Totals:			
Average R					BOP Tes		30-Mar-1						Well C			
Drilling Da		. ,	12/0 Fla	•	• •	•		0 Tota	l Days (a	act./p	lan):	1	2/0 D ay	/s On Lo	cation:	12
Current O	•	illing ahead														
Planned O	•	ill ahead 8-3			3,325', c	1			-				g with fibe			
Toolpushe		r Curtis, Kol				Sup	ervisors	: Virgil	Welch, I	/lonty	/ Keow	n		Tel No).:	
Comments	s: Surv	ey at 3,213'	2.5 degr	ees.			0			_						
Erom	Ta	Flanad		154	Codo		Operat	ions S			iono F) o o o ri ni	tion			Non Drod
From 0:00	To 1:30	Elapsed 1.50	End MD	• •	Code 2-1	Drill	9 2/1" h	olo from				Descrip		DM 450	GPM and 1,	Non-Prod
0.00	1.30	1.50	3,0	11 3-	2-1	PSI	0-3/4 110	ble irom	,3073 10	3,07	/ with	IDK W	UD, 00 R	PIVI, 450	GPIM and T,	000
1:30	2:00	0.50	3,0	77 3-	58		/ey @ 3,0	057', 2 d	eq							
2:00	7:30	5.50	3,0	77 10)-6-4		with bit		•	ced n	io over	pull or	hole issu	es		
7:30	8:00	0.50	3,0	77 3-	34-3	Brea	ak off bit	#4 and r	nake up	bit #5	5	•				
8:00	12:00	4.00	3,0	77 10)-6-3	RIH	to 2,977	'	· ·							
12:00	14:00	2.00		77 RI		Safe	ety Ream	from 2,	977' to b	ottom	1					
14:00	23:30	9.50		13 3-		Drill	•	ole from				20 K W	/OB, 65 F	RPM, 450) GPM, 1,000	PSI
23:30	0:00	0.50	3,2	13 3-	58		/ey@ 3,2		deg							
							Bit/BH	A Infor								
No/Run M		odel Diam		s 1-4		Dist	-			1	Torq	1	t Flow I		J.Vel P.Drp	HHP JIF
4 1 HT		con 8.75			-	154		5.1 1	,	65		9.20		1,000	157 203	53 336
DepthOut 5 1 HT			Inner/Ou 0 20			140	:Maj/Oth 10	14.0 20		Vear 65	LUC.	A E 9.30	Brgs: 7	1,000	ge: 4 157 205	Pull: PR 54 340
DepthOut			Inner/Ou		0	-	:Maj/Oth		,	Vear			Brgs:	Gau		Pull: LIH
BHA - No.	,	T, STAB, DC			TAB 13				•	Tear	200.	-	Jigs.	Oau	yc.	
2101 110		.,	,					d Repo	rte							
Date/Ti	me l	Dens. Vis	. PV	YP	Filt.	Cake	pH Sol	-		Sar	nd LG	S CI	Са	CaCl	Gels	Temp In/Ou
24-Mar-19			8				p.:								//	/
			Drillin	a Dara	ameters	•								Mud L	00	
Dept	h F	ROP Av/Mx					AV:DC	AV:DP	Press		Dep	oth G	as:Back			ip Pore Pres
	 3-3077	2.7 / 2.7	10,	65	loique	450			100	_					nis report.	
		14.0 / 14.0	000 20,	65		450					i i i i i i i i i i i i i i i i i i i	a 20g .		011 101 1	no reporti	
0011	0210	11.0711.0	000	00		100	210.0	102.1	100	Ŭ						
		Invent	torv					Safety	Inform	atio	n			En	vironment	
Item	Used	Invent.	Item	Us	ed Inve	ent. L	TI:		Days			(Cum. Wate	er Hauled:		0.000 acre-1
		ords for this					led:		1st A							
	,						ccident									
						D	escripti	on:								
						C)per: 2	Cont:	6 Se	rv:	0 Oth	n r: 0				
						T	otal Per	sonnel:	8 H o	ours:		0				
						R	ig/Weat	ther Inf	ormatio	on						
Equipme	nt Proble	ems:														
Location	Conditio	n:														
Transpor	t Status:															
Sky: Clea		Vis.:	10 Te i	np: 55	Pre	essure	: 30.12	Wind	6	Gu	sts: 8	3				
			1		1					1						



Job ID: Original

GRG

Well Name: 78-32

Sect: 26 Town: 26S Rng: 9W County: Beaver State: UT

Report No	o: 13										Report Fo	or 25-Ma	ar-19
Operator:		University of	of Utah R	ig:	#10031	•		13-Mar-19	Daily Co	ost / Muo	d (\$):		
Measured D	Depth (ft):	3280 W	orking Intere	st:	Wellbore:	Origir	nal Wellbore	AFE No.		AFE (\$)	Actu	al (\$)
Vertical De	pth (ft):		3275 La	ast Casing:	9.625 at 704	RKB Elevation	n (ft):	5.70			-	-	
Proposed T	• •		3000 N	ext Casing:	5.500 at 3,000						-	-	
Hole Made	• •		67 / 7.0 L a	ast BOP Test	: 15-Mar-19				Totals:		-	-	
Average RC	OP (ft/hr)			ext BOP Test					Well Co				
Drilling Day		,		Days (act./pla		Total Days (a	•	n): 1	3/0 Days	s On Lo	cation:		13
Current Op		•		• •	,	per 33 at 06:00 h							
Planned Op				5-1/2" casing	•	o setting depth o			asing in pl				
Toolpusher		Curtis, Kolli		00 / J	Supervisors:	Virgil Welch, N	lonty K	eown		Tel No.			
Comments	: Will c	leploy record	ders in 68-	32 today	• "	•							
	Ta	Flowerd		V Codo	Operatio	ons Summary		na Deceriná	1			Nar	Due
From	To	•	End MD(fi	•		•		ns Descript			0.0014		I-Proc
0:00	6:30	6.50) 3-2-1		ole from 3,213'							
6:30	7:00	0.50) 3-2-1		ed from 12'/hr to	5 0'/nr,	Driller conce	ernea bit r	had lost a	a cone or n	e nad	•••
7:00	8:00	1.00) 11-5-1	Circulate and o								
8:00	11:00	3.00) 10-6-4	POH with drill	, ,	ond -	tooked cut of	2 2 2001 ··	dicati-	the hit	on the	
11:00	11:15	0.25) 3-58	,	ol down drill pipe		· · · · ·		0			
11:15 15:30	15:30 21:45	4.25 6.25) 10-6-4) 4-56	Rig up to run c	0' to surface, le	it dit ar	ια ροιιοπ πα	Die stad in	nole. 6	total, deces	sion	•••
21:45	21.45	0.25	,) 4-98		asing a on casing runn	ing on	d fibor optio	ooblo inot	allation	with opping		
21:43	0:00	2.00	,) 4-12-1	, ,	n in hole 5-1/2"	0	•			0.		
5 1 HTC	C GX3		Jets 1 20 20 nner/Oute	0 20	Dist Hrs R	InformationOPWOBRI2.222/V	PM To 65 /earLo	9.20	Flow P 450 1 Grgs:		.Vel P.Drj 157 203 e:	1	
DepthOut:	C GX3 3,280	0 8.750 Cutter:In	20 20 nner/Oute) 20 r: /	Dist Hrs R 207 17 1 Dull:Maj/Oth:	OP WOB RI 2.2 22 / / / W	65	9.20	450 1	,000	157 203	3 53	336
5 1 HTC	C GX3 3,280	0 8.750 Cutter:In	20 20 nner/Oute) 20 r: /	Dist Hrs R 207 17 1 Dull:Maj/Oth: Dull:Maj/Oth: Dull:Maj/Oth:	OP WOB RI 2.2 22 ////////////////////////////////////	65	9.20	450 1	,000	157 203	3 53	336
5 1 HTC DepthOut:	C GX3 3,280 7 - BIT	0 8.750 Cutter:In	20 20 nner/Oute) 20 r: / C, STAB, 13 E	Dist Hrs R 207 17 1 Dull:Maj/Oth: 0C, XO = 464.96 Mud	OP WOB RI 2.2 22 / / / W	65 /earLo	9.20 c: E	450 1	,000	157 203	3 53	336 LIH
5 1 HTC DepthOut: BHA - No.	C GX3 3,280 7 - BIT ne D	0 8.750 Cutter:In	20 20 nner/Oute STAB, D0 PV) 20 r: / C, STAB, 13 E	Dist Hrs R 207 17 1 Dull:Maj/Oth: 0C, XO = 464.96 Mud	OP WOB RI 2.2 22 / W Reports	65 /earLo	9.20 c: E	450 1 Brgs:	,000 Gaug	157 203 e:	3 53 Pull:	336 LIH
5 1 HTC DepthOut: BHA - No.	C GX3 3,280 7 - BIT ne D	0 8.750 Cutter:In , STAB, DC	20 20 nner/Oute STAB, DO PV rt.) 20 r: / C, STAB, 13 [YP Filt. (Dist Hrs R 207 17 1 Dull:Maj/Oth: DC, XO = 464.96 Mud Cake pH Solic	OP WOB RI 2.2 22 / W Reports	65 /earLo	9.20 c: E	450 1 Brgs:	,000 Gaug CaCl	157 203 e: Gels	3 53 Pull:	336 LIH
5 1 HTC DepthOut: BHA - No. 7 Date/Tin No Mud Re	C GX3 3,280 7 - BIT ne D secords fo	Cutter:In , STAB, DC. Vens. Vis. or this repo	20 20 nner/Oute STAB, DO PV rt. Drilling	20 r: / C, STAB, 13 [YP Filt. (Parameters	Dist Hrs R 207 17 1 Dull:Maj/Oth: DC, XO = 464.96 Mud Cake pH Solid	OP WOB RI 2.2 22 / W Keports Is Oil Water	65 /earLo	9.20 c: E	450 1 srgs: Ca	,000 Gaug CaCl Mud Lu	157 203 e: Gels	3 53 Pull: Temp	336 LIH In/Ou
5 1 HTC DepthOut: BHA - No. Date/Tin No Mud Re Depth	C GX3 3,280 7 - BIT ne D ecords fo	Cutter:In Cutter:In STAB, DC Pens. Vis. Or this repo	20 20 nner/Oute STAB, Do PV rt. Drilling WOB R	20 r: / C, STAB, 13 E YP Filt. 0 Parameters PM Torque	Dist Hrs R 207 17 1 Dull:Maj/Oth: Dull:Maj/Oth: Dull:Maj/Oth: DC, XO = 464.96 Mud Cake pH Solid Flow AV:DC AV	OP WOB RI 2.2 22 / W Reports Is Oil Water AV:DP Press.	65 /earLo Sand	9.20 c: E LGS CI Depth G	450 1 srgs: Ca as:Back	,000 Gaug CaCl Mud Lu Max	157 203 e: Gels Og Conn T	3 53 Pull: Temp	336 LIH In/Ou
5 1 HTC DepthOut: BHA - No. 7 Date/Tin No Mud Re Depth 3213-	C GX3 3,280 7 - BIT ne D ecords fo 8280 1	0 8.750 Cutter:In c, STAB, DC, pens. Vis. or this report OP Av/Mx 0.4 / 14.0	20 20 nner/Oute STAB, D0 PV rt. Drilling WOB R 22	20 r: / C, STAB, 13 E YP Filt. (Parameters PM Torque 65	Dist Hrs R 207 17 1 Dull:Maj/Oth: Maj/Oth: 0C, XO = 464.96 Mud Cake pH Solid Flow AV:DC 450	OP WOB RI 2.2 22 ////////////////////////////////////	65 /earLo Sand	9.20 c: E	450 1 srgs: Ca as:Back	,000 Gaug CaCl Mud Lu Max	157 203 e: Gels Og Conn T	3 53 Pull: Temp	336 LIH In/Ou
5 1 HTC DepthOut: BHA - No. 7 Date/Tin No Mud Re Depth	C GX3 3,280 7 - BIT ne D ecords fo 8280 1	Cutter:In Cutter:In STAB, DC Pens. Vis. Or this repo	20 20 nner/Oute STAB, Do PV rt. Drilling WOB R	20 r: / C, STAB, 13 E YP Filt. 0 Parameters PM Torque	Dist Hrs R 207 17 1 Dull:Maj/Oth: Dull:Maj/Oth: Dull:Maj/Oth: DC, XO = 464.96 Mud Cake pH Solid Flow AV:DC AV	OP WOB RI 2.2 22 ////////////////////////////////////	65 /earLo Sand	9.20 c: E LGS CI Depth G	450 1 srgs: Ca as:Back	,000 Gaug CaCl Mud Lu Max	157 203 e: Gels Og Conn T	3 53 Pull: Temp	336 LIH In/Ou
5 1 HTC DepthOut: BHA - No. 7 Date/Tin No Mud Re Depth 3213-	C GX3 3,280 7 - BIT ne D ecords fo 8280 1	0 8.750 Cutter:In c, STAB, DC. eens. Vis. or this report OP Av/Mx 0.4 / 14.0 0.0 / 0.0	20 20 nner/Oute STAB, DO PV rt. Drilling WOB R 22 22	20 r: / C, STAB, 13 E YP Filt. (Parameters PM Torque 65	Dist Hrs R 207 17 1 Dull:Maj/Oth: 1 1 DC, XO = 464.96 Mud Cake pH Solic Flow AV:DC 450 450 213.9 450	OP WOB RI 2.2 22 ////////////////////////////////////	65 VearLo Sand	9.20 c: E LGS CI Depth G	450 1 srgs: Ca as:Back	,000 Gaug CaCl Mud Lu Max n for th	157 203 e: Gels Og Conn T is report.	3 53 Pull: Temp rip Pore	336 LIH In/Ou
5 1 HTC DepthOut: BHA - No. 7 Date/Tin No Mud Re Depth 3213-	C GX3 3,280 7 - BIT ne D ecords for 3280 1 3280	0 8.750 Cutter:In c, STAB, DC. ens. Vis. or this repo OP Av/Mx 0.4 / 14.0 0.0 / 0.0	20 20 nner/Oute STAB, DO PV rt. Drilling WOB R 22 22	20 r: / C, STAB, 13 E YP Filt. (Parameters PM Torque 65	Dist Hrs R 207 17 1 Dull:Maj/Oth: 17 1 Dull:Maj/Oth: 00, X0 = 464.96 Mud Dake pH Solid Flow AV:DC 450 450 213.9 450	OP WOB RI 2.2 22 ////////////////////////////////////	65 /earLo Sand	9.20 c: E LGS CI Depth G Mud Log Ir	450 1 srgs: Ca as:Back	,000 Gaug CaCl Mud Lu Max n for th	157 203 e: Gels Og Conn T	3 53 Pull: Temp rip Pore	336 LIH In/Ou
5 1 HTC DepthOut: BHA - No. 7 Date/Tin No Mud Re Depth 3213- 3280- 1tem	C GX3 3,280 7 - BIT ne D ecords for 3280 1 3280 1 3280	0 8.750 Cutter:In , STAB, DC. ens. Vis. or this report OP Av/Mx 0.4 / 14.0 0.0 / 0.0 Invento Invento	20 20 nner/Oute STAB, DO PV rt. Drilling WOB R 22 22 22 0ry Item	20 r: / C, STAB, 13 E YP Filt. (Parameters PM Torque 65 65	Dist Hrs R 207 17 1 Dull:Maj/Oth: 17 1 Dull:Maj/Oth: 00, X0 = 464.96 Mud Dake pH Solid Flow AV:DC 450 450 213.9 450 213.9 5 5	OP WOB RI 2.2 22 ////////////////////////////////////	65 /earLo Sand	9.20 c: E LGS CI Depth G Mud Log Ir	450 1 srgs: Ca as:Back	,000 Gaug CaCl Mud Lu Max n for th	157 203 e: Gels Og Conn T is report.	3 53 Pull: Temp rip Pore	330 LIH In/Ou ≯ Pres
5 1 HTC DepthOut: BHA - No. 7 Date/Tin No Mud Re Depth 3213- 3280- 1tem	C GX3 3,280 7 - BIT ne D ecords for 3280 1 3280 1 3280	0 8.750 Cutter:In c, STAB, DC. ens. Vis. or this repo OP Av/Mx 0.4 / 14.0 0.0 / 0.0	20 20 nner/Oute STAB, DO PV rt. Drilling WOB R 22 22 22 0ry Item	20 r: / C, STAB, 13 E YP Filt. (Parameters PM Torque 65 65	Dist Hrs R 207 17 1 Dull:Maj/Oth: Maj/Oth: 0C, XO = 464.96 Mud Cake pH Solid Flow AV:DC 450 450 213.9 450 450 213.9 5 nt. LTI: 5	OP WOB RI 2.2 22 ////////////////////////////////////	65 /earLo Sand	9.20 c: E LGS CI Depth G Mud Log Ir	450 1 srgs: Ca as:Back	,000 Gaug CaCl Mud Lu Max n for th	157 203 e: Gels Og Conn T is report.	3 53 Pull: Temp rip Pore	330 LIH In/Ou ≯ Pres
5 1 HTC DepthOut: BHA - No. 7 Date/Tin No Mud Re Depth 3213- 3280- 1tem	C GX3 3,280 7 - BIT ne D ecords for 3280 1 3280 1 3280	0 8.750 Cutter:In , STAB, DC. ens. Vis. or this report OP Av/Mx 0.4 / 14.0 0.0 / 0.0 Invento Invento	20 20 nner/Oute STAB, DO PV rt. Drilling WOB R 22 22 22 0ry Item	20 r: / C, STAB, 13 E YP Filt. (Parameters PM Torque 65 65	Dist Hrs R 207 17 1 Dull:Maj/Oth: Maj/Oth: 0C, XO = 464.96 Mud Cake pH Solid Flow AV:DC 450 450 213.9 450 450 213.9 \$ nt. LTI: Med: Accident Description	OP WOB RI 2.2 22 ////////////////////////////////////	65 /earLo Sand D No ation Since: d:	9.20 c: E LGS CI Depth G Mud Log Ir	450 1 srgs: Ca as:Back	,000 Gaug CaCl Mud Lu Max n for th	157 203 e: Gels Og Conn T is report.	3 53 Pull: Temp rip Pore	330 LIH In/Ou ≯ Pres
5 1 HTC DepthOut: BHA - No. 7 Date/Tin No Mud Re Depth 3213- 3280- 1tem	C GX3 3,280 7 - BIT ne D ecords for 3280 1 3280 1 3280	0 8.750 Cutter:In , STAB, DC. ens. Vis. or this report OP Av/Mx 0.4 / 14.0 0.0 / 0.0 Invento Invento	20 20 nner/Oute STAB, DO PV rt. Drilling WOB R 22 22 22 0ry Item	20 r: / C, STAB, 13 E YP Filt. (Parameters PM Torque 65 65	Dist Hrs R 207 17 1 Dull:Maj/Oth: 0 1 Dull:Maj/Oth: 0 0 0C, XO = 464.96 Mud Cake pH Solid Flow AV:DC 450 450 213.9 450 It. LTI: Solid Med: Accident Description Oper: 2 2	OP WOB RI 2.2 22 ////////////////////////////////////	65 /earLo Sand D No ation Since: d: v: 0	9.20 c: E LGS CI Depth G Mud Log Ir C Othr: 0	450 1 srgs: Ca as:Back	,000 Gaug CaCl Mud Lu Max n for th	157 203 e: Gels Og Conn T is report.	3 53 Pull: Temp rip Pore	336 LIH In/Ou ≯ Pres
5 1 HTC DepthOut: BHA - No. 7 Date/Tin No Mud Re Depth 3213- 3280- 1tem	C GX3 3,280 7 - BIT ne D ecords for 3280 1 3280 1 3280	0 8.750 Cutter:In , STAB, DC. ens. Vis. or this report OP Av/Mx 0.4 / 14.0 0.0 / 0.0 Invento Invento	20 20 nner/Oute STAB, DO PV rt. Drilling WOB R 22 22 22 0ry Item	20 r: / C, STAB, 13 E YP Filt. (Parameters PM Torque 65 65	Dist Hrs R 207 17 1 Dull:Maj/Oth: Maj/Oth: 0C, XO = 464.96 Mud Cake pH Solid Flow AV:DC 450 450 213.9 450 450 213.9 \$ nt. LTI: Med: Accident Description	OP WOB RI 2.2 22 ////////////////////////////////////	65 /earLo Sand D No ation Since: d: v: 0	9.20 c: E LGS CI Depth G Mud Log Ir	450 1 srgs: Ca as:Back	,000 Gaug CaCl Mud Lu Max n for th	157 203 e: Gels Og Conn T is report.	3 53 Pull: Temp rip Pore	336 LIH In/Ou ≯Pres
5 1 HTC DepthOut: BHA - No. 7 Date/Tin No Mud Re Depth 3213- 3280- 1tem	C GX3 3,280 7 - BIT ne D ecords for 3280 1 3280 1 3280	0 8.750 Cutter:In , STAB, DC. ens. Vis. or this report OP Av/Mx 0.4 / 14.0 0.0 / 0.0 Invento Invento	20 20 nner/Oute STAB, DO PV rt. Drilling WOB R 22 22 22 0ry Item	20 r: / C, STAB, 13 E YP Filt. (Parameters PM Torque 65 65	Dist Hrs R 207 17 1 Dull:Maj/Oth: 0 0 DC, XO = 464.96 Mud Cake pH Solid Flow AV:DC 450 450 213.9 450 At50 213.9 5 nt. LTI: Med: Accident Description 0per: 2 Total Perso Total Perso	OP WOB RI 2.2 22 ////////////////////////////////////	65 VearLo Sand No ation Since: d: v: 0	9.20 c: E LGS CI Depth G Mud Log Ir C Othr: 0	450 1 srgs: Ca as:Back	,000 Gaug CaCl Mud Lu Max n for th	157 203 e: Gels Og Conn T is report.	3 53 Pull: Temp rip Pore	336 LIH In/Ou ≯ Pres
5 1 HTC DepthOut: BHA - No. 7 Date/Tin No Mud Re Depth 3213- 3280- Item No Invento	C GX3 3,280 7 - BIT ne D ecords for 3280 1 3280 1 3280 1 3280 2 Used ory Reco	0 8.750 Cutter:Ir , STAB, DC. vens. Vis. or this report OP Av/Mx 0.4 / 14.0 0.0 / 0.0 Invento Invento rds for this	20 20 nner/Oute STAB, DO PV rt. Drilling WOB R 22 22 22 0ry Item	20 r: / C, STAB, 13 E YP Filt. (Parameters PM Torque 65 65	Dist Hrs R 207 17 1 Dull:Maj/Oth: 0 0 DC, XO = 464.96 Mud Cake pH Solid Flow AV:DC 450 450 213.9 450 At50 213.9 5 nt. LTI: Med: Accident Description 0per: 2 Total Perso Total Perso	OP WOB RI 2.2 22 ////////////////////////////////////	65 VearLo Sand No ation Since: d: v: 0	9.20 c: E LGS CI Depth G Mud Log Ir C Othr: 0	450 1 srgs: Ca as:Back	,000 Gaug CaCl Mud Lu Max n for th	157 203 e: Gels Og Conn T is report.	3 53 Pull: Temp rip Pore	330 LIH In/Ou ≯ Pres
5 1 HTC DepthOut: BHA - No. 7 Date/Tin No Mud Re 2213- 3280- 3280- Item No Invento	C GX3 3,280 7 - BIT ne D ecords fo 3280 1 3280 1 3280 1 3280 2 Used ory Reco	0 8.750 Cutter:In c, STAB, DC. bens. Vis. or this report OP Av/Mx 0.4 / 14.0 0.0 / 0.0 Invento Invent. rds for this	20 20 nner/Oute STAB, DO PV rt. Drilling WOB R 22 22 22 0ry Item	20 r: / C, STAB, 13 E YP Filt. (Parameters PM Torque 65 65	Dist Hrs R 207 17 1 Dull:Maj/Oth: 0 0 DC, XO = 464.96 Mud Cake pH Solid Flow AV:DC 450 450 213.9 450 At50 213.9 5 nt. LTI: Med: Accident Description 0per: 2 Total Perso Total Perso	OP WOB RI 2.2 22 ////////////////////////////////////	65 VearLo Sand No ation Since: d: v: 0	9.20 c: E LGS CI Depth G Mud Log Ir C Othr: 0	450 1 srgs: Ca as:Back	,000 Gaug CaCl Mud Lu Max n for th	157 203 e: Gels Og Conn T is report.	3 53 Pull: Temp rip Pore	336 LIH In/Ou ≯ Pres
5 1 HTC DepthOut: BHA - No. 7 Date/Tin No Mud Re Depth 3213- 3280- Item No Invento	C GX3 3,280 7 - BIT ne D ecords fo 3280 1 3280 1 3280 1 3280 2 Used ory Reco	0 8.750 Cutter:In c, STAB, DC. bens. Vis. or this report OP Av/Mx 0.4 / 14.0 0.0 / 0.0 Invento Invent. rds for this	20 20 nner/Oute STAB, DO PV rt. Drilling WOB R 22 22 22 0ry Item	20 r: / C, STAB, 13 E YP Filt. (Parameters PM Torque 65 65	Dist Hrs R 207 17 1 Dull:Maj/Oth: 0 0 DC, XO = 464.96 Mud Cake pH Solid Flow AV:DC 450 450 213.9 450 At50 213.9 5 nt. LTI: Med: Accident Description 0per: 2 Total Perso Total Perso	OP WOB RI 2.2 22 ////////////////////////////////////	65 VearLo Sand No ation Since: d: v: 0	9.20 c: E LGS CI Depth G Mud Log Ir C Othr: 0	450 1 srgs: Ca as:Back	,000 Gaug CaCl Mud Lu Max n for th	157 203 e: Gels Og Conn T is report.	3 53 Pull: Temp rip Pore	336 LIH In/Ou ≯ Pres
5 1 HTC DepthOut: BHA - No. 7 Date/Tin No Mud Re 2213- 3280- 3280- Item No Invento	C GX3 3,280 7 - BIT ne D ecords for 3280 1 3280 1 3280 1 3280 2 Used ory Reco	0 8.750 Cutter:In c, STAB, DC. bens. Vis. or this report OP Av/Mx 0.4 / 14.0 0.0 / 0.0 Invento Invent. rds for this	20 20 nner/Oute STAB, DO PV rt. Drilling WOB R 22 22 Dry Item report.	20 r: / C, STAB, 13 E YP Filt. (Parameters PM Torque 65 65 Used Inve	Dist Hrs R 207 17 1 Dull:Maj/Oth: 0 0 DC, XO = 464.96 Mud Cake pH Solid Flow AV:DC 450 450 213.9 450 At50 213.9 5 nt. LTI: Med: Accident Description 0per: 2 Total Perso Total Perso	OP WOB RI 2.2 22 ////////////////////////////////////	65 VearLo Sand D No ation Since: d: v: 0 vurs: n	9.20 c: E LGS CI Depth G Mud Log Ir C Othr: 0	450 1 srgs: Ca as:Back	,000 Gaug CaCl Mud Lu Max n for th	157 203 e: Gels Og Conn T is report.	3 53 Pull: Temp rip Pore	336 LIH In/Ou



