DAILY DRILLING REPORT

RPT DATE: 11/09/2020
RPT NUM.: 21
RIG: Frontier Rig 16

WELL/JOB INFORMATION

WELL NAME:	FORGE 16A [78]-32	JOB:	Drilling 65° Tangent	RIG SUPERV:	Bob Frank, Duane Winkler, Virgil Welch
FIELD:		LEASE:		RIG PHONE:	281-854-6858
AFE #:		API #:		EMAIL:	
CONTRACTOR:	Frontier Drilling	ELEVATION:	5415.1	RKB:	
SPUD DATE:	10/30/2020	DFS:	10	DOL:	20
MD/TVD:	4964	24 HR FTG:	153	HRS DRLG:	16

PRESENT OPERATIONS: Picking up BHA # 6 and prepare to trip in hole

ACTIVITY PLANNED: Pick up directional tools, TIH, Drill ahead to Casing point

BOP

LAST BOP TEST:	11/23/20	LAST BOP DRILL:	11/6/20	NEXT BOP TEST:	11/3/20

CASING

CASING TYPE	OD	WEIGHT	GRADE	MD	TVD
Conductor	20.00	54	A53B	130	130
Surface	13.38	68	L-80	1,629	1,629

MUD

TIME	MW	FV	WL	PH	CAKE	GELS (10s/10m/30m)			PV	YP	CL	K	Pf	Mf	Ca	OIL	LGS	HTHP
22:00	8.9	56.0	8.4	11.4	1	14	21	32	16	31	800		0.10	0.90	80		1.90	

DRILL BITS

NO.	SIZE	MANUFACTURER	TYPE	SER NO.	JETS	TFA	RE-RUN	IN	OUT	FEET	HRS	WOB	RPM	ROP
5	12.25	SLB Smith	MDSi616	JM 7398	6x18	1.490	N	4,552	4,964	412	16.5	50	90	25.0
4	12.25	NOV	TKC 66 PDC	E266453	6x18	1.490	Y	1,644	4,552	2,908	49.0	50	84	59.3

BIT NO.: INNER: OUTER: DULL: LOC: SEAL: GAUGE: OTHER: RP:

PUMPS

PUMP	MAKE	MODEL	LINER	STK	SPM	PSI	GPM	GPS	EFF %	ECD	AV DP	AV DC	BIT HHP	PUMP HHP
1	BOMCO	1600	6.000	12.000	88	2800	400		95	9.32	141	214	100.1	
3	BOMCO	1600	6.000	12.000	88	2800	400		95	9.32	141	214	100.1	

BHA

#	COMPONENT	OD	ID	LENGTH	#	COMPONENT	OD	ID	LENGTH
1	Drill Bit-12.25	12.25		2	7	MWD Tool-8" NMDC	8	2.75	29.52
2	MWD Tool-9 5/8" Vertical Scout RSS	9.63		20.65	8	Monel Collar-8" Hang off Sub	8	3.25	5.9
3	X-Over-6 5/8 Reg Pin X 6 5/8 Reg Pin	6.63	3.25	2.16	9	Drill Collar-4 Stands of 8" DC	8	2.88	366.49
4	Stabilizer-9 5/8" Scout 7/8 5.9 stg Straigh	9.63	3.25	41.11	10	X-Over-6 5/8 Reg Pin X 4 1/2IF Box X	6.25	2.75	2.8
5	Shock Sub-8" Shock Sub	8	2.75	13.52	11	Drill Pipe-HWDP	5	3	276.35
6	Stabilizer-12 1/8" Steel Stabalizer	12.13		4.79	12	Drill Pipe-5" 19.5# DP	5	4.28	4045.71

DESCRIPTION: Intermediate 4, 12 1/4" hole drilling granite

LENGTH: 4,811.00 BHA WT. AIR: BHA WT. MUD: HRS. ON JARS:

ROT. WT.: P.U. WT.: S.O. WT.: TORQUE:

SURVEY DATA

MD	INCLINATION	AZIMUTH	TVD	N/S	E/W	V. SECTION	DLS
				COORDINATES			
4,543	1.54	20.20	4