Job ID: Original

GRG

Well Name: 78-32

Report N	l o: 14								Report F	or 26-Mar-19
Operator:		University	of Utah Rig	g:	#10031	Spud Date:	13-Mar-19	Daily Cos	st / Mud (\$):	
Measured	Depth (ft	:):	3280 Wo	orking Interes	st:	Wellbore:	Original Wellbore	AFE No.	AFE (\$)	Actual (\$)
Vertical De	epth (ft):		3275 La	st Casing:	5.500 at 3,269	RKB Elevation	(ft): 5.70		-	
Proposed ⁻	TD (ft):		3000 Ne	xt Casing:					-	
Hole Made	(ft) / Hrs	:	0/0.0 La	st BOP Test:	15-Mar-19			Totals:	-	
Average R	OP (ft/hr):	Ne	xt BOP Test:	30-Mar-19			Well Cos	t (\$):	
Drilling Da	vs (act./r	, olan):	14/0 Flat D	ays (act./plan		Total Days (ac	t./plan): 1		On Location:	1
Current Op	• • •			to return at da	,		. /	,		
Planned O		•		n operation at	, ,					
Toolpushe		Curtis, Kol				Virgil Welch, Mo	ontv Keown		Tel No.:	
Comments					•	-	•		ollar was 2' long fro	om 3,234-
						ns Summary				
From	То	Elapsed	End MD(ft)	Code			erations Descript	tion		Non-Pro
0:00	15:00	15.00		4-12-1		3274.78') of 5-1/2	2", 17#, K-55, But	tres casing	with float shoe @ fiber optic strappe	
15:00	15:30	0.50	3,280	4-12-1	Test Fiber Opti	cs, all good				
15:30	17:00	1.50	3,280	10-5-1	Circulate casin	g while rigging d	own fiber optic op	eration and	l rigging up cemer	nters
17:00	18:30	1.50	3,280						.5 ppg cement, 75 turns to surface of	
18:30	0:00	5.50	3,280		Wait on cemen		ement at 20:00 h	rs, 15' from	top of rotary.Con	inue
No/Run Ma No Bit Info		odel Diam for this re		-4 D		Information DP WOB RP	M Torq MudW	t Flow Pre	ess J.Vel P.Dr	p HHP JIF
	ormation			-4 D			M Torq MudW	t Flow Pre	ess J.Vel P.Dr	p HHP JIF
No Bit Info	ormation			-4 D	list Hrs R(OP WOB RP	M Torq MudW	t Flow Pre	ess J.Vel P.Dr	p HHP JIF
No Bit Info	ormation ne		port.		Dist Hrs R(ess J.Vel P.Dr	p HHP JIF
No Bit Info BHA - Non Date/Tir	ormation ne me E	for this re	. PV Y	YP Filt. C	Dist Hrs R(DP WOB RP		Ca	CaCl Gels	
No Bit Info BHA - Non Date/Tir No Mud Ro	ne me E ecords f	for this reponent of this reponent the second secon	Port. PV Sort. Drilling F	YP Filt. C Parameters	bist Hrs R(Mud ake pH Solid	DP WOB RP Reports s Oil Water	Sand LGS CI	Ca	CaCl Gels Mud Log	Temp In/O
No Bit Info BHA - Non Date/Tir No Mud Ro Depth	ne ne ecords fr n R	for this reponent of this reponent the second secon	Port. PV Sort. Drilling F	YP Filt. C Parameters PM Torque I	Dist Hrs R(DP WOB RP Reports s Oil Water	Sand LGS CI	Ca I Gas:Back	CaCl Gels Mud Log	
No Bit Info BHA - Non Date/Tir No Mud Ro Depth	ne ne ecords fr n R	for this reponent of this reponent the second secon	PV Nort. Drilling F WOB RF	YP Filt. C Parameters PM Torque I	hist Hrs R(Mud ake pH Solid	DP WOB RP Reports s Oil Water	Sand LGS CI Depth G No Mud Log In	Ca I Gas:Back	CaCl Gels Mud Log Max Conn 1	Temp In/O
No Bit Info BHA - Non Date/Tir No Mud Ro Depth	ne E ecords f R Parame	for this reponent of this reponent to the second se	PV Nort. Drilling F WOB RF	YP Filt. C Parameters PM Torque I	Nist Hrs R Mud ake pH Solid	DP WOB RP Reports s Oil Water	Sand LGS CI Depth G No Mud Log In tion	Ca I Gas:Back	CaCI Gels Mud Log Max Conn T n for this report. Environmer	Temp In/O
No Bit Info BHA - Non Date/Tir No Mud Ro Depth No Drilling Item	ne E ecords f R Parame	for this reponent of this reponent to the second se	PV PV ort. Drilling F WOB RF rds for this cory Item	YP Filt. Co Parameters PM Torque I report.	Nist Hrs R Mud ake pH Solid Flow AV:DC / Flow AV:DC / Lt LTI: Med: Accident Descriptior	DP WOB RP Reports s Oil Water AV:DP Press. Gafety Informa Days S 1st Aid	Sand LGS CI Depth G No Mud Log In tion ince:	Ca I ias:Back	CaCI Gels Mud Log Max Conn T n for this report. Environmer	Temp In/O rip Pore Pre
No Bit Info BHA - Non Date/Tir No Mud Ro Depth No Drilling Item	ne E ecords f R Parame	for this reponent of the formation of th	PV PV ort. Drilling F WOB RF rds for this cory Item	YP Filt. Co Parameters PM Torque I report.	Mud ake pH Solid Flow AV:DC A Flow AV:DC A L LTI: Med: Accident Descriptior Oper: 2 Total Perso	DP WOB RP Reports s Oil Water AV:DP Press. Safety Informa Days S Days S 1st Aid n: Cont: 6 Server Cont: 6 Server 8 Hou	Sand LGS CI Depth G No Mud Log In tion ince: : : : : : : : : : : : : : : : : : :	Ca I ias:Back	CaCI Gels Mud Log Max Conn T n for this report. Environmer	Temp In/O rip Pore Pre
No Bit Info BHA - Non Date/Tir No Mud Ro Depth No Drilling Item	ormation ne decords fr n R g Parame Used ory Reco	for this reponent of the formation of th	PV PV ort. Drilling F WOB RF rds for this cory Item	YP Filt. Co Parameters PM Torque I report.	Mud ake pH Solid Flow AV:DC A Flow AV:DC A L LTI: Med: Accident Descriptior Oper: 2 Total Perso	DP WOB RP Reports s Oil Water AV:DP Press. Gafety Informa Days S 1st Aid n: Cont: 6 Serv	Sand LGS CI Depth G No Mud Log In tion ince: : : : : : : : : : : : : : : : : : :	Ca I ias:Back	CaCI Gels Mud Log Max Conn T n for this report. Environmer	Temp In/O rip Pore Pre
No Bit Info BHA - Non Date/Tir No Mud Ro Depth No Drilling Item No Invento	ormation ne ecords fr n R g Parame Used ory Reco	for this reponent of the second secon	PV PV ort. Drilling F WOB RF rds for this cory Item	YP Filt. Co Parameters PM Torque I report.	Mud ake pH Solid Flow AV:DC A Flow AV:DC A L LTI: Med: Accident Descriptior Oper: 2 Total Perso	DP WOB RP Reports s Oil Water AV:DP Press. Safety Informa Days S Days S 1st Aid n: Cont: 6 Server Cont: 6 Server Safety 8 Hou	Sand LGS CI Depth G No Mud Log In tion ince: : : : : : : : : : : : : : : : : : :	Ca I ias:Back	CaCI Gels Mud Log Max Conn T n for this report. Environmer	Temp In/O rip Pore Pre
No Bit Info BHA - Non Date/Tir No Mud Ro Depth No Drilling Item No Invento	ormation ne me E ecords fr n R g Parame Used ory Reco nt Proble Conditio	for this reponent of the second secon	PV PV ort. Drilling F WOB RF rds for this cory Item	YP Filt. Co Parameters PM Torque I report.	Mud ake pH Solid Flow AV:DC A Flow AV:DC A L LTI: Med: Accident Descriptior Oper: 2 Total Perso	DP WOB RP Reports s Oil Water AV:DP Press. Safety Informa Days S Days S 1st Aid n: Cont: 6 Server Cont: 6 Server Safety 8 Hou	Sand LGS CI Depth G No Mud Log In tion ince: : : : : : : : : : : : : : : : : : :	Ca I ias:Back	CaCI Gels Mud Log Max Conn T n for this report. Environmer	Temp In/O rip Pore Pre



Job ID: Original

GRG

Well Name: 78-32

Sect: 26 Town: 26S Rng: 9W County: Beaver State: UT

									-	27 Mar 10
Report N	o: 15								Report For	21-IVIAI-13
Operator:		University	of Utah Ri	g:	#10031	Spud Date:	13-Mar-19	Daily Cost / M	ud (\$):	-
leasured l	Depth (fl	:):	3280 W	orking Interest	t:	Wellbore:	Original Wellbore	AFE No.	AFE (\$)	Actual (\$
/ertical De	pth (ft):		3275 La	st Casing: 5	5.500 at 3,269	RKB Elevation	(ft): 5.70			-
Proposed 1	TD (ft):		3000 Ne	ext Casing:						-
- Hole Made	(ft) / Hrs	:	0/0.0 La	st BOP Test:	15-Mar-19			Totals:		-
Average R	OP (ft/hr):	Ne	ext BOP Test:	30-Mar-19			Well Cost (\$):		-
Drilling Day	•	•	15/0 Flat D) Days (act./plan)): 0/0	Total Days (ac	t./plan): 1	5/0 Days On L	ocation:	1
Current Op		iting on Day			,		/			
Planned O		• •		down, top off w	vell. move equ	ipment to staging	g area. Install well	head onto 5-1/2	" casing, secu	re well.
Foolpushe	• •	Curtis, Koll	, ,		· · ·	Virgil Welch, Mo	,	Tel N	0,	
Comments					•	29 March, by 17:				
				·····		ns Summary				
From	То	Elapsed	End MD(ft	Code	Operatio		erations Descript	ion		Non-Pro
0:00	7:00	7.00	3,280	·	Waiting on day	•	king on daylight or			
7:00	18:00	11.00		RIGD C	Crew rigging do drill collars, pos	own equipment, sition trailers at la	cleaned and move ay down area. Clea essure wash mud	ed mud pit, load an equipment, b	egin cleaning s	site,
				F	Fiber optic crev	v complete splice	e on their cable ree ng signal tower at	el. Telemetry co		
18:00	0:00	6.00	3.280		· /		king daylight only			
		odel Diam for this rej		-4 Di	Bit/BHA ist Hrs R0	Information OP WOB RP	M Torq MudWt	E Flow Press	J.Vel P.Drp	HHP JIF
No/Run Ma No Bit Info				-4 Di			M Torq MudWt	Flow Press	J.Vel P.Drp	HHP JIF
No Bit Info	ormation			-4 Di	ist Hrs R(OP WOB RP	M Torq MudWt	E Flow Press	J.Vel P.Drp	HHP JIF
No Bit Info BHA - Non	ormation	for this re	port.		ist Hrs RG	DP WOB RP				
No Bit Info BHA - Non Date/Tir	ne E		port. . PV . prt.	YP Filt. Ca	ist Hrs RG	OP WOB RP		Ca CaCl	Gels	HHP JIF Temp In/O
No Bit Info BHA - Non Date/Tir No Mud Ro	me E ecords f	for this rep Dens. Vis. Or this repo	port. PV ort. Drilling I	YP Filt. Ca Parameters	ist Hrs R(Mud ike pH Solid	DP WOB RP Reports s Oil Water	Sand LGS CI	Ca CaCl Mud	Gels	Temp In/O
No Bit Info BHA - Non Date/Tir No Mud Ro Depth	me E ecords f	for this rep Dens. Vis. Or this repo	port. PV prt. Drilling I WOB RI	YP Filt. Ca Parameters PM Torque F	ist Hrs R(Mud ike pH Solid	DP WOB RP Reports s Oil Water	Sand LGS CI	Ca CaCl	Gels Log Conn Tri	Temp In/O
No Bit Info BHA - Non Date/Tir No Mud Ro Depth	me E ecords f	for this rep Dens. Vis. or this repo	PV PV ort. Drilling I WOB RI	YP Filt. Ca Parameters PM Torque F	ist Hrs R(Mud ike pH Solid	DP WOB RP Reports s Oil Water	Sand LGS CI Depth G No Mud Log Ir	Ca CaCl Mud as:Back Max nformation for t	Gels Log Conn Tri	Temp In/O p Pore Pre
No Bit Info BHA - Non Date/Tir No Mud Ro Depth	me C ne C ne R n R n R	for this rep Dens. Vis. For this report COP Av/Mx eters Recor	PV PV ort. Drilling I WOB RI	YP Filt. Ca Parameters PM Torque F	ist Hrs R(Mud ske pH Solid	DP WOB RP Reports s Oil Water	Sand LGS CI Depth G No Mud Log Ir tion	Ca CaCl Mud as:Back Max nformation for t	Gels	Temp In/C
No Bit Info BHA - Non Date/Tir No Mud Ro Depth No Drilling Item	me E ecords f n R g Parame	for this rep Dens. Vis. or this repo COP Av/Mx eters Recor	Drilling I Drilling I WOB Ri rds for this	YP Filt. Ca Parameters PM Torque F report.	ist Hrs R(Mud ske pH Solid	DP WOB RP Reports s Oil Water AV:DP Press.	Sand LGS CI Depth G No Mud Log Ir tion	Ca CaCl Mud as:Back Max nformation for t	Gels	Temp In/O
No Bit Info BHA - Non Date/Tir No Mud Ro Depth No Drilling Item	me E ecords f n R g Parame	for this rep Dens. Vis. or this repo COP Av/Mx eters Recor Invent Invent.	Drilling I Drilling I WOB Ri rds for this	YP Filt. Ca Parameters PM Torque F report.	ist Hrs R Mud ake pH Solid ilow AV:DC A ilow A ilow AV:DC A ilow AV:DC A ilow AV:DC A ilow A il	DP WOB RP Reports s Oil Water AV:DP Press.	Sand LGS CI Depth G No Mud Log Ir tion ince: C : : 4 Othr: 0	Ca CaCl Mud as:Back Max nformation for t	Gels	Temp In/C
No Bit Info BHA - Non Date/Tir No Mud Ro Depth No Drilling Item	me E ecords f n R g Parame	for this rep Dens. Vis. or this repo COP Av/Mx eters Recor Invent Invent.	Drilling I Drilling I WOB Ri rds for this	YP Filt. Ca Parameters PM Torque F report.	ist Hrs R0 Mud ike pH Solid ike pH Solid ike LTI: Med: Accident Description Oper: 2 0 Total Perso	DP WOB RP Reports s Oil Water AV:DP Press. Gafety Informa Days S 1st Aid I: Cont: 6 Serv	Sand LGS CI Depth G No Mud Log Ir ince: C : : 4 Othr: 0 Irs: 0	Ca CaCl Mud as:Back Max nformation for t	Gels	Temp In/C
No Bit Info BHA - Non Date/Tir No Mud Ro Depth No Drilling Item	me E ecords f n R y Parame	for this rep Dens. Vis. or this repo COP Av/Mx eters Recor Invent Invent. ords for this	Drilling I Drilling I WOB Ri rds for this	YP Filt. Ca Parameters PM Torque F report.	ist Hrs R0 Mud ike pH Solid ike pH Solid ike LTI: Med: Accident Description Oper: 2 0 Total Perso	DP WOB RP Reports s Oil Water AV:DP Press. AV:DP Press. AV:DP Press. AV:DP Press. AV:DP Press. AV:DP Press. Cont: 1st Aid Cont: 6 Server Onnel: 12 Hou	Sand LGS CI Depth G No Mud Log Ir ince: C : : 4 Othr: 0 Irs: 0	Ca CaCl Mud as:Back Max nformation for t	Gels	Temp In/O
No Bit Info BHA - Non Date/Tir No Mud Ro Depth No Drilling Item No Invento	ne E ecords f g Paramo Used ory Reco	for this rep Dens. Vis. or this repo COP Av/Mx eters Recor Invent. Invent. ords for this ms:	Drilling I Drilling I WOB Ri rds for this	YP Filt. Ca Parameters PM Torque F report.	ist Hrs R0 Mud ike pH Solid ike pH Solid ike LTI: Med: Accident Description Oper: 2 0 Total Perso	DP WOB RP Reports s Oil Water AV:DP Press. AV:DP Press. AV:DP Press. AV:DP Press. AV:DP Press. AV:DP Press. Cont: 1st Aid Cont: 6 Server Onnel: 12 Hou	Sand LGS CI Depth G No Mud Log Ir ince: C : : 4 Othr: 0 Irs: 0	Ca CaCl Mud as:Back Max nformation for t	Gels	Temp In/O p Pore Pre
No Bit Info BHA - Non Date/Tir No Mud Ro Depth No Drilling Item No Invento	me E ecords f g Paramo Used ory Recc it Proble Conditio	for this rep Dens. Vis. or this repo COP Av/Mx eters Recor Invent. Invent. ords for this ms:	Drilling I Drilling I WOB Ri rds for this	YP Filt. Ca Parameters PM Torque F report.	ist Hrs R0 Mud ike pH Solid ike pH Solid ike LTI: Med: Accident Description Oper: 2 0 Total Perso	DP WOB RP Reports s Oil Water AV:DP Press. AV:DP Press. AV:DP Press. AV:DP Press. AV:DP Press. AV:DP Press. Cont: 1st Aid Cont: 6 Server Onnel: 12 Hou	Sand LGS CI Depth G No Mud Log Ir ince: C : : 4 Othr: 0 Irs: 0	Ca CaCl Mud as:Back Max nformation for t	Gels	Temp In/C



Job ID: Original

GRG

Well Name: 78-32

Report N	o: 16								Report For	· 28-Mar-19
Operator:		University	of Utah Ri	g:	#10031	Spud Date:	13-Mar-19	Daily Cost / M	/lud (\$):	
Measured	Depth (ft):	3280 W	orking Interest:	:	Wellbore:	Original Wellbore	AFE No.	AFE (\$)	Actual (\$
/ertical De	epth (ft):		3275 La	st Casing: 5.	.500 at 3,269	RKB Elevatio	n (ft): 5.70			-
Proposed ⁻	TD (ft):		3000 Ne	ext Casing:						-
Hole Made	(ft) / Hrs	:	0/0.0 La	st BOP Test:	15-Mar-19			Totals:		-
Average R	· /		Ne	ext BOP Test:	30-Mar-19			Well Cost (\$):	•	-
Drilling Da			16/0 Flat C	ays (act./plan)		Total Days (a	ct./plan): 1	6/0 Days On I		1
Current Op	• • •	iting on day								
Planned O		° ,	•		32 well pad W	eld production	flange to 5-1/2" cas	sing install fland	ne and valve C	omplete
Foolpushe		Curtis, Koll				Monty Keown,	-	Tel N	_	
Comments					•	, ,	ong from 3,234-3,23	36. Top of phone	e	
			,	<u> </u>		ns Summary				
From	То	Elapsed	End MD(ft	Code	oporatio		perations Descript	ion		Non-Pro
0:00	7:00	7.00			Vait on davligh		ng daylight only			
7:00	19:00	12.00	3,280	o jc si	out mud pump, ob, with 1 yard	transport off si ready mix bate ping on site wit	uipment, move drill te, transport 2- pipe ch sand grout. fill to h trash pick up. 1 T	e trailers off site surface from 6	, perform top co 8'. Back drag d	ement rill
19:00	0:00	5.00	3,280	WOD V	Vait on dayligh	nt, crews workir	ng daylight only.			
		odel Diam for this rej		-4 Dis		Information DP WOB R	PM Torq MudWi	E Flow Press	J.Vel P.Drp	HHP JIF
No/Run M No Bit Info BHA - Non	ormation			-4 Dis	st Hrs R(DP WOB R	PM Torq MudWi	E Flow Press	J.Vel P.Drp	HHP JIF
No Bit Info BHA - Non	ormation	for this re	port.		st Hrs R(DP WOB R				
No Bit Info BHA - Non Date/Tir	ne me E		oort. PV ort.	YP Filt. Cal	st Hrs R(DP WOB R		Ca CaC	l Gels	HHP JIF
No Bit Info BHA - Non Date/Tir	me E ecords f	for this rep Dens. Vis.	oort. PV ort. Drilling F		st Hrs R(Mud ke pH Solid	DP WOB R Reports s Oil Water	Sand LGS CI	Ca CaC	I Gels	Temp In/O
No Bit Info BHA - Non Date/Tir No Mud Ro Depth	me E ecords f	for this rep Dens. Vis. For this repo	. PV prt. Drilling F WOB RI	YP Filt. Cal Parameters PM Torque Fl	st Hrs R(Mud ke pH Solid	DP WOB R Reports s Oil Water	Sand LGS CI	Ca CaC Mud	I Gels I Log x Conn Tri	Temp In/O
No Bit Info BHA - Non Date/Tir No Mud Ro Depth	ne E ecords fr R Parame	for this rep bens. Vis. or this repo OP Av/Mx eters Recor	Dort. PV Drilling F WOB RI ds for this ory	YP Filt. Cal Parameters PM Torque Fl report.	st Hrs R(Mud ke pH Solid low AV:DC A	DP WOB R Reports s Oil Water AV:DP Press.	Sand LGS CI	Ca CaC Mud as:Back Ma nformation for	I Gels Log x Conn Tri this report.	Temp In/O
No Bit Info BHA - Non Date/Tir No Mud Ro Depth	ne E ecords fr R Parame	for this reponent of this reponent of the second se	PV ort. Drilling F WOB RI ds for this	YP Filt. Cal Parameters PM Torque Fl	st Hrs R(Mud ke pH Solid low AV:DC A	DP WOB R Reports s Oil Water AV:DP Press.	Sand LGS CI	Ca CaC Mud Gas:Back Ma Information for	I Gels Log x Conn Tri this report.	Temp In/O
No Bit Info BHA - Non Date/Tir No Mud Ro Depth No Drilling Item	me E ecords f n R g Parame	for this rep bens. Vis. or this repo OP Av/Mx eters Recor	Doort. PV Drilling F WOB RI WOB RI ds for this ory Item	YP Filt. Cal Parameters PM Torque Fl report.	st Hrs R(Mud ke pH Solid low AV:DC / low AV:DC / LTI: Med: Accident	DP WOB R Reports s Oil Water AV:DP Press. Safety Inform Days 1st Ai No accident i: safety issue Cont: 5 Ser	Sand LGS CI Depth G No Mud Log Ir ation Since: C d: s injuries or s v: 3 Othr: 0	Ca CaC Mud as:Back Ma nformation for	I Gels Log x Conn Tri this report.	Temp In/O
No Bit Info BHA - Non Date/Tir No Mud Ro Depth No Drilling Item	me E ecords f n R g Parame	for this rep Dens. Vis. For this repo OP Av/Mx eters Recor Invent Invent	Doort. PV Drilling F WOB RI WOB RI ds for this ory Item	YP Filt. Cal Parameters PM Torque Fl report.	Mud ke pH Solid ke	Reports s Oil Water AV:DP Press. afety Inform Days 1st Ai No accident : safety issue Cont: 5 Sei onnel: 9 Ho	Sand LGS CI	Ca CaC Mud as:Back Ma nformation for	I Gels Log x Conn Tri this report.	Temp In/O
No Bit Info BHA - Non Date/Tir No Mud Ro Depth No Drilling Item	ne E ecords f n R g Parame Used ory Reco	for this rep bens. Vis. or this repo OP Av/Mx eters Recor Invent. Invent. Invent.	Doort. PV Drilling F WOB RI WOB RI ds for this ory Item	YP Filt. Cal Parameters PM Torque Fl report.	Mud ke pH Solid ke	DP WOB R Reports s Oil Water AV:DP Press. Safety Inform Days 1st Ai No accident i: safety issue Cont: 5 Ser	Sand LGS CI	Ca CaC Mud as:Back Ma nformation for	I Gels Log x Conn Tri this report.	Temp In/O
No Bit Info BHA - Non Date/Tir No Mud Ro Depth No Drilling Item No Invento	ne E ecords fr n R g Parame Used ory Reco	or this report or this rest or this	Doort. PV Drilling F WOB RI WOB RI ds for this ory Item	YP Filt. Cal Parameters PM Torque Fl report.	Mud ke pH Solid ke	Reports s Oil Water AV:DP Press. afety Inform Days 1st Ai No accident : safety issue Cont: 5 Sei onnel: 9 Ho	Sand LGS CI	Ca CaC Mud as:Back Ma nformation for	I Gels Log x Conn Tri this report.	Temp In/O
No Bit Info BHA - Non Date/Tir No Mud Ro Depth No Drilling Item No Invento	ne me E ecords fr n R g Parame Used ory Reco	or this report or this rest or this	Doort. PV Drilling F WOB RI WOB RI ds for this ory Item	YP Filt. Cal Parameters PM Torque Fl report.	Mud ke pH Solid ke	Reports s Oil Water AV:DP Press. afety Inform Days 1st Ai No accident : safety issue Cont: 5 Sei onnel: 9 Ho	Sand LGS CI	Ca CaC Mud as:Back Ma nformation for	I Gels Log x Conn Tri this report.	Temp In/C



Report Date for Period 13-Mar-19 to 28-Mar-19

Report No: 13 Operator:	Date:	26-Mai	-19		Well Nan Rig Nam	ne: 68-32 ne: #10031
oporatori		ty of Utah	Daily Cost/Mud	Cost \$	0 /	
Field:	Onversio	ly of otall	AFE No.	Name	AFE \$	Actual \$
API No:		NA	Non-AFE	Name		597,820
MD / TVD (ft):	1000 /	1000		Totals:	0	597,820
Hole Drilled/Average F		1000	Well Non-AFE		0	597,820
Drilling Days:		4	Well Total Cost	•		597,820
Wellbore:	Original	Wellbore	Wen Total Cost	. ψ .		557,020
Proposed TD (ft):	Onginar	1000				
Last BOP Test:		1000				
Working Interest:						
Sup(s): Randy Baldwir	Roger Almond	Eng(s):	Rivas	Та	#:	
Current Operations:	Project completed	Elig(3).	Tavas			
Planned Operations:	Hook up surface receive	ers				
Mngmt Summary:	•		ng pool sand in dr	y well, changed instrumen	t springs due to	tight fit Ran
Comments:				nd blew 5.5" dry NOTE; Ca		-
Well ID: Forge 78					Well Nan	-
Report No: 1	Date:	13-Mai	-19			ne: #10031
Operator:		ty of Utah	Daily Cost/Mud	Cost \$	0 /	
Field:	Onvoion	ly of orall	AFE No.	Name	AFE \$	Actual \$
API No:		NA	Non-AFE	Humo		6,487
MD / TVD (ft):	700 /	700		Totals:	0	6,487
Hole Drilled/Average F		58.3	Well Non-AFE		0	6,487
Drilling Days:		1	Well Total Cost	•		6,487
Drinning Dayor	Original	Wellbore		· • •		0,101
Wellbore:		Trembere				
Wellbore: Proposed TD (ff):	0.1g.1.d.1	3000				
Proposed TD (ft):	0.19.1.4	3000				
Proposed TD (ft): Last BOP Test:		3000				
Proposed TD (ft): Last BOP Test: Working Interest:			Rivas	Ta	1 #•	
Proposed TD (ft): Last BOP Test: Working Interest: Sup(s): Randy Baldwir	n/ Virgil Welch, Roger Al	Eng(s):			I#: 8* Pulled out o	f hole to ria
Proposed TD (ft): Last BOP Test: Working Interest:	n/ Virgil Welch, Roger Al	Eng(s): urns. Circul	ate to clean hole.	Run survey @ 700' Inc. 1.		f hole to rig .



Report Date for Period 13-Mar-19 to 28-Mar-19

	8-32				Well Nan	
Report No: 2	Date	: 14-Mai	r-19		Rig Nam	e: #10031
Operator:	Univer	sity of Utah	Daily Cost/Mu	d Cost \$:	0 /	0
Field:			AFE No.	Name	AFE \$	Actual \$
API No:		NA	Non-AFE			10,889
MD / TVD (ft):	716 /	716		Total	s: 0	10,889
Hole Drilled/Average	ROP: 16 /	32.0	Well Non-AFE	Cost \$:		10,889
Drilling Days:		2	Well Total Cos	t \$:		10,889
Wellbore:	Origin	al Wellbore				
Proposed TD (ft):		3000				
Last BOP Test:						
Working Interest:						
Sup(s): Virgil Welch,	Roger Almond	Eng(s):	Rivas	1	ſel #:	
Current Operations:	Cutoff 9 5/8" casing a	nd laid down	. Lay over mast.	Cut off conductor pipe wi	th rotating head. C	Cutoff and
Planned Operations:	Complete Nipple up. F	unction and	test BOP's Make	e up 8 3/4" assembly, Cle	an out cement. Te	est shoe
Mngmt Summary:	Drilled from 700' to71	6' with full re	turns. Circulated	hole cleaned and condition	oned for 9 5/8" cas	sing. Ran _
Well ID: Forge 7	8-32				Well Nan	ne: 78-32
Report No: 3	Date	: 15-Mai	r-19		Rig Nam	e: #10031
Operator:	Univer	sity of Utah	Daily Cost/Mu	d Cost \$:	0 /	0
Field:			AFE No.	Name	AFE \$	Actual \$
API No:		NA	Non-AFE			466,002
MD / TVD (ft):	1000 /	1000		Total	s: 0	466,002
Hole Drilled/Average	ROP: 284 /	103.3	Well Non-AFE	Cost \$:		466,002
		3	Well Total Cos	t \$:		466,002
Drilling Days:		•				
Drilling Days: Wellbore:	Origin	al Wellbore				
	Origin					
Wellbore:	Origin	al Wellbore				
Wellbore: Proposed TD (ft):	Origin	al Wellbore 3000				
Wellbore: Proposed TD (ft): Last BOP Test:		al Wellbore 3000	Rivas	<u>۲</u>	「el #:	
Wellbore: Proposed TD (ft): Last BOP Test: Working Interest: Sup(s): Virgil Welch,	Roger Almond	al Wellbore 3000 15-Mar-19 Eng(s):		1 hange over hole. Survey		Pulled out o
Wellbore: Proposed TD (ft): Last BOP Test: Working Interest: Sup(s): Virgil Welch, Current Operations:	Roger Almond Circulated and pumpe	al Wellbore 3000 15-Mar-19 Eng(s): ed 142 bbls c	of fresh water to c		at 1,000' , Inc 4*.	
Wellbore: Proposed TD (ft): Last BOP Test: Working Interest:	Roger Almond Circulated and pumpe Circulate and water ba	al Wellbore 3000 15-Mar-19 Eng(s): ed 142 bbls c ack well. Pul	of fresh water to c I out to run in hole	hange over hole. Survey	at 1,000' , Inc 4*. Stage in and unloa	ad well with .



Report Date for Period 13-Mar-19 to 28-Mar-19

Report No: 4	3-32 Date:	16-Mar	·-19		Well Nan Rig Nam	ne: 78-32 e: #10031
Operator:	Universi	ty of Utah	Daily Cost/Mud	Cost \$:	0 /	
Field:			AFE No.	Name	AFE \$	Actual \$
API No:		NA	Non-AFE			470,800
MD / TVD (ft):	1000 /	1000		Totals:	0	470,800
Hole Drilled/Average	ROP: 0 /		Well Non-AFE C	ost \$:		470,800
Drilling Days:		4	Well Total Cost	\$:		470,800
Wellbore:	Original	Wellbore				
Proposed TD (ft):		3000				
Last BOP Test:	1	5-Mar-19				
Working Interest:						
Sup(s): Virgil Welch,	Roger Almond	Eng(s):	Rivas	Tel a	#:	
Current Operations:	Serviced mud pump an	d tighten m	ud pump lines. PO	H to surface. Pick up stab	ilizer and place	ed above the
Planned Operations:	Wait on stabilizers to a	rive. Unloa	d and make up too	ls. Run into the hole with E	3HA. Drill 8-3/4	" hole to TD
Mngmt Summary:	Circulated hole clean b	efore chang	ge over to water. R	an survey @ 980' 4 deg. C	hanged over to	o fresh
Comments:	Airlifted @ 980' had ste	ady yield o	f 200 gpm			-
Well ID: Forge 78	3-32				Well Nan	ne: 78-32
Report No: 5	Date:	17-Mar	·-19		Rig Nam	e: #10031
Operator:	Universi	ty of Utah	Daily Cost/Mud	Cost \$:	0 /	0
operator.						
Field:			AFE No.	Name	AFE \$	Actual \$
•		NA	AFE No. Non-AFE	Name	AFE \$	
Field:	1550 /	NA 1546		Name Totals:	AFE \$	550,187
Field: API No:				Totals:	-	550,187 550,187
Field: API No: MD / TVD (ft):		1546	Non-AFE	Totals: ost \$:	-	550,187 550,187 550,187
Field: API No: MD / TVD (ft): Hole Drilled/Average	ROP: 550 /	1546 44.0	Non-AFE	Totals: ost \$:	-	550,187 550,187 550,187
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days:	ROP: 550 /	1546 44.0 5	Non-AFE	Totals: ost \$:	-	550,187 550,187 550,187
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore:	ROP: 550 / Original	1546 44.0 5 Wellbore	Non-AFE	Totals: ost \$:	-	550,187 550,187 550,187
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft):	ROP: 550 / Original	1546 44.0 5 Wellbore 3000	Non-AFE	Totals: ost \$:	-	550,187 550,187 550,187
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft): Last BOP Test:	ROP: 550 / Original	1546 44.0 5 Wellbore 3000	Non-AFE Well Non-AFE C Well Total Cost S	Totals: ost \$:	0	550,187 550,187 550,187
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft): Last BOP Test: Working Interest:	ROP: 550 / Original 1 Roger Almond	1546 44.0 5 Wellbore 3000 5-Mar-19 Eng(s):	Non-AFE Well Non-AFE Co Well Total Cost S	Totals: ost \$: \$:	0	550,187 550,187 550,187 550,187
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft): Last BOP Test: Working Interest: Sup(s): Virgil Welch,	ROP: 550 / Original 1 Roger Almond Time drill 8-3/4" hole fro	1546 44.0 5 Wellbore 3000 5-Mar-19 Eng(s): om 1,550' to	Non-AFE Well Non-AFE C Well Total Cost S Rivas o 1,597' with full ret	Totals: ost \$: \$: Tel #	0 #: deg. Time drill	550,187 550,187 550,187 550,187 8-3/4" hole _



Report Date for Period 13-Mar-19 to 28-Mar-19

Report No: 6 Operator:	Date:	18-Mar	-19			me: 78-32 ne: #10031
		ty of Utah	Daily Cost/Mu	d Cost \$:	0	
Field:		ty of otall	AFE No.	Name	AFE \$	Actual \$
API No:		NA	Non-AFE	Humo		626,087
MD / TVD (ft):	2077 /	2072		Totals	: 0	626,087
Hole Drilled/Average R		24.0	Well Non-AFE			626,087
Drilling Days:		6	Well Total Cos			626,087
Wellbore:	Original	Wellbore		• •		020,000
Proposed TD (ft):		3000				
Last BOP Test:	1	15-Mar-19				
Working Interest:						
Sup(s): Virgil Welch, R	oger Almond	Eng(s):	Rivas	Te	el #:	
	Time drill 8-3/4" hole fro	•••				
•	Drill new 8-3/4" hole to	TD. Prepar	e to run 5-1/2" ca	asing with fiber optics cable	e attached and o	cement in
•				ull returns and no hole issu		
	Started using some LCI	M at 1,867'	in case of some	small losses.		
Well ID: Forge 78-					Well Nar	ne: 78-32
Report No: 7	Date:	19-Mar	-19		Rig Nan	ne: #10031
Operator:	Universi	ty of Utah	Daily Cost/Mu	d Cost \$:	0	
Field:			AFE No.	Name	AFE \$	Actual \$
API No:		NA	Non-AFE			696,085
MD / TVD (ft):	2545 /	2540		Totals	: 0	696,085
Hole Drilled/Average R	OP: 468 /	21.3	Well Non-AFE	Cost \$:		696,085
Drilling Days:		7	Well Total Cos	t \$:		696,085
Wellbore:	Original	Wellbore				
Proposed TD (ft):		3000				
Last BOP Test:	1	I5-Mar-19				
Working Interest:						
Sup(s): Virgil Welch, M	lonty Keown	Eng(s):	Rivas	Te	el #:	
	Time Drilling @ 2,587 k	eeping hole	e straight			
Planned Operations:	Continue drilling 8-3/4"	hole to tot	al depth.			
Mngmt Summary:	Time drill 8-3/4" hole fro	om 2,077' to	o 2,227' with full r	eturns, Held Safety meetii	ng, Time drill 8-3	3/4" hole fron



Report Date for Period 13-Mar-19 to 28-Mar-19

	2 Date:	20-Mai	·-19			ne: 78-32 ne: #10031
Operator:	Universit	y of Utah	Daily Cost/Mu	d Cost \$:	0,	
Field:		,	AFE No.	Name	AFE \$	Actual \$
API No:		NA	Non-AFE			714,458
MD / TVD (ft):	2643 /	2638		Totals:	0	714,458
Hole Drilled/Average ROP	P: 98 /	9.8	Well Non-AFE	Cost \$:		714,458
Drilling Days:		8	Well Total Cos	st \$:		714,458
Wellbore:	Original	Wellbore				
Proposed TD (ft):		3000				
Last BOP Test:	1!	5-Mar-19				
Working Interest:						
Sup(s): Virgil Welch, Mor	nty Keown	Eng(s):	Rivas	Tel	#:	
	illing ahead with 8-3/4	- · ·		ntaining hole straight		
	ill 8-3/4" hole to 3,325	-	-	-		
	ne drill 8-3/4" hole fro	m 2,545' t	o 2,617' with 2-4l	K , 450 GPM, 1,000 PSI 45	RPM, Survey o	n bottom @.
Well ID: Forge 78-32	2				Well Nar	ne: 78-32
Report No: 9	Date:	21-Mai	·-19		Rig Nam	ne: #10031
Operator:	Universit	y of Utah	Daily Cost/Mu	d Cost \$:	0,	/ 0
Field:		-	AFE No.	Name	AFE \$	Actual \$
API No:		NA	Non-AFE			753,486
MD / TVD (ft):	2894 /	2889		Totals:	0	753,486
Hole Drilled/Average RO	P: 251 /	10.8	Well Non-AFE	Cost \$:		753,486
Drilling Days:		9	Well Total Cos	st \$:		753,486
	Original	Wellbore				,
Wellbore:	•					
Wellbore: Proposed TD (ft):		3000				
	1	3000 5-Mar-19				
Proposed TD (ft):	1:					
Proposed TD (ft): Last BOP Test: Working Interest:		5-Mar-19	Rivas	Tel	#:	
Proposed TD (ft): Last BOP Test: Working Interest: Sup(s): Virgil Welch, Mor		5-Mar-19 Eng(s) :		-	#:	
Proposed TD (ft): Last BOP Test: Working Interest: Sup(s): Virgil Welch, Mor Current Operations: Re	nty Keown epairing mud pump, D	5-Mar-19 Eng(s): rilled8 3/4'	'to 2923' at 04:30	-		ill to TD with.



Report Date for Period 13-Mar-19 to 28-Mar-19

Report No: 10	3-32 Date:	22-Mai	-10			ne: 78-32 ne: #10031
			Daily Cost/Mud	Coot \$:		
Operator: Field:	University	y or otari	AFE No.	Name	AFE \$	Actual \$
API No:		NIA	Non-AFE	Name	ALE 9	•
	2966 /	NA 2890	NON-AFE	Tatala		768,099
MD / TVD (ft):				Totals	: 0	768,099 768,099
Hole Drilled/Average	ROP: 72 /	8.0	Well Non-AFE C	•		
Drilling Days:	Original	10	Well Total Cost	\$:		768,099
Wellbore:	Original	Wellbore				
Proposed TD (ft):		3000				
Last BOP Test:	1	5-Mar-19				
Working Interest:						
Sup(s): Virgil Welch,	-	Eng(s):			el #:	
Current Operations:	Drilling ahead 8 3/4" hole		05:30 nrs with full	returns		
Planned Operations:	Continue drilling 8 3/4" h					
Mngmt Summary:			3' with 8-20 K WOE	3, 60 RPM, 450 GPM, 10	00 PSI., Full mu	d returns,
Comments:	Last Survey 2973' ; 4.7 (degrees				
Well ID: Forge 78	3-32				Well Nar	ne: 78-32
Report No: 11	Date:	23-Mai	r-19		Rig Nan	ne: #10031
Operator:	University	y of Utah	Daily Cost/Mud	Cost \$:	0	/ C
			AFE No.	Name	AFE \$	Actual \$
Field: API No:		NA	AFE No. Non-AFE	Name	AFE \$	
Field: API No:	3073 /	NA 3067	-	Name Totals	-	786,937
Field: API No: MD / TVD (ft):			-	Totals	-	786,937 786,937
Field:		3067	Non-AFE	Totals	-	786,937 786,937 786,937
Field: API No: MD / TVD (ft): Hole Drilled/Average	ROP: 107 /	3067 4.5	Non-AFE Well Non-AFE C	Totals	-	786,937 786,937 786,937
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days:	ROP: 107 /	3067 4.5 11	Non-AFE Well Non-AFE C	Totals	-	786,937 786,937 786,937
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore:	ROP: 107 / Original	3067 4.5 11 Wellbore	Non-AFE Well Non-AFE C	Totals	-	786,937 786,937 786,937
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft):	ROP: 107 / Original	3067 4.5 11 Wellbore 3000	Non-AFE Well Non-AFE C	Totals	-	786,937 786,937 786,937
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft): Last BOP Test:	ROP: 107 / Original ¹	3067 4.5 11 Wellbore 3000	Non-AFE Well Non-AFE C Well Total Cost	Totals cost \$: \$:	-	Actual \$ 786,937 786,937 786,937 786,937
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft): Last BOP Test: Working Interest:	ROP: 107 / Original ¹	3067 4.5 11 Wellbore 3000 5-Mar-19 Eng(s):	Non-AFE Well Non-AFE C Well Total Cost	Totals cost \$: \$: Te	: 0	786,937 786,937 786,937
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft): Last BOP Test: Working Interest: Sup(s): Virgil Welch, Current Operations:	ROP: 107 / Original 1 Monty Keown	3067 4.5 11 Wellbore 3000 5-Mar-19 Eng(s): a change d	Non-AFE Well Non-AFE C Well Total Cost	Totals cost \$: \$: Te	: 0	786,937 786,937 786,937
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft): Last BOP Test: Working Interest: Sup(s): Virgil Welch,	ROP: 107 / Original 15 Monty Keown Pulling out of hole for bit Change bits, Drill to 3,3	3067 4.5 11 Wellbore 3000 5-Mar-19 Eng(s): : change d	Non-AFE Well Non-AFE C Well Total Cost Rivas lue to hours on bit.	Totals cost \$: \$: Te	: 0	786,937 786,937 786,937



Report Date for Period 13-Mar-19 to 28-Mar-19

Report No: 12	3-32 Date:	24-Mar	-19			me: 78-32 me: #10031
Operator:	Universit		Daily Cost/Mud	Cost \$:		/ 0
Field:		, -	AFE No.	Name	AFE \$	Actual \$
API No:		NA	Non-AFE			810,480
MD / TVD (ft):	3213 /	3208		Tota	ls: 0	
Hole Drilled/Average	ROP: 140 /	12.7	Well Non-AFE	Cost \$:		810,480
Drilling Days:		12	Well Total Cost	\$:		810,480
Wellbore:	Original	Wellbore		•		,
Proposed TD (ft):	5	3000				
Last BOP Test:	1	5-Mar-19				
Working Interest:						
Sup(s): Virgil Welch,	Monty Keown	Eng(s):	Rivas		Tel #:	
Current Operations:	Drilling ahead 8-3/4" hol	• • •				
Planned Operations:	Drill ahead 8-3/4" hole to			clean, POOH, rig up, ru	n 5-1/2" casing w	ith fiber optic
Mngmt Summary:	Drill 8-3/4" hole from 3,0	73' to 3,07	77' with 15K WOE	, 65 RPM, 450 GPM an	d 1,000 PSI, Sur	/ey @ 3,057',
Comments:	Survey at 3,213' 2.5 deg	rees.				
Well ID: Forge 7	3-32				Well Na	me: 78-32
Report No: 13	Date:	25-Mar	·-19		Rig Na	me: #10031
Operator:	Universit		Daily Cost/Mud	Cost \$:	-	/ 0
		-				
Field:			AFE No.	Name	AFE \$	Actual \$
•		NA	AFE No. Non-AFE	Name	AFE \$	•
Field: API No:	3280 /			Name		824,668
Field: API No: MD / TVD (ft):		NA 3275 9.6		Tota		824,668 824,668
Field: API No: MD / TVD (ft): Hole Drilled/Average		3275	Non-AFE	Tota Cost \$:		824,668 824,668 824,668
Field: API No: MD / TVD (ft):	ROP: 67 /	3275 9.6 13	Non-AFE	Tota Cost \$:		824,668 824,668 824,668
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore:	ROP: 67 /	3275 9.6	Non-AFE	Tota Cost \$:		824,668 824,668 824,668
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days:	ROP: 67 / Original	3275 9.6 13 Wellbore	Non-AFE	Tota Cost \$:		824,668 824,668 824,668
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft): Last BOP Test:	ROP: 67 / Original	3275 9.6 13 Wellbore 3000	Non-AFE	Tota Cost \$:		824,668 824,668 824,668
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft): Last BOP Test: Working Interest:	ROP: 67 / Original	3275 9.6 13 Wellbore 3000 5-Mar-19	Non-AFE Well Non-AFE Well Total Cost	Tota Cost \$: : \$:		824,668 824,668 824,668
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft): Last BOP Test: Working Interest: Sup(s): Virgil Welch,	ROP: 67 / Original	3275 9.6 13 Wellbore 3000 5-Mar-19 Eng(s):	Non-AFE Well Non-AFE Well Total Cost	Tota Cost \$: : \$:	ls: 0	824,668 824,668 824,668
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft): Last BOP Test: Working Interest: Sup(s): Virgil Welch, Current Operations:	ROP: 67 / Original 11 Monty Keown Running 5-1/2" K55 cas	3275 9.6 13 Wellbore 3000 5-Mar-19 Eng(s): ing with fik	Non-AFE Well Non-AFE Well Total Cost Rivas	Tota Cost \$: \$: umber 33 at 06:00 hrs.	ls: 0	824,668 824,668 824,668 824,668
Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft): Last BOP Test:	ROP: 67 / Original 1 Monty Keown	3275 9.6 13 Wellbore 3000 5-Mar-19 Eng(s): ing with file n 5-1/2" ca	Non-AFE Well Non-AFE Well Total Cost Rivas per optic on joint masing with fiber op	Tota Cost \$: : \$: umber 33 at 06:00 hrs. tic to setting depth of 3,7	Is: 0 Tel #: 274', cement casi	824,668 824,668 824,668 824,668



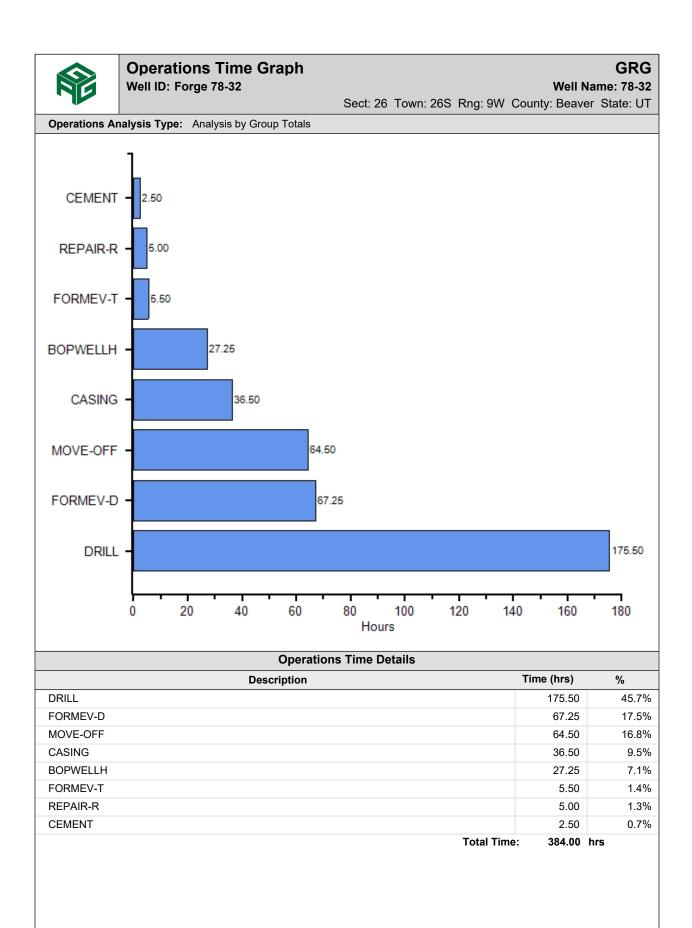
Report Date for Period 13-Mar-19 to 28-Mar-19

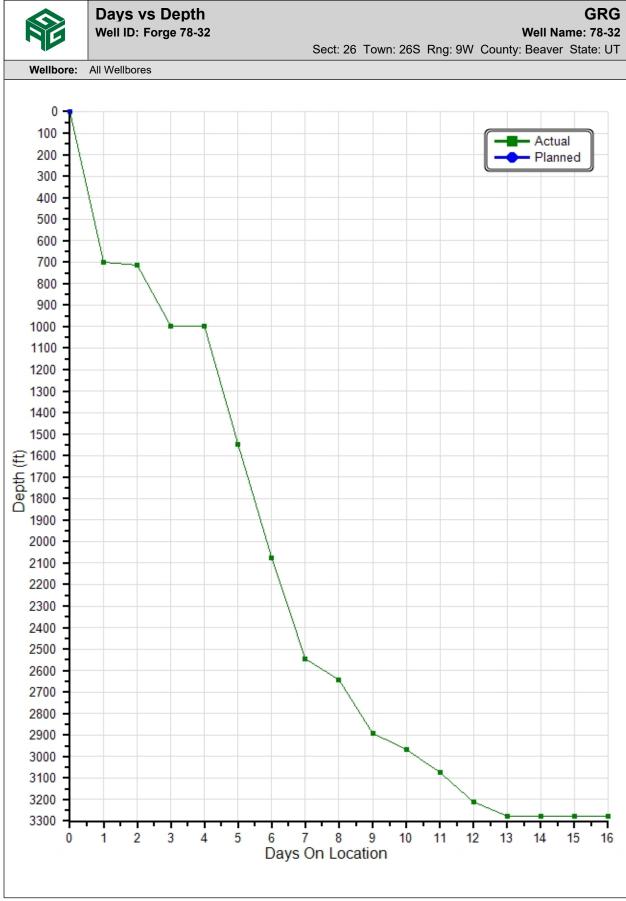
Report No: 14	8-32 Date:	26-Mai	-19			me: 78-32 ne: #10031
Operator:	Universit		Daily Cost/Mud	Cost \$:		
Field:	Universit	y or otari	AFE No.	Name	AFE \$	Actual \$
API No:		NA	Non-AFE	Name		829,061
MD / TVD (ft):	3280 /	3275		Tota	ls: 0	
Hole Drilled/Average		5215	Well Non-AFE		13. 0	829,06
Drilling Days:		14	Well Total Cost	· · ·		829,06
Wellbore:	Original	Wellbore	Well Total Cost	φ.		029,00
Proposed TD (ft):	Onginai	3000				
Last BOP Test:	1	5-Mar-19				
Working Interest:		J-111al - 19				
Sup(s): Virgil Welch,	Monty Koown	Eng(s):	Pivos	·	Tel #:	
Current Operations:	Waiting on cement. Crev				101#.	
Planned Operations:	Rig crews to begin rig de					
	Ran 74 joints (3274.78')			se Casing with float sho	a @ 3 268' float (collar @
Mngmt Summary: Comments:	CIP 18:33 hrs. with full r			-		
				10e 01 5.5 Was 5,200 D	-	me: 78-32
Well ID: Forge 7 Report No: 15	Date:					
	Liate.					
•		27-Mai	-	Cast fr	•	ne: #10031
Operator:	Universit		Daily Cost/Mud		0	/ (
Operator: Field:		y of Utah	Daily Cost/Mud AFE No.	Cost \$: Name	•	/ (Actual \$
Operator: Field: API No:	Universit	y of Utah NA	Daily Cost/Mud	Name	0 AFE \$	/ (Actual \$ 833,454
Operator: Field: API No: MD / TVD (ft):	Universit 3280 /	y of Utah	Daily Cost/Mud AFE No. Non-AFE	Name Tota	0 AFE \$	/ (Actual \$ 833,454 833,454
Operator: Field: API No: MD / TVD (ft): Hole Drilled/Average	Universit 3280 /	y of Utah NA 3275	Daily Cost/Mud AFE No. Non-AFE Well Non-AFE	Name Tota Cost \$:	0 AFE \$	/ ((Actual \$ 833,454 833,454 833,454
Operator: Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days:	Universit 3280 / ROP: 0 /	y of Utah NA 3275 15	Daily Cost/Mud AFE No. Non-AFE	Name Tota Cost \$:	0 AFE \$	/ (Actual \$ 833,454 833,454
Operator: Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore:	Universit 3280 / ROP: 0 /	y of Utah NA 3275 15 Wellbore	Daily Cost/Mud AFE No. Non-AFE Well Non-AFE	Name Tota Cost \$:	0 AFE \$	/ ((Actual \$ 833,454 833,454 833,454
Operator: Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft):	Universit 3280 / ROP: 0 / Original	y of Utah NA 3275 15 Wellbore 3000	Daily Cost/Mud AFE No. Non-AFE Well Non-AFE	Name Tota Cost \$:	0 AFE \$	/ ((Actual \$ 833,454 833,454 833,454
Operator: Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft): Last BOP Test:	Universit 3280 / ROP: 0 / Original	y of Utah NA 3275 15 Wellbore	Daily Cost/Mud AFE No. Non-AFE Well Non-AFE	Name Tota Cost \$:	0 AFE \$	/ ((Actual \$ 833,454 833,454 833,454
Operator: Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft): Last BOP Test: Working Interest:	Universit 3280 / ROP: 0 / Original 1:	y of Utah NA 3275 15 Wellbore 3000 5-Mar-19	Daily Cost/Mud AFE No. Non-AFE Well Non-AFE (Well Total Cost	Name Tota Cost \$: \$:	0 AFE \$ Is: 0	/ ((Actual \$ 833,454 833,454 833,454
Operator: Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft): Last BOP Test: Working Interest: Sup(s): Virgil Welch,	Universit 3280 / ROP: 0 / Original 1 Monty Keown	y of Utah NA 3275 15 Wellbore 3000	Daily Cost/Mud AFE No. Non-AFE Well Non-AFE (Well Total Cost	Name Tota Cost \$: \$:	0 AFE \$	/ ((Actual \$ 833,454 833,454 833,454
Operator: Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft): Last BOP Test: Working Interest: Sup(s): Virgil Welch, Current Operations:	Universit 3280 / ROP: 0 / Original 1: Monty Keown Waiting on Daylight	y of Utah NA 3275 15 Wellbore 3000 5-Mar-19 Eng(s):	Daily Cost/Mud AFE No. Non-AFE Well Non-AFE (Well Total Cost	Name Tota Cost \$: \$:	0 AFE \$ Is: 0	/ ((Actual \$ 833,454 833,454 833,454 833,454
Operator: Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft): Last BOP Test: Working Interest: Sup(s): Virgil Welch, Current Operations: Planned Operations:	Universit 3280 / ROP: 0 / Original 1: Monty Keown Waiting on Daylight Lay down rig, complete	y of Utah NA 3275 15 Wellbore 3000 5-Mar-19 Eng(s): rig down, 1	Daily Cost/Mud AFE No. Non-AFE Well Non-AFE Well Total Cost Rivas	Name Tota Cost \$: \$: equipment to staging an	0 AFE \$ Is: 0 Tel #: rea. Install well he	/ ((Actual \$ 833,454 833,454 833,454 833,454
Operator: Field: API No: MD / TVD (ft): Hole Drilled/Average Drilling Days: Wellbore: Proposed TD (ft):	Universit 3280 / ROP: 0 / Original 1: Monty Keown Waiting on Daylight	y of Utah NA 3275 15 Wellbore 3000 5-Mar-19 Eng(s): rig down, f	Daily Cost/Mud AFE No. Non-AFE Well Non-AFE Well Total Cost Well Total Cost	Name Tota Cost \$: \$: equipment to staging and al telemetry, installation	0 AFE \$ Is: 0 Tel #: rea. Install well he ongoing with mo	/ ((Actual \$ 833,454 833,454 833,454 833,454



Report Date for Period 13-Mar-19 to 28-Mar-19

Well ID: Forge 78	-32				Well Nar	ne: 78-32
Report No: 16	Date:	28-Mar	·-19		Rig Nam	ne: #10031
Operator:	Universit	ty of Utah	Daily Cost/Mud C	ost \$:	0 /	/ 0
Field:			AFE No.	Name	AFE \$	Actual \$
API No:		NA	Non-AFE			837,847
MD / TVD (ft):	3280 /	3275		Totals:	0	837,847
Hole Drilled/Average R	ROP: 0 /		Well Non-AFE Co	st \$:		837,847
Drilling Days:		16	Well Total Cost \$:	-		837,847
Wellbore:	Original	Wellbore				
Proposed TD (ft):		3000				
Last BOP Test:	1	5-Mar-19				
Working Interest:						
Sup(s): Monty Keown,	Virgil Welch	Eng(s):	Rivas	Tel	#:	
Current Operations:	Waiting on daylight at 0	6:00 hrs				
Planned Operations:	Continue rig equipment	removal fr	om 78-32 well pad. \	Weld production flange t	to 5-1/2" casing	install
Mngmt Summary:	Crews continue to rig do	own equipr	ment, move drill rig fr	rom site to staging area,	load out mud p	ump,
Comments:	NOTE: Shoe of 5.5" was	s 3,268' be	low ground level, Flo	oat Collar was 2' long fro	m 3,234-3,236	, Top of





Printed: 07:39 30-Apr-19

OL Outon Interf Open Interf Open Interf Open Interf		Bit Si well ID	Bit Summary R Well ID: Forge 78-32	Bit Summary Report well ID: Forge 78-32	t									Sec	Sect: 26 Town: 26S	Town		Well Na Rng: 9W County: Beaver	County	GRG Well Name: 78-32 : Beaver State: UT	GRG me: 78-32 State: UT	GRG : 78-32 ate: UT
Normality Normality <t< th=""><th>Run o No Diam</th><th></th><th>Model</th><th>Serial No</th><th></th><th>- 1/32 in</th><th>F</th><th></th><th>ate/Time In</th><th>n Dep</th><th>th - ft Out</th><th>Hole Made</th><th></th><th>OP WC</th><th></th><th></th><th></th><th></th><th>Grad ajor Loc</th><th>ing : Brg Gge</th><th>Ğ</th><th>Pull</th></t<>	Run o No Diam		Model	Serial No		- 1/32 in	F		ate/Time In	n Dep	th - ft Out	Hole Made		OP WC					Grad ajor Loc	ing : Brg Gge	Ğ	Pull
Bit (1007102 20 20 20 20 20 100 100 40 400 40	Well ID: F	orge 78-3:	0																	Well Na	me: 7	8-32
Report No. 1 Due 3,4Ma-19 551 300 65 40 701 47 P P 656164 X-220225 Z1 Z0 Z1 L L L Z L Z <td>-</td> <td></td> <td>3BK</td> <td>10070122</td> <td>20 20 20 20</td> <td></td> <td>-</td> <td>841</td> <td>Mar-19 12:00</td> <td>69</td> <td>716</td> <td>647</td> <td></td> <td></td> <td>00</td> <td>4</td> <td></td> <td>-</td> <td>-</td> <td></td> <td></td> <td></td>	-		3BK	10070122	20 20 20 20		-	841	Mar-19 12:00	69	716	647			00	4		-	-			
Reportion: 2 Dee: 1448-19 700 75 11 1404 7 7 700 73 7 701 73 7 700 73 7 700 73 7 700 73 7 700 73 7 700 73 70 73 70 73 70 73 70 73 70 73 70 73 700 73 700 73 700 73 700 73 700 73 700 73 700 73 700 73 700 73 700 73 700 700 73 700 700 73 700 73 700 73 700 73 700 <td></td> <td></td> <td></td> <td></td> <td></td> <td>Re</td> <td>port No:</td> <td>~</td> <td></td> <td>3-Mar-19</td> <td></td> <td>631</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>78.</td> <td></td> <td></td> <td>7.9</td>						Re	port No:	~		3-Mar-19		631							78.			7.9
Ge32 weil Pulled out formaint Tue Tu						Re	port No:	2		4-Mar-19		16							78.	٦.		7.9
66.32 well Plated out for with flow teat. Report No: 3 Date: 5-Mar-19 234 26 0.0 70 450 830 Met veic: 734 P. Drop: 44 Report No: 3 Date: 5-Mar-19 234 3 00 70 450 830 Met veic: 734 P. Drop: 44 Report No: 4 Date: 15-Mar-19 550 12 41 450 40 70 73 4 73 74	~		DS616M AC	:1 A220225	20 20	20		841 15-	Mar-19 18:00	716	1000	284	œ					~	-		ON 0	OTH
Report No: 3 Date: 15-Mar-19 284 123 300 70 450 880 at Vete: 78.4 P. Drop: 44 Report No: 4 Date: 16-Mar-19 234 30 911 400 70 450 880 at Vete: 78.4 P. Drop: 44 Report No: 5 Date: 16-Mar-19 500 2617 1617 64.0 250 3 NO A 260 3 A P. Drop: 44 Report No: 5 Date: 17-Mar-19 550 125 440 450 800 Jet Vet: 78.4 P. Drop: 44 Report No: 5 Date: 21-Mar-19 520 30 101 1000 55 450 920 Jet Vet: 78.4 P. Drop: 450 Report No: 0 Date: 21-Mar-19 521 320 301 12 240 920 Jet Vet: 78.4 P. D	it Comments: Us	sed from 68-32																				
Image: Interview Image: Interview<	it Run Comment	s: Used bit fron	n 68-32 wel	I Pulled out for	r airlift flow test.																	
Image: region final matrix for a section for a sectin for a sectin for a section for a section for a sectin for a secti						Re	port No:	e		5-Mar-19		284							78.			8.4
Image: 1 1<						Re	port No:	4		6-Mar-19		234							78.			8.4
Image:	2		DS616M AC	:1A220225	20 20 20 20		1.	841 16-	Mar-19 21:00	1000	2617	1617		24.5				ę				ЫM
Image: Inclusion inclusin inclusion inclusion inclusion inclusi						Re	port No:	4		6-Mar-19								Jet Vel:		P. Drop		
Report No. 6 Date: 8-Mar-19 - 2-0 3-1 4-0 6-0 9-0 7-3 4-0 7-3 4-0 7-0 7-3 4-0 7-3 4-0 7-0 7-3 4-0 7-3 4-0 7-3 4-0 7-3 <						Re	port No:	5		7-Mar-19		550							78.			49
Introme Report No: 7 Date: 9.44:1 5 4.5 4.5 6.5 6.4 6.5 6.4 6.5 6.4 6.5 6.4 6.5 6.4 6.5 6.4 6.5 6.4 6.5 6.4 6.5 6.4 6.5 6.4 6.5 6.4 6.5 6.4 6.5 6.4 6.5						Re	port No:	9		8-Mar-19		527							78.			49
Int-cone Teport No. Report No. Date: 20-Mar-19 26 75 4 45 450 920 4r/veit: 784 P. Drop: 56 Int-cone Tot:2555 16 6 0 0 0 263 20-Mar-1921:00 2611 202 2 3 46 920 2 3 1 7 4 5 1 <td></td> <td></td> <td></td> <td></td> <td></td> <td>Re</td> <td>port No:</td> <td>7</td> <td></td> <td>9-Mar-19</td> <td></td> <td>468</td> <td></td> <td>27.3</td> <td></td> <td></td> <td></td> <td></td> <td>78.</td> <td></td> <td></td> <td>8.4</td>						Re	port No:	7		9-Mar-19		468		27.3					78.			8.4
Int-one IO2256 I6 I O.589 O.MAR-1921:00 Z617 Z <thz< th=""> Z Z <t< td=""><td></td><td></td><td></td><td></td><td></td><td>Re</td><td>port No:</td><td>8</td><td></td><td>0-Mar-19</td><td></td><td>26</td><td></td><td>24.5</td><td></td><td></td><td></td><td></td><td>78.</td><td></td><td></td><td>0.6</td></t<></thz<>						Re	port No:	8		0-Mar-19		26		24.5					78.			0.6
Report No: 8 Date: 2-Mar-19 72 2.5 2.8 7	~		ri-cone	102255	16		0	589 20-	Mar-19 21:00	2617	2923	306						2		5		뜌
Report No: 0 Date: 21-Mar-19 251 230 127 2000 55 450 245.1 P. Droo: 430 Report No: 10 Date: 22-Mar-19 307 154 300 51 15 65 450 20 17 7 7 7 47 49 ITI come XYZ 20 20 20 20 20 20 20 21 7 7 49 45 96 00 66 450 20						Re	port No:	8		0-Mar-19		72		28.8		4			245.			4.4
Image:						Re	port No:	6		1-Mar-19		251							245.			4.4
TR1 come XYZ 20 20 20 20 7 7 MT A 7 4 F Report No: 10 Date: 22-Mar-19 30.7 154 30.0 61 450 920 Let Vet: 156 P. Drop: 20 Report No: 10 Date: 22-Mar-19 7 41 51 65 450 920 Let Vet: 156 P. Drop: 20 CX30 Z						Re	port No:	10		2-Mar-19		29							245.			4.4
Report No: 10 Date: 22-Mar-19 43 45 96 450	~		rRI cone	ZYX	20			920 22-	Mar-19 13:00	2923	3077	154	30.0	5.1				7	-			R
Report No: 11 Date: 23-Mar-19 107 24.0 5.3 15 65 450 9.20 Jet Vei: 156.9 P. Drop: 202 6X30 20 20 20 20 20 20 9.20 Jet Vei: 156.9 P. Drop: 202 6X30 20 20 20 20 20 20 12 22 65 450 9.20 Jet Vei: 156.9 P. Drop: 202 10 hole with bottom stabilizer 330' 20 203 17.0 12.2 22 65 450 9.20 Jet Vei: 166.9 P. Drop: 203 11 hole with bottom stabilizer 330' 12 12 12 12 2 65 450 9.20 Jet Vei: 166.9 P. Drop: 203 12 2 14.0 10.0 14.0 10.0 15 26 450 9.20 Jet Vei: 166.9 P. Drop: 203 13 14.0 10.0 14.0 10.0 15 20 Jet Vei: 166.9 P. Drop: <td></td> <td></td> <td></td> <td></td> <td></td> <td>Re</td> <td>port No:</td> <td>10</td> <td></td> <td>2-Mar-19</td> <td></td> <td>43</td> <td>4.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>156.</td> <td></td> <td></td> <td>2.5</td>						Re	port No:	10		2-Mar-19		43	4.5						156.			2.5
GX30 Z0 Z0 Z0 Z0 Let Vei: T500 G5 450 20 Let Vei: 156.9 P. Drop: Z02 GX30 Z0						Re	port No:	7		3-Mar-19		107	24.0	5.3					156.			2.5
GX30 20 20 20 20 20 20 20 9.20						Re	port No:	12		4-Mar-19		4	1.5						156.			2.5
In hole with bottom stabilizer 3280' Report No: 12 Date: 24-Mar-19 140 10.0 65 450 9.30 Jet Vel: 156.9 P. Drop: Report No: 13 Date: 25-Mar-19 67 7.0 12.2 22 65 450 9.20 Jet Vel: 156.9 P. Drop:	5 1 8.75		3X30		20 20 20		0	920 24-	Mar-19 08:30	3077	3280	203		12.2				0				H
Report No: 12 Date: 24-Mar-19 140 10.0 65 450 9.30 Jet Vel: 156.9 P. Drop: Report No: 13 Date: 25-Mar-19 67 7.0 12.2 22 65 450 9.20 Jet Vel: 156.9 P. Drop:	it Comments: Lc	st in Hole																				
12 Date: 24-Mar-19 140 10.0 14.0 20000 65 450 9.30 Jet Vel: 156.9 P. Drop: 13 Date: 25-Mar-19 67 7.0 12.2 22 65 450 9.20 Jet Vel: 156.9 P. Drop:	it Run Comment	s: Bit lost in ho	le with bottc	om stabilizer 3.	280'																	
13 Date: 25-Mar-19 67 7.0 12.2 22 65 450 9.20 Jet Vel: 156.9 P. Drop:						Re	port No:	12		4-Mar-19		140							156.			4.7
						Re	port No:	13		5-Mar-19		67		12.2					156.			2.5
								_						_	_	_	_	_		_		

RIMBase 7.4.89.0

Printed: 09:13 30-Apr-19

Page: 1 of 1

	BHA Graphical Re Well ID: Forge 78-32		: 26 Town: 26S R	Well ng: 9W County: Bea	GRG Name: 78-32 over State: UT
BHA No: 2	BHA Length (ft):	453.56 Date In:	15-Mar-19 18:00	Depth In (ft):	716
		Date Out	16-Mar-19 00:00	Depth Out (ft):	1,000
	XO, Length: 1 ft 5.000 ins Top Thread 3.5I S/No: Rig 454 ft from top t				
	DC, 15 joints, Len 5.000 ins Top Thread 4.51 15 DCs. S/No: Rig 452 ft from top t	F			
	BS, Length: 1 ft				
	5.000 ins Top Thread 4.5I S/No: Rig 2 ft from top to B				
	BIT, Length: 1 ft 8.750 ins Top Thread 4.50 PDC S/No: A220225 1 ft from top to B				

		BHA Graphical Rep Well ID: Forge 78-32	ort	Sect:	26 Town: 26S R	Well ng: 9W County: Bea	GRG Name: 78-32 ver State: UT
BHA No:	3	BHA Length (ft):	461.31	Date In:	16-Mar-19 21:00	Depth In (ft):	1,000
				Date Out:	17-Mar-19 12:30	Depth Out (ft):	700
		XO, Length: 1 ft 5.000 ins Top Thread 3.5IF S/No: Rig					
		DC, 13 joints, Length: 3 5.000 ins Top Thread 4.5IF 15 DCs. S/No: Rig 460 ft from top to Bit	90 ft				
		STAB, Length: 4 ft 5.000 ins S/No: DHS 70 ft from top to Bit					
		DC, Length: 30 ft 5.000 ins Top Thread 4.5IF S/No: Rig 66 ft from top to Bit					
		STAB, Length: 4 ft 5.000 ins Top Thread 4.5IF S/No: DHS					
		DC, Length: 30 ft 5.000 ins Top Thread 4.5IF S/No: Rig 32 ft from top to Bit					
		BS, Length: 1 ft 5.000 ins Top Thread 4.5IF S/No: Rig					
	ļ	BIT, Length: 1 ft 8.750 ins Top Thread 4.5REG PDC S/No: A220225 1 ft from top to Bit					

		BHA Graphical Re Well ID: Forge 78-32	port	Sect:	26 Town: 26S R	Well ng: 9W County: Beav	GRG Name: 78-32 rer State: UT
BHA No:	4	BHA Length (ft):	464.96	Date In:	17-Mar-19 03:00	Depth In (ft):	1,000
				Date Out:	20-Mar-19 13:00	Depth Out (ft):	2,61
		XO, Length: 1 ft 5.000 ins Top Thread 3.5IF S/No: Rig					
		DC, 13 joints, Length: 5.000 ins Top Thread 4.5IF 15 DCs. S/No: Rig 464 ft from top to Bit					
		STAB, Length: 4 ft 5.000 ins S/No: DHS 74 ft from top to Bit					
		DC, Length: 30 ft 5.000 ins Top Thread 4.5IF S/No: Rig 70 ft from top to Bit					
		STAB, Length: 4 ft 5.000 ins Top Thread 4.5IF S/No: DHS					
		DC, Length: 30 ft 5.000 ins Top Thread 4.5IF S/No: Rig 36 ft from top to Bit					
		STAB, Length: 5 ft 5.000 ins Top Thread 4.5IF S/No: DHS					
	ļ	BIT, Length: 1 ft 8.750 ins Top Thread 4.5REG PDC S/No: A220225 1 ft from top to Bit					

		BHA Graphical Re Well ID: Forge 78-32	port	Sect:	26 Town: 26S R	Well ng: 9W County: Beav	GRG Name: 78-32 rer State: UT
BHA No:	5	BHA Length (ft):	464.96	Date In:	20-Mar-19 14:00	Depth In (ft):	2,61
				Date Out:	22-Mar-19 13:00	Depth Out (ft):	2,923
		XO, Length: 1 ft 5.000 ins Top Thread 3.5IF S/No: Rig					
	-	DC, 13 joints, Length: 5.000 ins Top Thread 4.5IF 15 DCs. S/No: Rig 464 ft from top to Bit					
		STAB, Length: 4 ft 5.000 ins S/No: DHS 74 ft from top to Bit					
		DC, Length: 30 ft 5.000 ins Top Thread 4.5IF S/No: Rig 70 ft from top to Bit					
		STAB, Length: 4 ft 5.000 ins Top Thread 4.5IF S/No: DHS					
		DC, Length: 30 ft 5.000 ins Top Thread 4.5IF S/No: Rig 36 ft from top to Bit					
		STAB, Length: 5 ft 5.000 ins Top Thread 4.5IF S/No: DHS					
	ļ	BIT, Length: 1 ft 8.750 ins Top Thread 4.5REG tri cone button S/No: 102255 1 ft from top to Bit					
							Page: 1 of

		BHA Graphical Re Well ID: Forge 78-32	port	Sect:	26 Town: 26S R	Well ng: 9W County: Beav	GRG Name: 78-32 ver State: UT
BHA No:	6	BHA Length (ft):	464.96	Date In:	22-Mar-19 14:00	Depth In (ft):	2,923
				Date Out:	24-Mar-19 07:30	Depth Out (ft):	3,07
		XO, Length: 1 ft 5.000 ins Top Thread 3.5IF S/No: Rig					
		DC, 13 joints, Length: 5.000 ins Top Thread 4.5IF 15 DCs. S/No: Rig 464 ft from top to Bit					
		STAB, Length: 4 ft 5.000 ins S/No: DHS 74 ft from top to Bit					
		DC, Length: 30 ft 5.000 ins Top Thread 4.5IF S/No: Rig 70 ft from top to Bit					
		STAB, Length: 4 ft 5.000 ins Top Thread 4.5IF S/No: DHS					
		DC, Length: 30 ft 5.000 ins Top Thread 4.5IF S/No: Rig 36 ft from top to Bit					
		STAB, Length: 5 ft 5.000 ins Top Thread 4.5IF S/No: DHS					
	ļ	BIT, Length: 1 ft 8.750 ins Top Thread 4.5REG tri cone button S/No: XYZ 1 ft from top to Bit					
							Page: 1 of

	BHA Graphical R Well ID: Forge 78-32	eport	Sect:	26 Town: 26S R	Well ng: 9W County: Beav	GRG Name: 78-32 ver State: UT
BHA No:	7 BHA Length (ft):	464.96	Date In:	24-Mar-19 08:30	Depth In (ft):	3,07
			Date Out:	25-Mar-19 15:30	Depth Out (ft):	3,28
	XO, Length: 1 ft 5.000 ins Top Thread 3.5IF S/No: Rig					
	DC, 13 joints, Lengt 5.000 ins Top Thread 4.5IF 15 DCs. S/No: Rig 464 ft from top to B					
	STAB, Length: 4 ft 5.000 ins S/No: DHS 74 ft from top to Bi	t				
	DC, Length: 30 ft 5.000 ins Top Thread 4.5IF S/No: Rig 70 ft from top to Bi	t				
	STAB, Length: 4 ft 5.000 ins Top Thread 4.5IF S/No: DHS					
	DC, Length: 30 ft 5.000 ins Top Thread 4.5IF S/No: Rig 36 ft from top to Bi	t				
	STAB, Length: 5 ft 5.000 ins Top Thread 4.5IF Left in hole					
	BIT, Length: 1 ft 8.750 ins Top Thread 4.5RE tri cone button, Let S/No: ABC 1 ft from top to Bit	ft in hole				
Printed: 07:40	20 Apr 10		MBase 7.4.8	20.0		Page: 1 of



Casing Information Report Well ID: Forge 78-32

Well Name: 78-32

Sect: 26 Town: 26S Rng: 9W County: Beaver State: UT

	Casing	nformation						
Run Date/Time:	14-Mar-19 13:30							
		Leak Off Test (lbs/gal):						
Well Section:	SURF	String Type:		FULL				
String Top MD (ft):	-2.00	String Top TVD (ft):		0.00				
Casing Shoe MD (ft):	Casing Shoe TVD (ft):		704.00					
String Nominal OD (ins):9.625String Nominal ID (ins):8								
Bit Diameter (ins):	12.250	Avg. Open Hole Diam. (ins):		12.250				
Centralizers: No:	8	Manufacturer/Type:		Bow				
Depths:	690, 650, 551, 475, 396, 319	, 239, 162						
Hanger Type:		Manufacturer:						
Comments: Transfer	red from Casing Tally Detail on 15	-Mar-19 05:17						
	String Com	ponent Details						
No. Items Item Type	Length (ft) O.D.(ins) I.D. (ns) Weight (Ibs) Grade	Connection	Torque (ft lbs)				
16 JOINT	624.63 9.625 8.	921 36.0 J-55	LTC					

NO. Items	пенттуре	Length (It)	0.0.(115)	1.D. (IIIS)	weight (ibs)	Graue	Connection	Torque (it ibs)
16	JOINT	624.63	9.625	8.921	36.0	J-55	LTC	
1	FLOAT	2.50	9.625	8.921	36.0	J-55	LTC	
2	JOINT	76.84	9.625	8.921	36.0	J-55	LTC	
1	SHOE	2.50	9.625	8.921	36.0	J-55	LTC	
Total Iter	ms : 20	706.47						



Casing Information Report

Well ID: Forge 78-32

GRG

Well Name: 78-32

Sect: 26 Town: 26S Rng: 9W County: Beaver State: UT

Casing I	nformation
Run Date/Time: 26-Mar-19 16:00	
	Leak Off Test (lbs/gal):
Well Section: PROD	String Type: FULL
String Top MD (ft): -6.00	String Top TVD (ft):
Casing Shoe MD (ft): 3,268.78	Casing Shoe TVD (ft):
String Nominal OD (ins): 5.500	String Nominal ID (ins): 5.000
Bit Diameter (ins): 8.750	Avg. Open Hole Diam. (ins): 8.750
Centralizers: No: 74	Manufacturer/Type: BOW
Depths: 1 on each joint of casing at r	nid body
Hanger Type:	Manufacturer:
Comments: Transferred from Casing Tally Detail on 27	-Mar-19 04:25
String Com	ponent Details
No. Items Item Type Length (ft) O.D.(ins) I.D. (ins) Weight (lbs) Grade Connection Torque (ft lbs)

NO. Items	item Type	Length (It)	O.D.(Ins)	1.D. (INS)	weight (ibs)	Grade	Connection	rorque (it ibs)
1	SHOE	2.00	5.500	5.000	17.0	OTHER	BUTT	
1	JOINT	30.00	5.500	5.000	17.0	K-55	BUTT	
1	FLOAT	2.00	5.500	5.000	17.0	OTHER	BUTT	
73	JOINT	3,240.78	5.500	5.000	17.0	K-55	BUTT	
Total Iter	ms: 76	3,274.78						



Directional Survey Report Well ID: Forge 78-32

GRG Well Name: 78-32

Sect: 26 Town: 26S Rng: 9W County: Beaver State: UT

							0	5	
Survey Type	Meas. Depth (ft)	Inc. (deg)	Azimuth (deg)	TVD (ft)	Coord N-S (ft)	inates E-W (ft)	Closure (ft)	Vertical Section (ft)	Dog Leg Severity (deg/100)
Wellbor	e: Origina	al Wellbo	re	Plane of Ve	ertical Sectio	n: 0			
** Tieln	300.0	0.90	0	300.0	0.0	0.0	0.0	0.0	
MSS	500.0	0.90	0	500.0	3.1	0.0	3.1	3.1	0.000
MSS	700.0	1.80	0	699.9	7.9	0.0	7.9	7.9	0.450
MSS	980.0	4.00	0	979.5	22.0	0.0	22.0	22.0	0.786
MSS	1,150.0	3.90	0	1,149.1	33.7	0.0	33.7	33.7	0.059
MSS	1,267.0	3.70	0	1,265.9	41.5	0.0	41.5	41.5	0.171
MSS	1,387.0	4.00	0	1,385.6	49.5	0.0	49.5	49.5	0.250
MSS	1,417.0	4.00	0	1,415.5	51.6	0.0	51.6	51.6	0.000
MSS	1,537.0	4.00	0	1,535.2	60.0	0.0	60.0	60.0	0.000
MSS	1,550.0	4.00	0	1,548.2	60.9	0.0	60.9	60.9	0.000
MSS	1,650.0	4.10	0	1,648.0	68.0	0.0	68.0	68.0	0.100
MSS	1,747.0	3.70	0	1,744.7	74.6	0.0	74.6	74.6	0.412
MSS	2,400.0	4.70	0	2,396.0	122.4	0.0	122.4	122.4	0.153
MSS	2,500.0	4.50	0	2,495.7	130.4	0.0	130.4	130.4	0.200
MSS	2,617.0	4.50	0	2,612.3	139.6	0.0	139.6	139.6	0.000
MSS	2,640.0	4.30	0	2,635.2	141.4	0.0	141.4	141.4	0.870
MSS	2,763.0	4.00	0	2,757.9	150.3	0.0	150.3	150.3	0.244
MSS	2,880.0	4.20	0	2,874.6	158.6	0.0	158.6	158.6	0.171
MSS	3,063.0	2.00	0	3,057.3	168.5	0.0	168.5	168.5	1.202
MSS	3,213.0	2.50	0	3,207.2	174.4	0.0	174.4	174.4	0.333

Calculations using Minimum Curvature Method

				(
Company: L	University of Utah	ltah		
Well: 7	78-32			
	None			
y:	Beaver	State:	Utah	
CBL	CBL VDL			
Cen	Cement Evaluation			
_	Gamma Ray - CCL Log	L Log		
			Elev.: K.B. G.L.	5536.00 ft
			D.F.	
Nc 78 Ur tion:	Permanent Datum:	Ground Level	Elev :	5536.00 f
n: ny: Loca	Log Measured From: Drilling Measured From:	m: Ground Level	0.00 1	above Perm.Dawm
County Tield: ocatio Vell: Compa	API Serial No.	Section:	Longitude:	Latitude:
aging Date	17-Apr-2019	2019		,
Run Number	ONE .			
Depth Driller	3272.00 ft	0 ft		
Schlumberger Depth	3228.00 ft	0 ft		
Bottom Log Interval	3228.00 ft	0 ft		
Casing Fluid Type	Water			
Salinity				
Density	8.4 lbm/gal	/gal		
Fluid Level	2 8.00 ft			
BIT/CASING/TUBING STRING				
From	o. / 3 III 0.00 ft			
То	3228.00 ft	0 ft		
Casing/Tubing Size	5.5 in			
Weight	17 lbm/ft	ft		
Grade	N/A			
From	0.00 ft			
10 Max Departed Temperatura				
I onger on Bottom	3 226.82 degr Time 17-Anr-2019	2019 11.27.00		
Locati	i			
	Alan Moreno	oreno		
Witnessed By	Virgil Welch	/elch		

Disclaimer

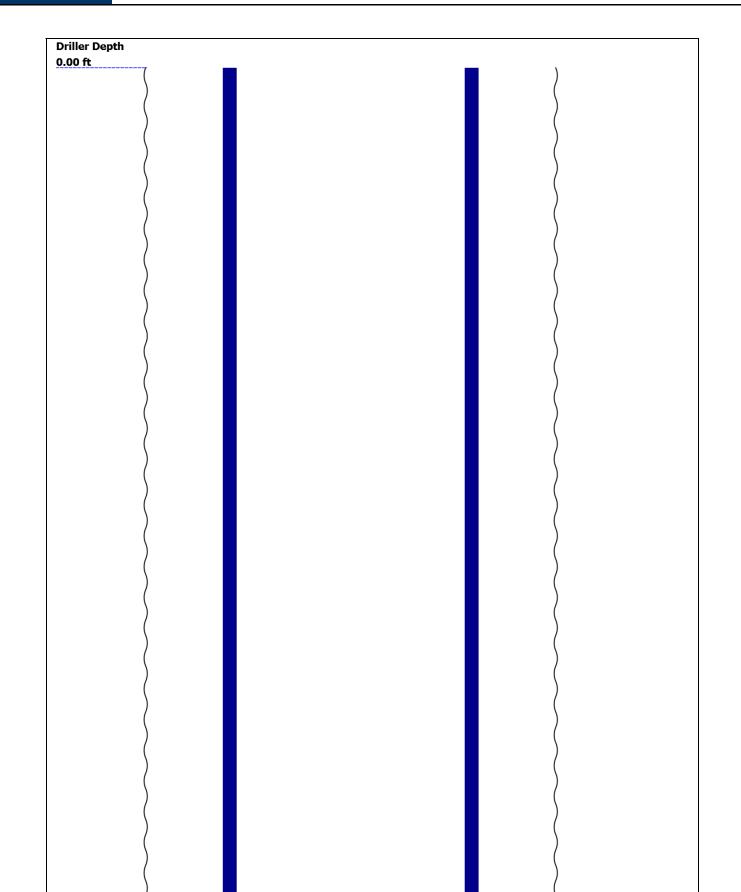
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

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- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Well Sketch
- 5. Borehole Size/Casing/Tubing Record
- 6. Remarks and Equipment Summary
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- 8. ONE 5 Inch Main Pass
 - 8.1 Integration Summary
 - 8.2 Software Version
 - 8.3 Composite Summary
 - $8.4\ \mbox{Log}$ (Sonic CBL with VDL)
 - 8.5 Parameter Listing
- 9. ONE 2 Inch Main Pass
 - 9.1 Integration Summary
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 - 9.3 Composite Summary

9.4 Log (Sonic CBL with VDL)
9.5 Parameter Listing
10. ONE 5 Inch Repeat Analysis
10.1 Composite Summary
10.2 Log (Sonic CBL with VDL RA)
11. Tail

Well Sketch





				,		
Borehole Size/Casing	g/Tubing Re	cord				
Bit		I				
Bit Size (in)	8.75	1				
Top Driller (ft)	0	1				
Top Logger (ft)	0					++
Bottom Driller (ft)	3272					
Bottom Logger (ft)	3228					
Casing						
Size (in)	5.5	1				
Weight (lbm/ft)	17	1				
Inner Diameter (in)	4.892	1				
Grade	N/A	1				
Top Driller (ft)	0	1				
Top Logger (ft)	0	1				
Bottom Driller (ft)	3272	1				
Bottom Logger (ft)	3272	1				
				·	·	/

Remarks and Equipment Summary

	ONE: T	oolstring		ONE: Remarks
Equip name	Length	MP name	Offset	Toolstring ran as per tool sketch.
LEH-QT LEH-QT	36.58	İ		DSLT centralized with two 3 5/8 GEMCOS and one 3 3/8 GEMCO
				Max Recorded Temperature 226.82 deg F @ 2950'
CAL-YA:213 CAL-YA:213	33.1		22.24	Main log from 10' to TD.
		····· - CCL	32.31	Repeat pass from 3000' to 3200'
				Thank you for using Schlumberger!
DTC-H:9486 ECH-KC DTC-H:9486	29.6	CTEM HV	28.7 0.00	
		TelStatus ToolStatus	26.6 26.6	
SGT-N:9747 SGH-K SGC-TB:9747 SGD-TAA	26.6	GR	25.68	
		• 1 •		
DSLT-H:8049	21.1			

CBL 3ft Upper-Nu VDL 5ft	7.62			
— Delta-T	6.25			
澤				
Lower-Fa	ar 4.88			
BNS-STD 0.46 SLS-E Head Ter on TOOL_ZEF	0.46 nsi			
Lengths are in ft Maximum Outer Diameter = 6.250 Line: Sensor Location, Value: Gating C All measurements are relative to TOOL_	Offset			
Depth Summary				
	ONE			
Depth Measuring Device	1	I	I	
	IDW-B			
Serial Number				
Calibration Date				
Calibrator Serial Number				

	ONE	
th Measuring Device		

Depth Measuring Device		
Туре	IDW-B	
Serial Number		
Calibration Date		
Calibrator Serial Number		
Calibration Cable Type		
Wheel Correction 1	0	
Wheel Correction 2	0	

Tension Device

Туре	CMTD-B/A	
Serial Number		
Calibration Date		
Calibrator Serial Number		
Number of Calibration Points	0	

Logging Cable

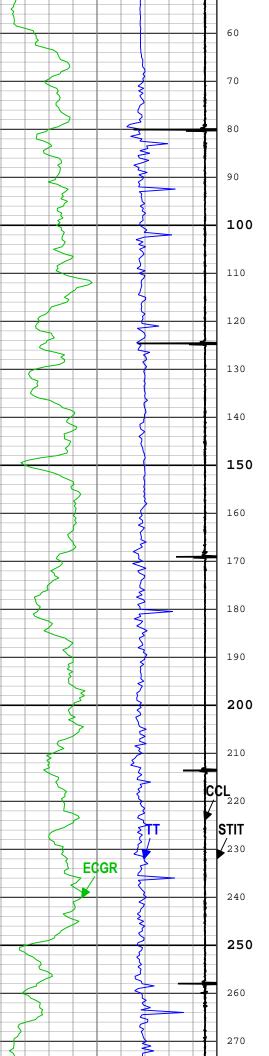
		-	-
Туре	7-46NT-XS		
Serial Number			
Length	24000.00 ft		
Conveyance Type	Wireline		

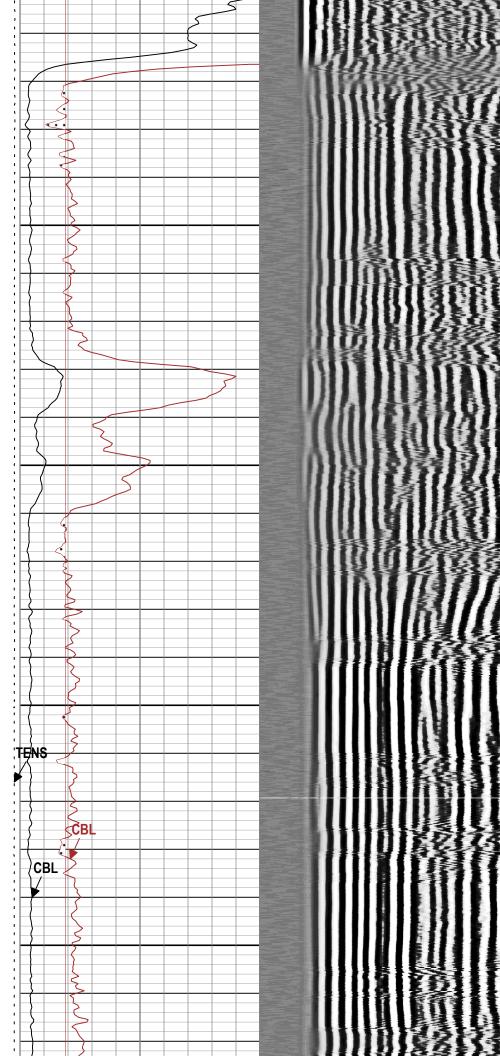
Conveyance Type	wirenne							
Rig Type	Land							
ONE:Depth Control Paramete	rs	Depth Control Remarks						
Log Sequence	First Log In the Well	All Schlumberger depth control procedures followed.						
Rig Up Length At Surface		IDw used as primary depth control device.						
Rig Up Length At Bottom		Z-Chart used as secondary depth control device.						
Rig Up Length Correction								
Stretch Correction								
Tool Zero Check At Surface								
ONE								

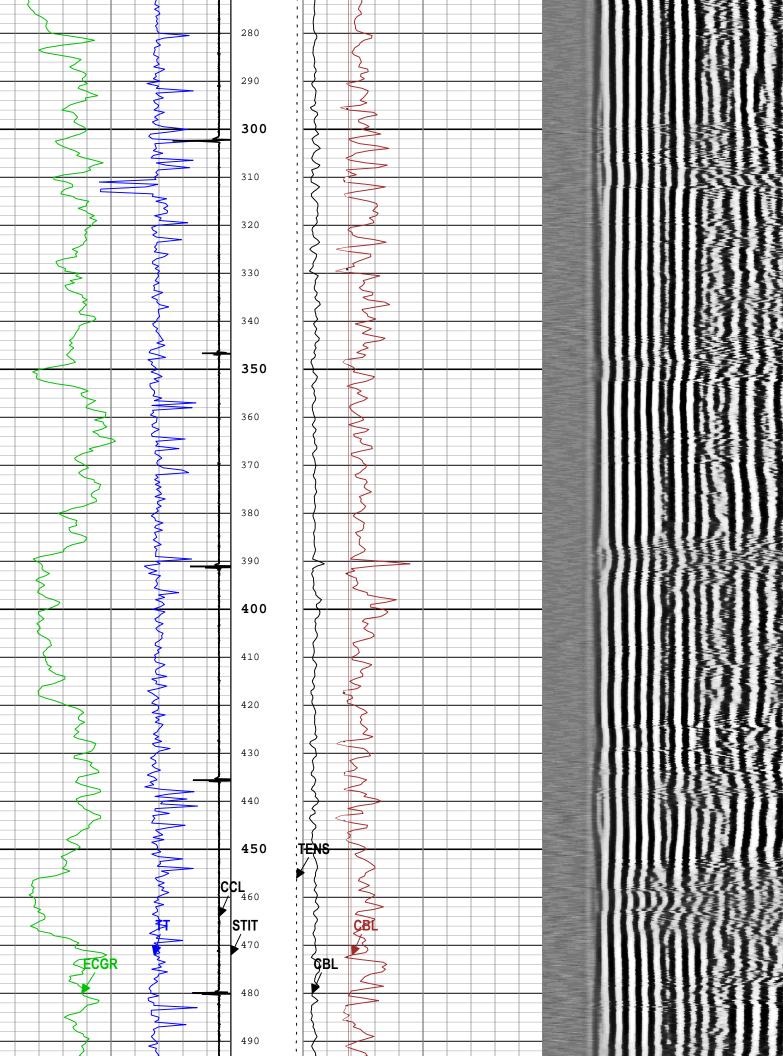
5 Inch Main Pass Software Version Acquisition System Version Maxwell 2018 SP2 8.2.104493.3100 Pass Summary

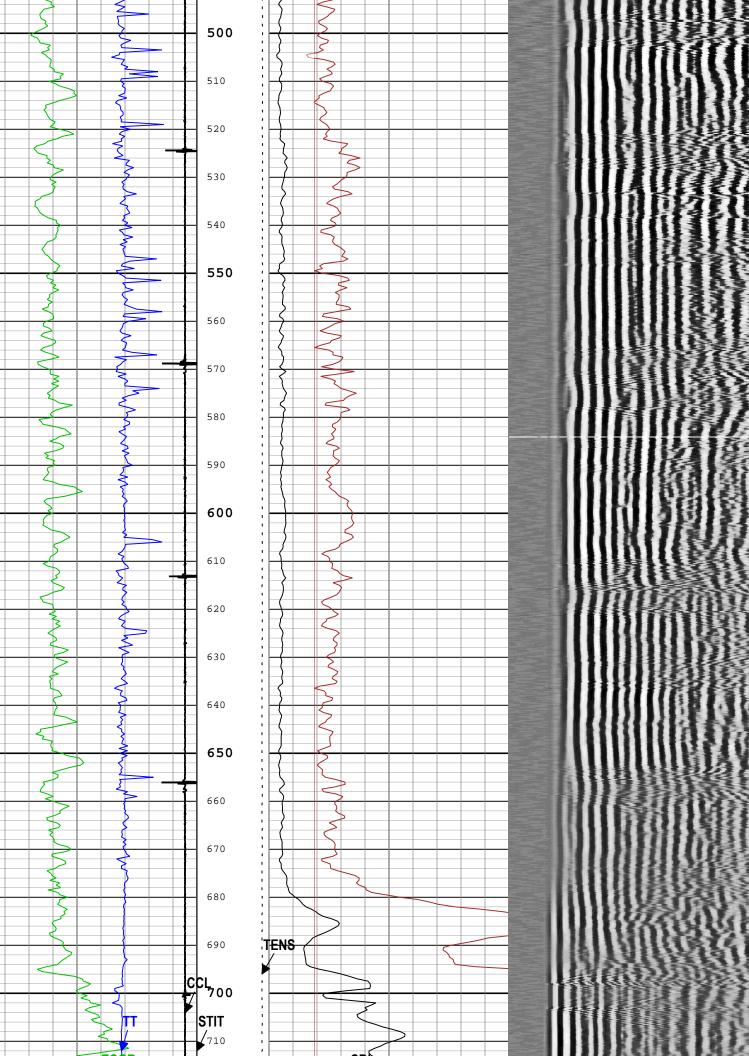
	,								
Run Name	Pass Objective	Direction	Тор	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Main[3]:Up	Up	15.94 ft	3229.82 ft	17-Apr-2019 11:46:27 AM	17-Apr-2019 12:50:12 PM	-	0.91 ft	No
All depths are referenced to toolstring zero									

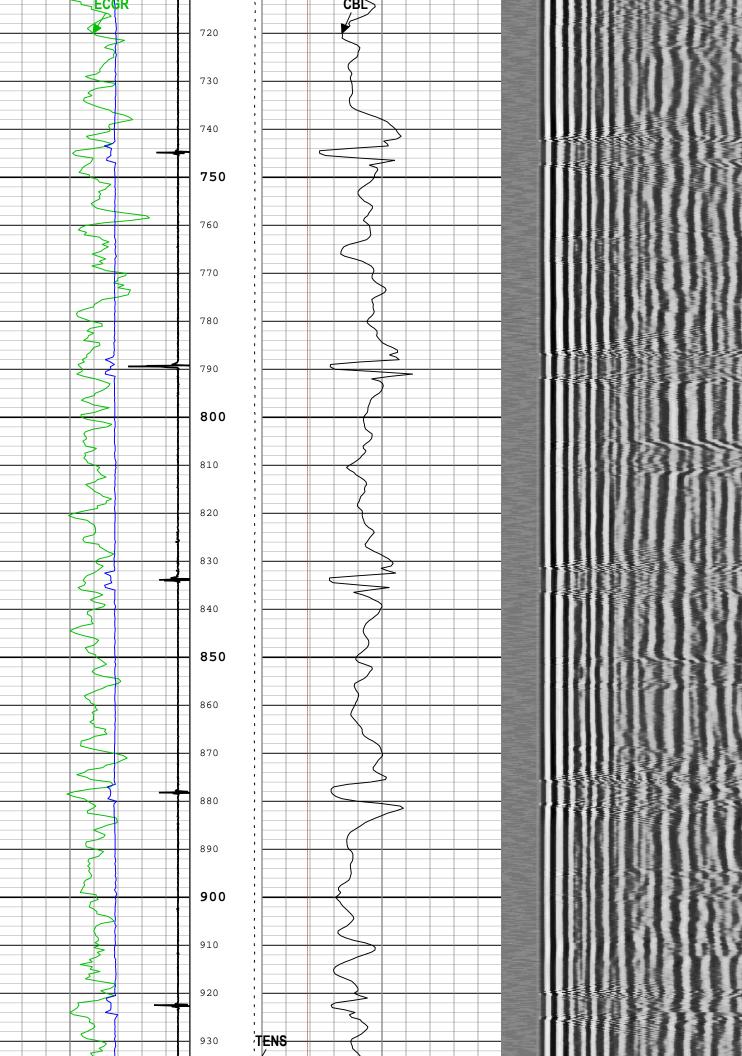
Log								Сс	ompany:	University of Utah:	Well:78-32 //ain[3]:Up:S005
Description: 17-Apr-2019	CBL_VDL 13:42:20	Format: L	og (Sonic C	BL with VDL)	Index Sca	le: 5 in per 10	0 ft Inde	ex Unit: ft	Index Ty	ype: Measured Depth	
TIME_1900		ked every 6	60.00 (s)								
				BIEP - Bon	d Index Eve	nt Pips DSLT	-H				
				Stuck Tool Indicator, Total (STIT)							
				0 ft 50)						
				Cable		BL Amplitude	e (CBL) D	SLT-H			
				Tension (TENS)	0	 n	nV		50		
	Gamma Ray (ECGR) SGT-N aAPI 150				CBL Amplitude (CBL) DSLT-H						
0		API		lbf	0	n	nV		10		
	Transit Time for CBL (TT) DSLT-H			Cable Drag	Good Bond (GOBO)			Min	Amplitu	ude Max	
400					0	0 mV 10			10		
			- K 1001_100.7			odBond from CBL to GOBO			Variable Density Log (VDL) DS		
-19		, , , , , , , , , , , , , , , , , , , ,		1 Drag	·····			30B0	200	US	1200
				20							
		3		30							
				40							
=				50	~~•						

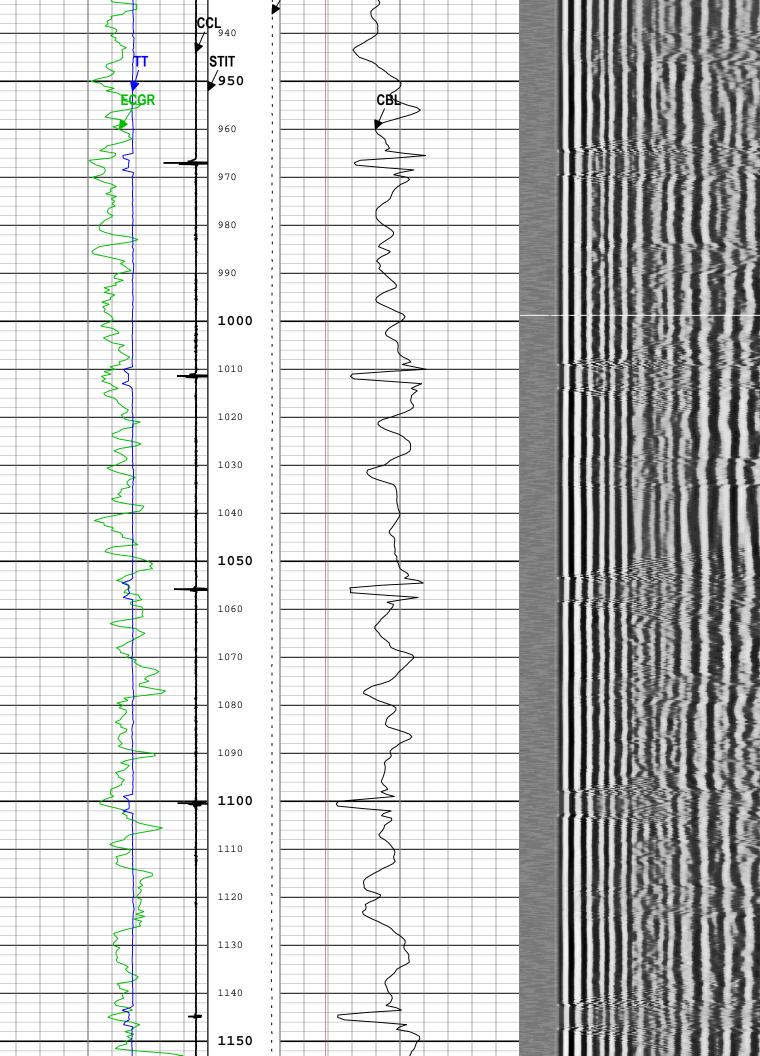


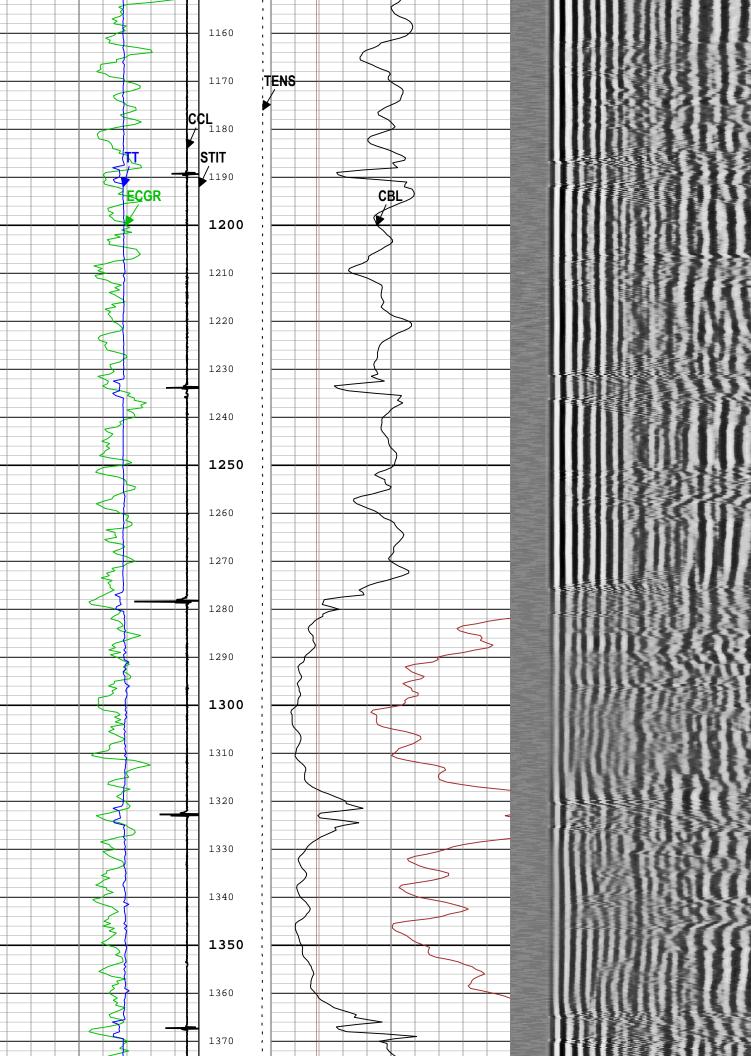


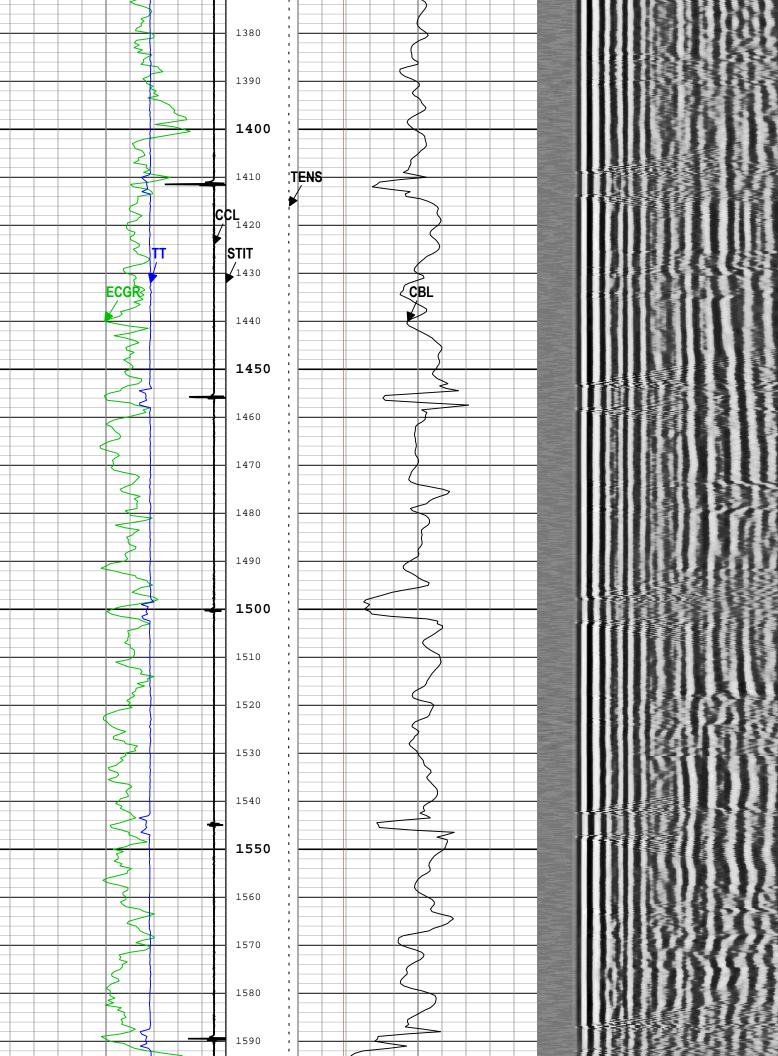


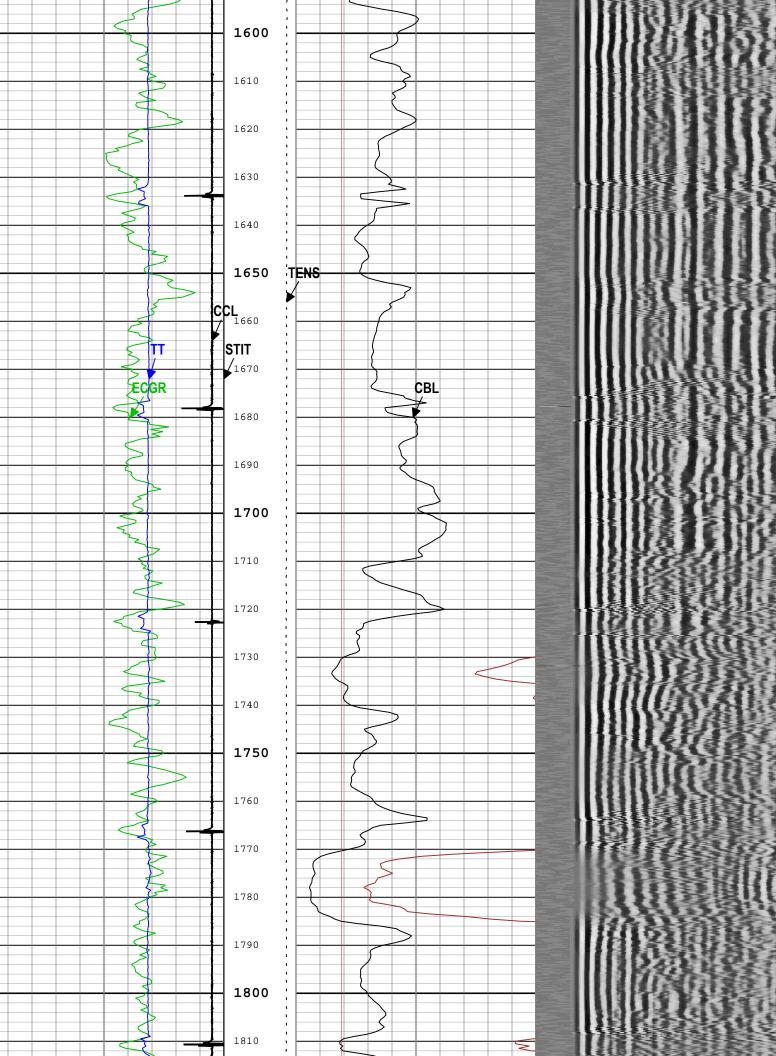


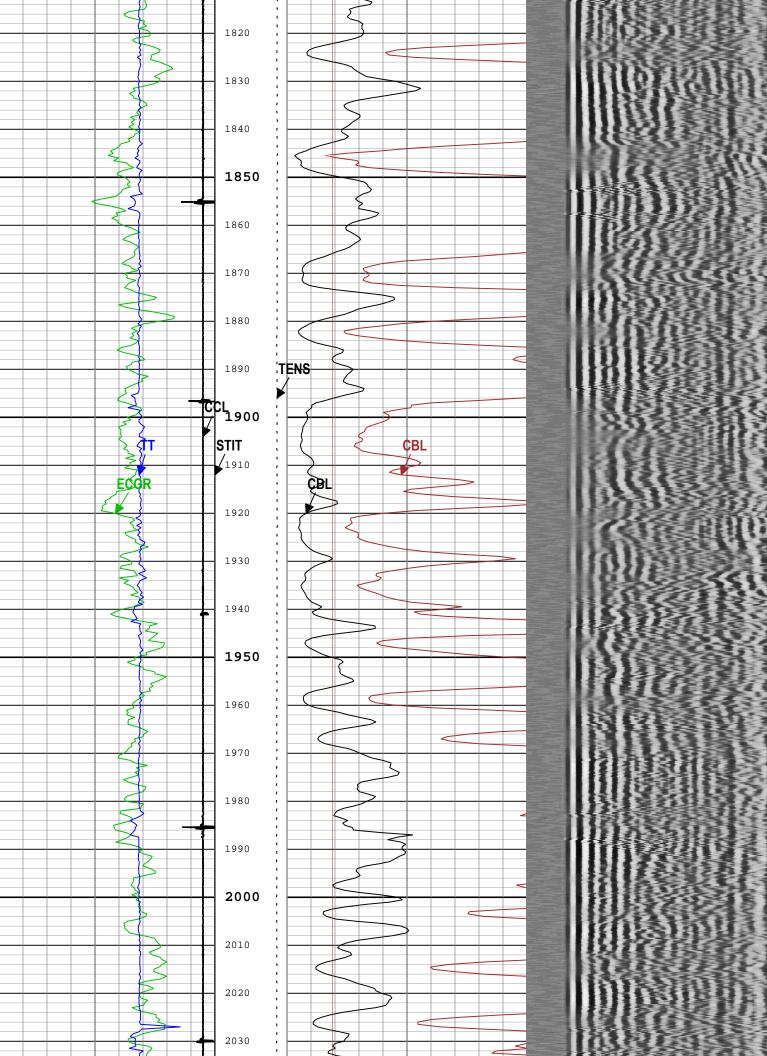


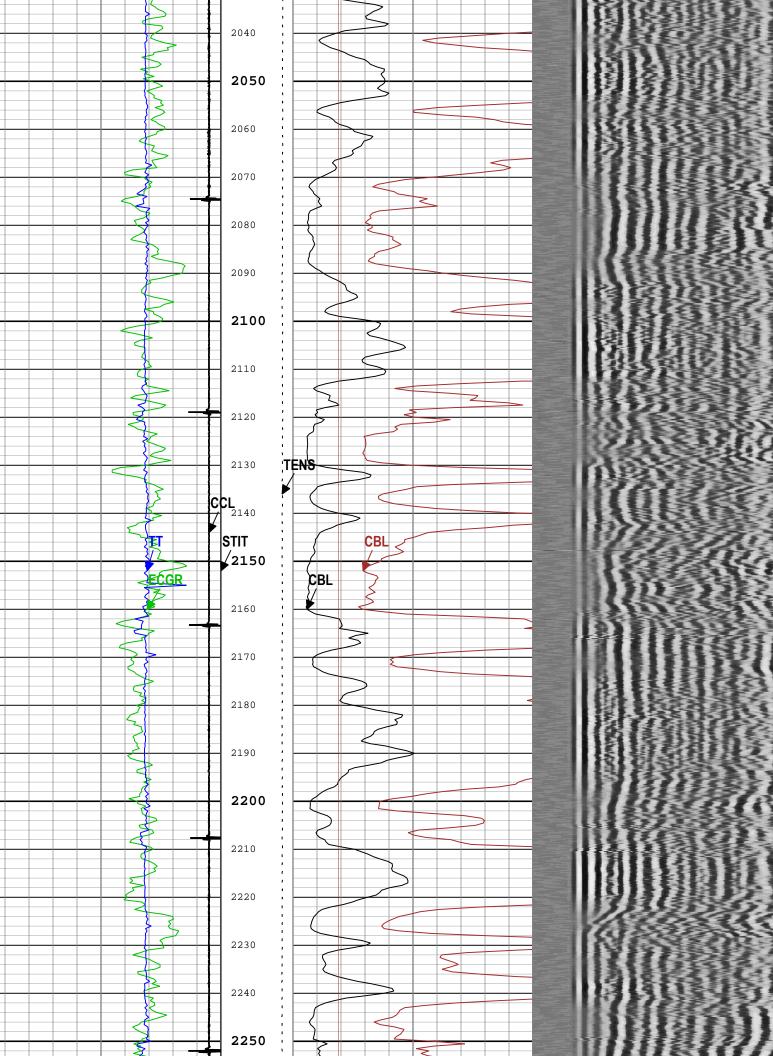


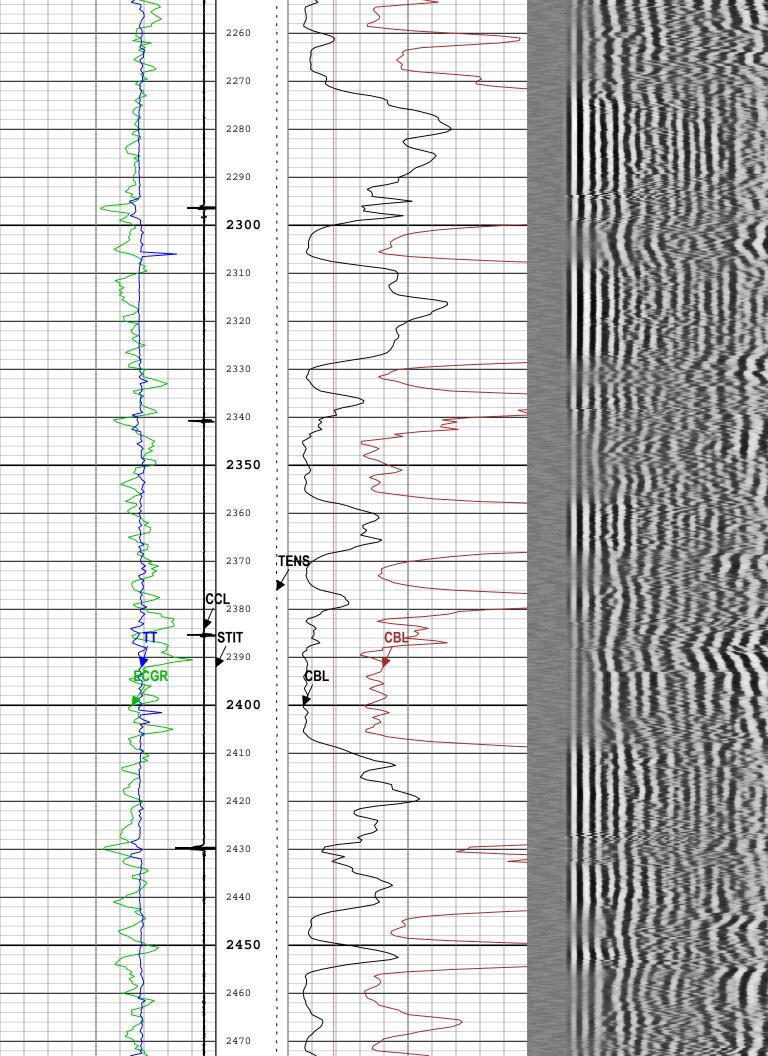


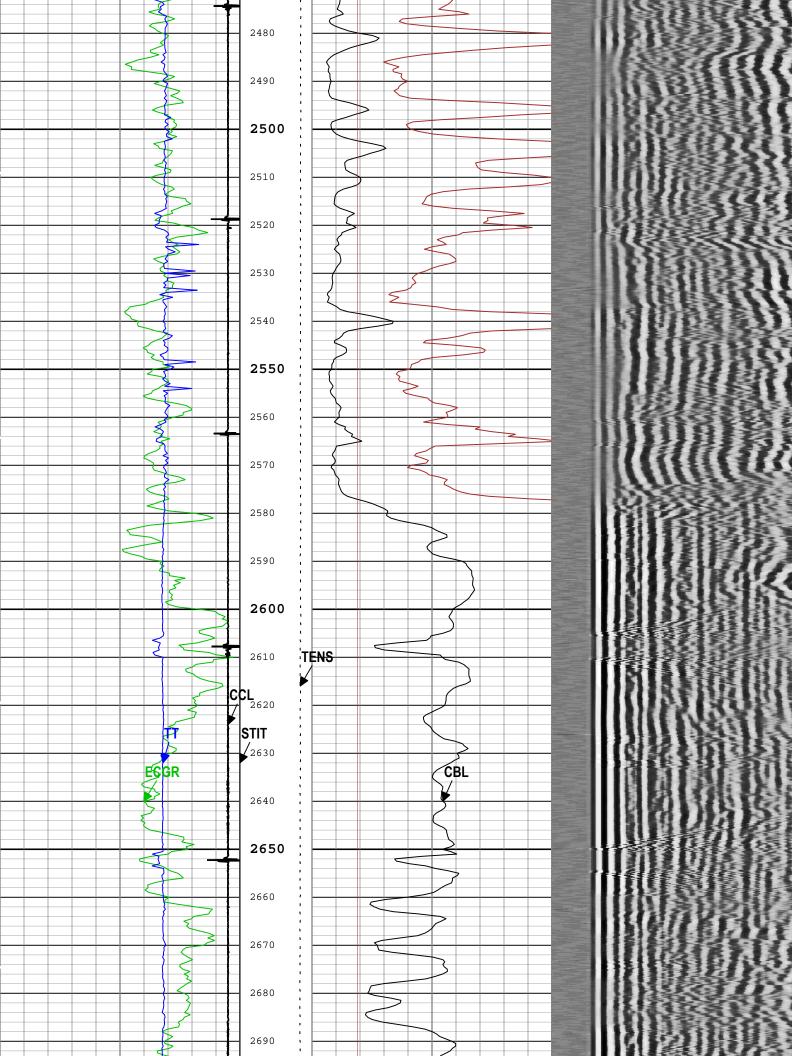


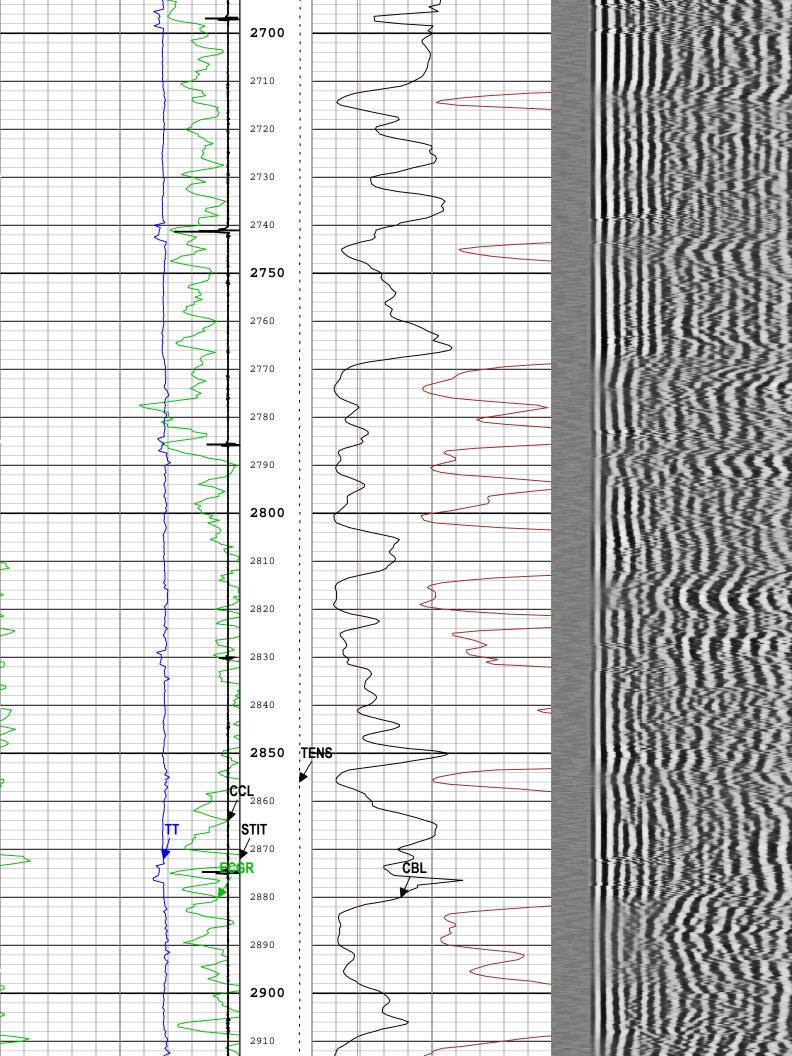


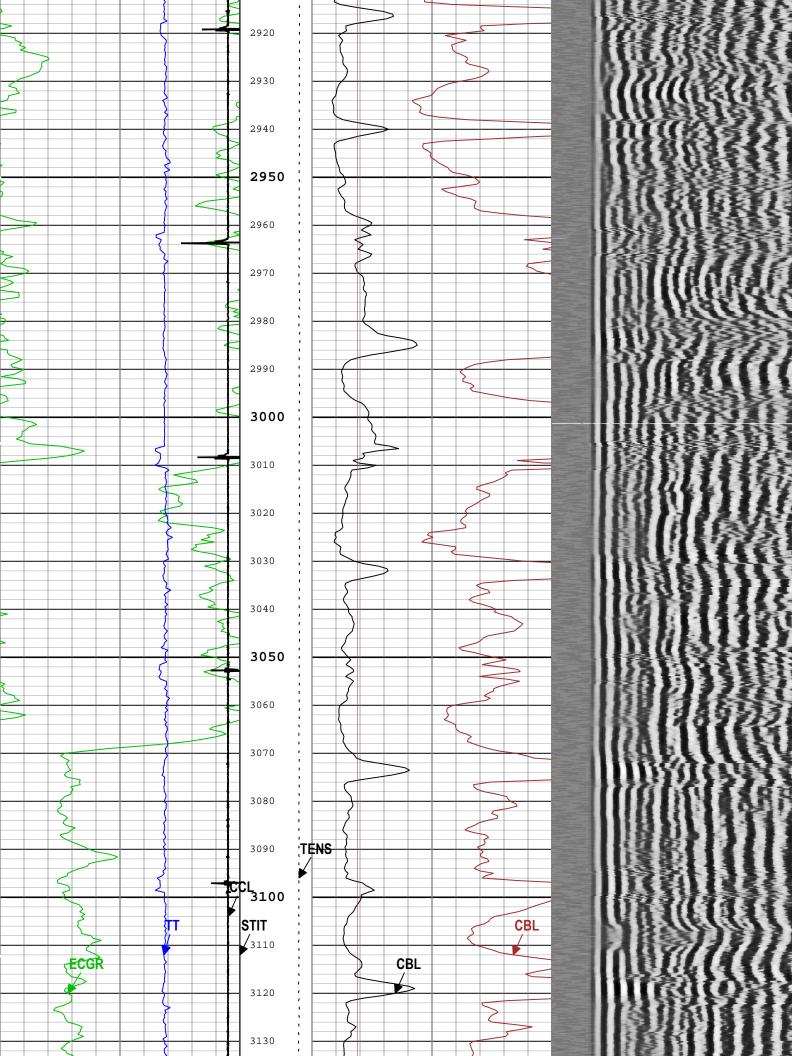


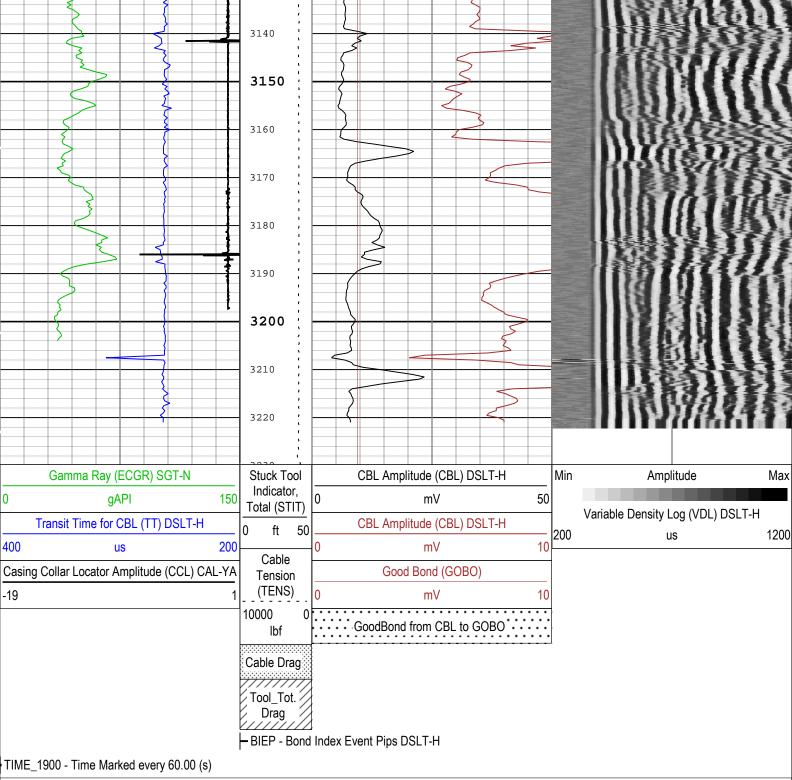












Description: CBL_VDL Format: Log (Sonic CBL with VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 17-Apr-2019 13:42:20

Channel Processing Parameters

ONE: Parameters Parameter Unit Description Tool Value BARI(ISSBAR) Barite Mud Presence Flag Borehole No BHS Borehole Status (Open or Cased Hole) Borehole Open BS Bit Size WLSESSION 8.75 in CBLG CBL Gate Width DSLT-H 74 us CBLO Casing Bottom (Logger) WLSESSION 3272 ft CBRA CBL LQC Reference Amplitude in Free Pipe DSLT-H 71 mV CCL_MULTIPLIER Casing Collar Locator Multiplier CAL-YA 1 CDEN SGT-N Cement Density 2 g/cm3

DETE	Delta-T Detection	DSLT-H	E1				
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal			
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)				
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)				
GOBO_CURR	Good Bond in Arbitrary Cement	DSLT-H	1.89	mV			
MAHTR	Manual High Threshold Reference for first arrival detection	DSLT-H	120				
MATT_CURR	Maximum Attenuation in Arbitrary Cement	DSLT-H	13.94	dB/ft			
MCI	Minimum Cemented Interval for Isolation	DSLT-H	4.75	ft			
MNHTR	Minimum High Threshold Reference for first arrival detection	DSLT-H	100				
MSA	Minimum Sonic Amplitude	DSLT-H	0.76	mV			
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	DSLT-H	0.76	mV			
NMSG	Near Minimum Sliding Gate	DSLT-H	229	us			
SGAD	Sliding Gate Status	DSLT-H	Off				
SGDT	Sliding Gate Delta-T	DSLT-H	57	us/ft			
TD	Total Measured Depth	Borehole	3228	ft			
Tool Control Parameters							
ONE: Parameters							
Parameter	Description	Tool	Value	Unit			

			T Gluo	onn
MODE	DSLT Acquisition Mode	DSLT-H	CBL	
RATE	DSLT Firing Rate	DSLT-H	15 Hz	
DTFS	DSLT Telemetry Frame Size	DSLT-H	536	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h
SGAI	Selectable Acquisition Gain	DSLT-H	x1	

ONE

2 Inch Main Pass

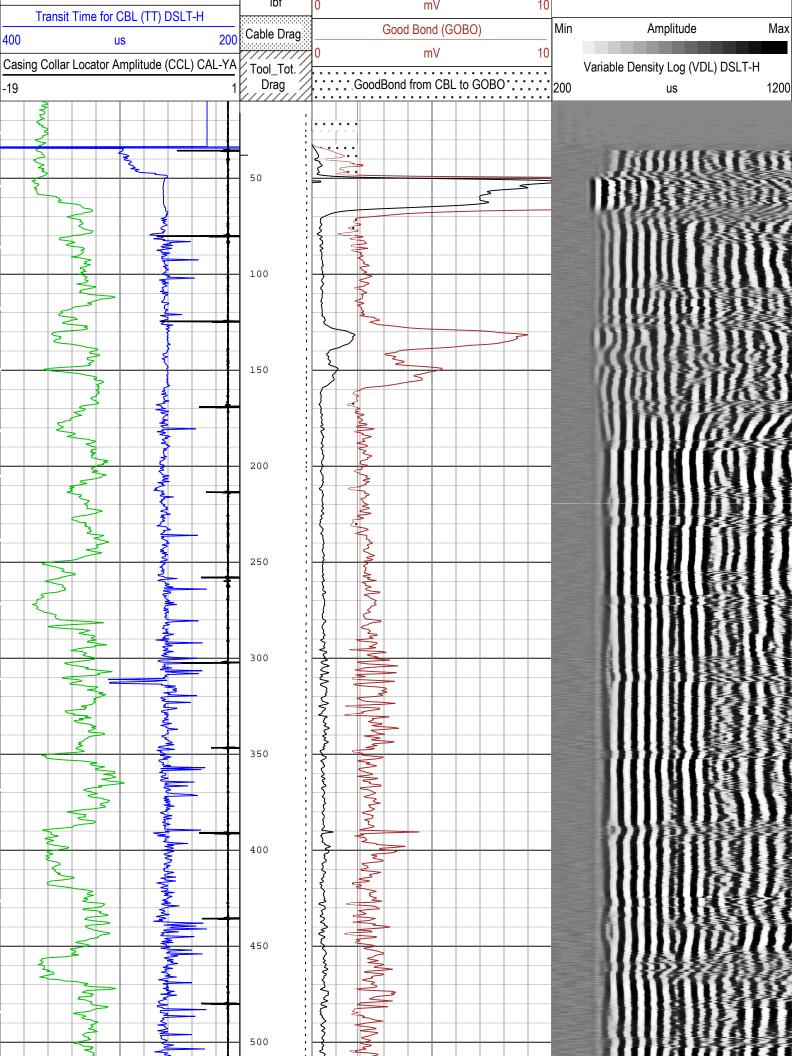
Software Version	
Acquisition System	Version
Maxwell 2018 SP2	8.2.104493.3100

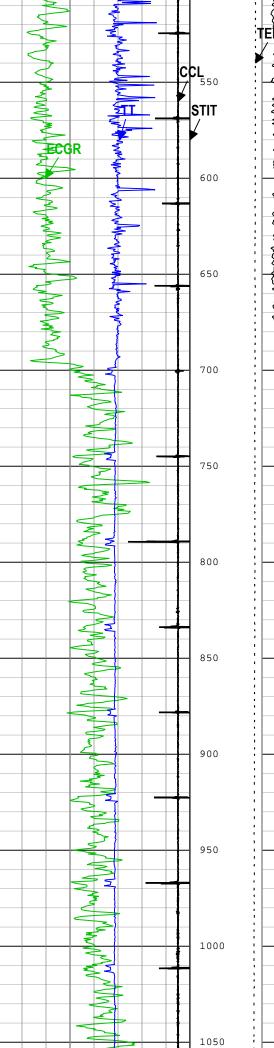
Pass S	ummary								
Run Name	Pass Objective	Direction	Тор	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Main[3]:Up	Up	15.94 ft	3229.82 ft	17-Apr-2019 11:46:27 AM	17-Apr-2019 12:50:12 PM	ON	0.91 ft	No
A 11 1 .1	· · · · · ·								

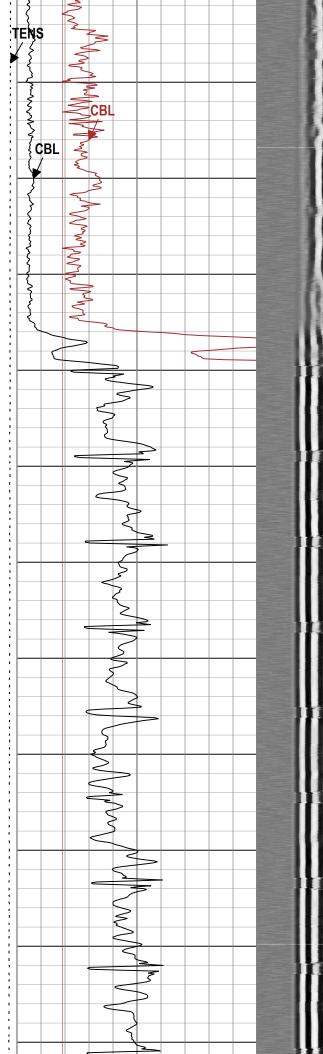
All depths are referenced to toolstring zero

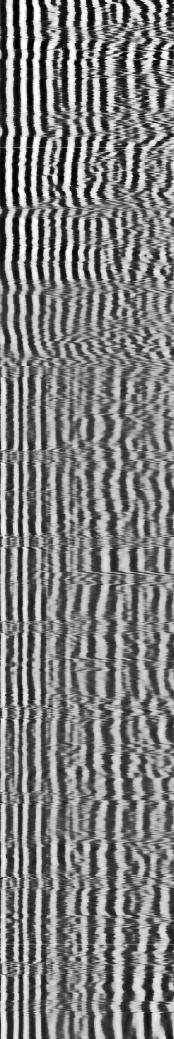
Company: University of Utah Well:78-32 Log ONE: Main[3]:Up:S005 Description: CBL_VDL Format: Log (Sonic CBL with VDL) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 17-Apr-2019 13:42:37 TIME_1900 - Time Marked every 60.00 (s) BIEP - Bond Index Event Pips DSLT-H Stuck Tool Indicator, Total (STIT) 0 ft 50

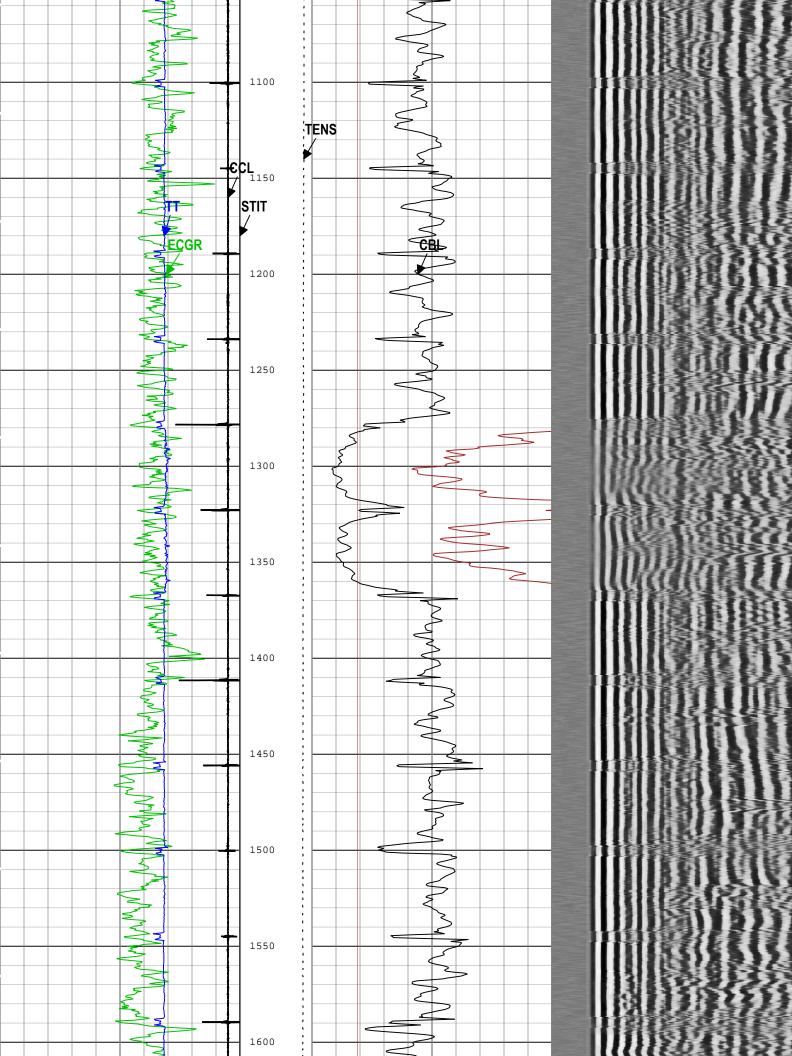
			Cable		CBL Amplitude (CBL) DSLT-H	
	Gamma Ray (ECGR) SGT-N		Tension (TENS)	0	mV	50
0		150	10000 0		CBL Amplitude (CBL) DSLT-H	
•	9/ 11	100	11. 6			

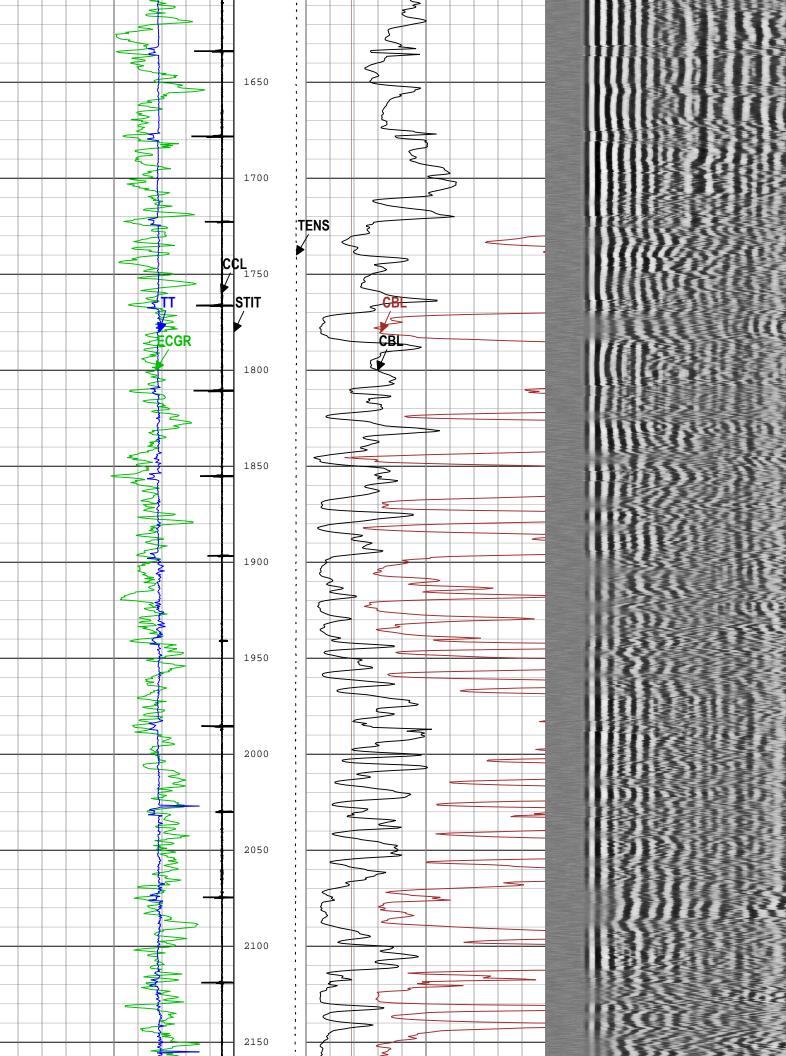


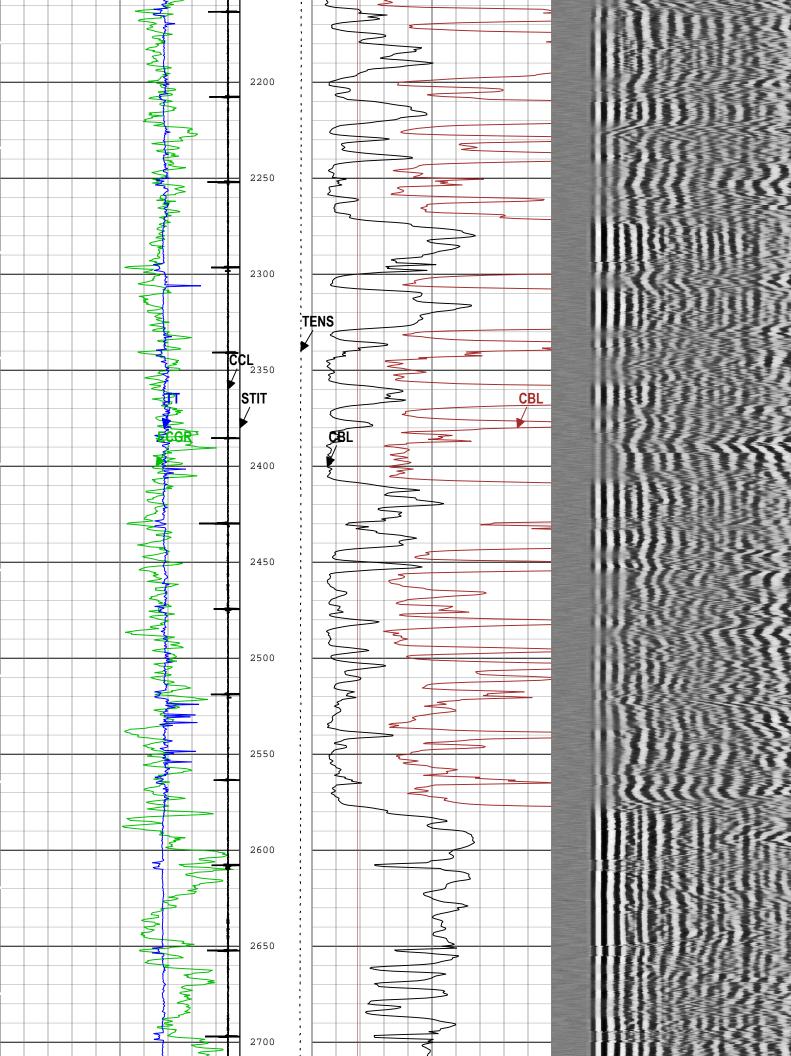


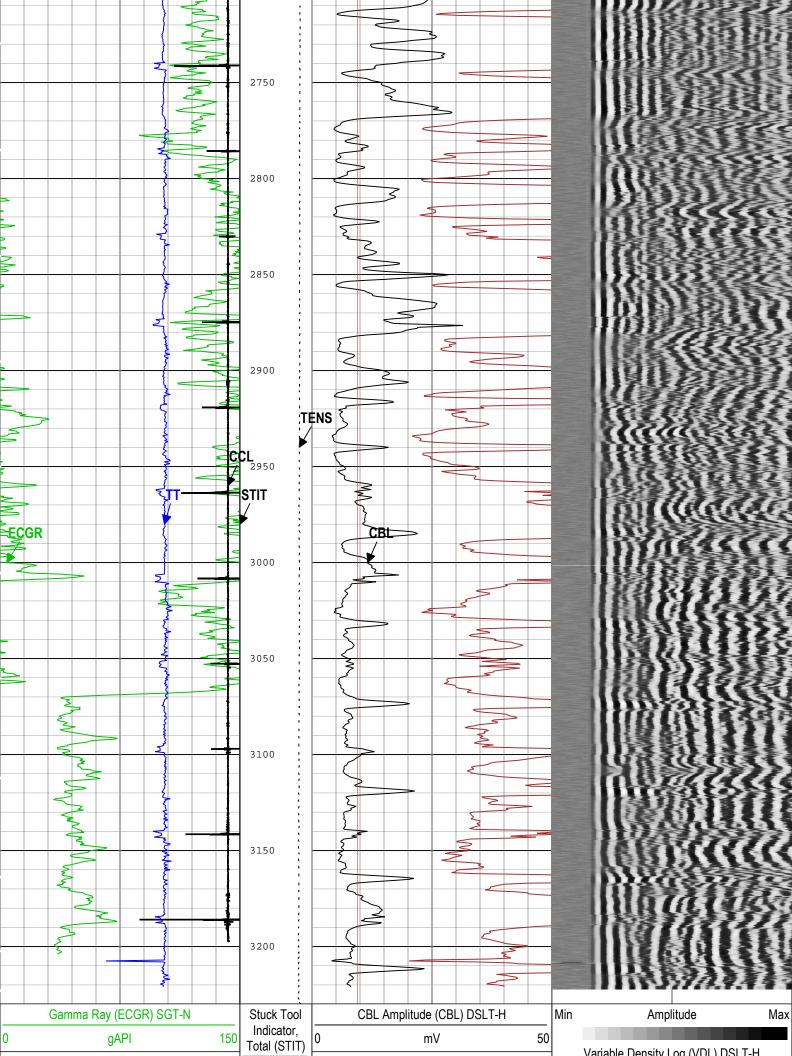












	Transit Time for CBL (TT) DSLT-H		0 ft	50	CBL /	Amplitude (CBL) DSL	_T-H		Valiable Bollony Log (VE	,
400	US	200			0	mV	10	200	US	1200
Casing	g Collar Locator Amplitude (CCL) CA	AL-YA	Cable Tensio		(Good Bond (GOBO)				
-19		1	(TENS		0	mV	10			
			10000 Ibf	0	GoodE	Bond from CBL to GC)во			
			Cable D	77						
			Tool_To Drag BIEP -		Index Event Pi	ps DSLT-H				

TIME_1900 - Time Marked every 60.00 (s)

Description: CBL_VDL Format: Log (Sonic CBL with VDL) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 17-Apr-2019 13:42:37

Channel Processing Parameters

ONE: Parameters

Description	Tool	Value	Unit
			Onn
Barite Mud Presence Flag	Borehole	No	
Borehole Status (Open or Cased Hole)	Borehole	Open	
Bit Size	WLSESSION	8.75	in
CBL Gate Width	DSLT-H	74	us
Casing Bottom (Logger)	WLSESSION	3272	ft
CBL LQC Reference Amplitude in Free Pipe	DSLT-H	71	mV
Casing Collar Locator Multiplier	CAL-YA	1	
Cement Density	SGT-N	2	g/cm3
Delta-T Detection	DSLT-H	E1	
Drilling Fluid Density	Borehole	8.4	lbm/gal
Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
Generalized Caliper Selection for WL Log Up Passes	Borehole	BS(RT)	
Good Bond in Arbitrary Cement	DSLT-H	1.89	mV
Manual High Threshold Reference for first arrival detection	DSLT-H	120	
Maximum Attenuation in Arbitrary Cement	DSLT-H	13.94	dB/ft
Minimum Cemented Interval for Isolation	DSLT-H	4.75	ft
Minimum High Threshold Reference for first arrival detection	DSLT-H	100	
Minimum Sonic Amplitude	DSLT-H	0.76	mV
Minimum Sonic Amplitude in Arbitrary Cement	DSLT-H	0.76	mV
Near Minimum Sliding Gate	DSLT-H	229	us
Sliding Gate Status	DSLT-H	Off	
Sliding Gate Delta-T	DSLT-H	57	us/ft
Total Measured Depth	Borehole	3228	ft
	Borehole Status (Open or Cased Hole) Sit Size CBL Gate Width Casing Bottom (Logger) CBL LQC Reference Amplitude in Free Pipe Casing Collar Locator Multiplier Cement Density Delta-T Detection Drilling Fluid Density Generalized Caliper Selection for WL Log Down Passes Generalized Caliper Selection for WL Log Up Passes Generalized Caliper Selection for WL Log Up Passes Good Bond in Arbitrary Cement Manual High Threshold Reference for first arrival detection Maximum Attenuation in Arbitrary Cement Minimum Cemented Interval for Isolation Minimum Migh Threshold Reference for first arrival detection Minimum Sonic Amplitude Minimum Sonic Amplitude in Arbitrary Cement Mear Minimum Sliding Gate Sliding Gate Delta-T	BoreholeBoreholeBoreholeBoreholeBit SizeWLSESSIONBL Gate WidthDSLT-HCasing Bottom (Logger)WLSESSIONCBL LQC Reference Amplitude in Free PipeDSLT-HCasing Collar Locator MultiplierCAL-YACement DensitySGT-NDelta-T DetectionDSLT-HDrilling Fluid DensityBoreholeSeneralized Caliper Selection for WL Log Down PassesBoreholeSood Bond in Arbitrary CementDSLT-HMaximum Attenuation in Arbitrary CementDSLT-HMinimum Cemented Interval for IsolationDSLT-HMinimum High Threshold Reference for first arrival detectionDSLT-HMinimum Sonic AmplitudeDSLT-HMinimum Sonic Amplitude in Arbitrary CementDSLT-HMinimum Sliding GateDSLT-HSliding Gate Delta-TDSLT-HSliding Gate Delta-TDSLT-H	BoreholeOpenBoreholeOpenBit SizeWLSESSIONSBL Gate WidthDSLT-HCasing Bottom (Logger)WLSESSIONSBL LQC Reference Amplitude in Free PipeDSLT-HCasing Collar Locator MultiplierCAL-YACasing Collar Locator MultiplierCAL-YACasing Collar Locator MultiplierSGT-NCasing Collar Locator MultiplierSGT-NCasing Collar Signer Collar Si

Tool Control Parameters

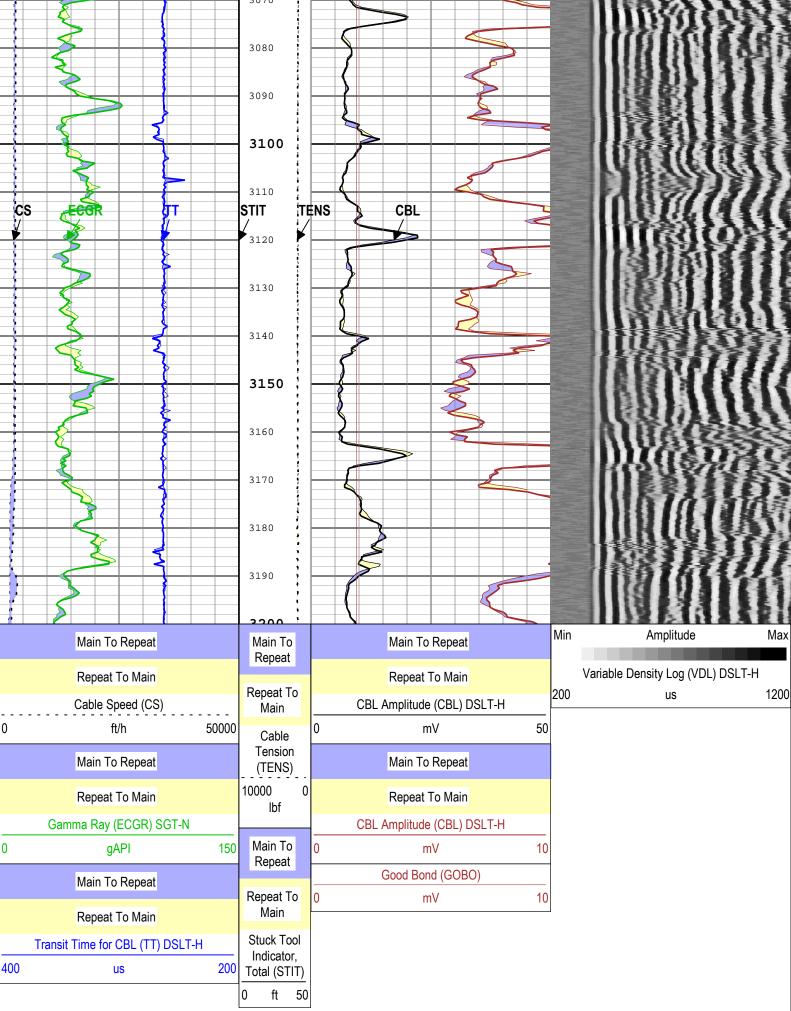
ONE: Parameters

Parameter	Description	Tool	Value	Unit
MODE	DSLT Acquisition Mode	DSLT-H	CBL	
RATE	DSLT Firing Rate	DSLT-H	15 Hz	
DTFS	DSLT Telemetry Frame Size	DSLT-H	536	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h
SGAI	Selectable Acquisition Gain	DSLT-H	x1	

ONE

5 Inch Repeat Analysis

Image: Construct of the second seco	5 Inch Repeat Analysis							
ONE Repeat(2):Up Up 2979.31 ft 3234.88 ft 17-Apr-2019 11:36:57 AM ON 1.08 ft NV ONE Main(3):Up Up 15.94 ft 3228.28 ft 17-Apr-2019 11:46:57 AM 17:Apr-2019 17:Apr-2019 17:Apr-2019 ON 0.91 ft NV All depths are referenced to toolstring zero Company:University of Utah V ONE: MainT3 Description: CBL_VDL Format: Log (Sonic CBL with VDL RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Unit: ft Index Scale: 5 in per 100 ft Index Unit: ft Index Scale: 5 in per 100 ft Index Unit: ft Index Scale: 5 in per 100 ft Index Unit: ft Index Scale: 5 in per 100 ft Index Unit: ft Index Scale: 5 in per 100 ft Index Unit: ft Index Scale: 5 in per 100 ft Index Unit: ft Index Scale: 5 in per 100 ft Index Unit: ft Index Scale: 5 in per 100 ft Index Unit: ft Index Scale: 5 in per 100 ft Index Unit: ft Index Scale: 5 in per 100 ft Index Unit: ft Index Scale: 5 in per 100 ft Index Unit: ft Index Scale: 5 in per 100 ft Index Sc								
ONE Main[3]:Up Up 15.94 ft 3229.82 ft 17.4pr.2013 17.4pr.2013 17.4pr.2013 ON 0.91 ft Nt All depths are referenced to toolstring zero Company:University of Utah V Log Company:University of Utah V Description: CBL_VDL Format: Log (Sonic CBL with VDL RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth C 11:ME_1900 - Time Marked every 60.00 (s) Main To Repeat Repeat Main To Repeat Cable Main To Repeat Main To Repeat Repeat Cable Main To Repeat Repeat To Main To Repeat Repeat To Main Repeat To Main Main To Repeat Repeat To Main Main To Repeat Repeat To Main Repeat To Main Min To Repeat Repeat To Main Repeat To Main Min To Repeat Repeat To Main Min To Repeat Repeat To Main Min To Repeat Min To Repeat Min To Repeat Min To Repeat Repeat To Main Min CBL Amplitude (CBL) DSLT-H Min Amplitude Variable Density Log (VDL)	iclude arallel Data							
All depths are referenced to toolstring zero Log Company:University of Utah V ONE: Main 70 Description: CBL_VDL Format: Log (Sonic CBL with VDL RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth C T7.Apr-2019 13.42:49 BIEP - Bond Index Event Pips DSLT-H TIME_1900 - Time Marked every 60.00 (s) Main To Repeat Repeat To Main Cable Speed (CS) Cable Speed To Main CEL Amplitude (CBL) DSLT-H O mV 50 Camma Ray (ECGR) SGT-N O gAPI 150 Repeat To Main Repeat To Main Repeat To Main CBL Amplitude (CBL) DSLT-H O mV 10 Min Amplitude Variable Density Log (VDL) O transit Time for CBL (TT) DSLT-H O mV 10 O us 200 o ft 50 O mV 10 200 us								
Log Company:University of Utah V Description: CBL_VDL Format: Log (Sonic CBL with VDL RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth C 17-Apr-2019 13:42:49 - - BEP - Bond Index Event Pips DSLT-H - - 11ME_1900 - Time Marked every 60.00 (s) - Main To Repeat Repeat To Main - - 0 ft/h 50000 - - - - - 0 ft/h 50000 - - - - - 0 ft/h 50000 - - - - - 0 gamma Ray (ECGR) SGT-N 0 Main To Repeat - - - 0 gAPI 150 - - - - <	0							
Description: CBL_VDL Format: Log (Sonic CBL with VDL RA) Index Scale: 5 in per 100 ft Index Type: Measured Depth C 17-Apr-2019 13:42:49 BIEP - Bond Index Event Pips DSLT-H Index Scale: 5 in per 100 ft Index Type: Measured Depth C 11ME_1900 - Time Marked every 60:00 (s) Main To Repeat Repeat <td< td=""><td colspan="8"></td></td<>								
Description: CBL_VDL Format: Log (Sonic CBL with VDL RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth C 17.Apr-2019 13:42:49 BIEP - Bond Index Event Pips DSLT-H TIME_1900 - Time Marked every 60:00 (s) Main To Repeat Repeat To Main Cable Speed (CS) 0 ft/h 50000 Repeat To Main 0 gAPI 150 Repeat To Main Repeat To Main 0 gAPI 150 Repeat To Main Repeat To Main 0 gAPI 150 Repeat To Main 0 gAPI 150 Repeat To Main 0 gAPI 150 Repeat To Main 0 ft 50 0 mV 10 100 ws 200 0 ft 50 0 mV 10 3010 3010 100 3010 100 3010 100 3010 100 10	Vell:78-32							
17-Apr-2019 13:42:49 BIEP - Bond Index Event Pips DSLT-H TIME_1900 - Time Marked every 60:00 (s) Main To Repeat Main To Repeat Repeat To Main Cable Speed (CS) Cable 0 ft/h Main To Repeat Cable Main To Repeat Tension Main To Repeat 10000 Bereat To Main CBL Amplitude (CBL) DSLT-H 0 garma Ray (ECGR) SGT-N 0 garma Repeat To Main Repeat To Main CBL Amplitude (CBL) DSLT-H Main To Repeat Main To Repeat Repeat To Main CBL Amplitude (CBL) DSLT-H Main Amplitude Main To Repeat Stuck Tool Indicator, Total (STIT) Good Bond (GOBO) Min 400 us 200 ft 50 3010 3010	reation Date:							
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Main To Repeat Main To Repeat Repeat To Main Repeat To Main Cable Speed (CS) Cable 0 ft/h Store Cable Image: To Main Cable Main To Repeat 10000 Image: To Main CBL Amplitude (CBL) DSLT-H 0 gAPI Image: To Main Main To Repeat Image: To Main Repeat To Main Image: To Main Stuck Tool Indicator, Total (STIT) Image: Transit Time for CBL (TT) DSLT-H Total (STIT) Image: Transit Time for CBL (TT) DSLT-H Total (STIT) Image: Transit Time for CBL (TT) DSLT-H Total (STIT) Image: Transit Time for CBL (TT) DSLT-H Total (STIT) Image: Transit Time for CBL (TT) DSLT-H Total (STIT) Image: Transit Time for CBL (TT) DSLT-H Total (STIT) Image: Transit Time for CBL (TT) DSLT-H Total (STIT) Image: Transit Time for CBL (TT) DSLT-H Total (STIT)								
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Cable Speed (CS) Cable Tension (TENS) Main To Repeat 0 ft/h 5000 Repeat To Main 10000 0 CBL Amplitude (CBL) DSLT-H 0 Repeat To Main 0 mV 50 Gamma Ray (ECGR) SGT-N Main To Repeat Main To Repeat 0 gAPI 150 Main To Repeat Main To Repeat To Main Repeat To Main CBL Amplitude (CBL) DSLT-H 0 gAPI 150 Main To Repeat Repeat To Main Repeat To Main CBL Amplitude (CBL) DSLT-H 0 mV 10 100 100 Main To Repeat Repeat To Main CBL Amplitude (CBL) DSLT-H 100 Min To Repeat To Main Stuck Tool Indicator, Total (STIT) 0 mV 10 400 us 200 0 mV 10 200 us 3010 3010 3010 3010 3010 3010 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 100								
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Repeat To Main 0 mV 50 Gamma Ray (ECGR) SGT-N Main To Main To Repeat 0 gAPI 150 Main To Repeat Main To Repeat Repeat To Main Repeat To Main CBL Amplitude (CBL) DSLT-H Repeat To Main Stuck Tool Indicator, Total (STIT) mV 10 Monor Stude Min Amplitude (CBD) Min Monor Stude Stuck Tool Indicator, Total (STIT) mV 10 Monor Stude 0 mV 10 Variable Density Log (VDL) 3010 3010 3010 3010 Min Amplitude								
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3060								
3070	[[[]							



TIME_1900 - Time Marked every 60.00 (s)

BIEP - Bond Index Event Pips DSLT-H

Description: CBL_VDL Format: Log (Sonic CBL with VDL RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 17-Apr-2019 13:42:49

Company:	University of Utah	Schlumberger
Well:	78-32	
Field:	None	
County:	Beaver	
State:	Utah	
CBL VDL		
Cement Eva	aluation	
Gamma Ray	y - CCL Log	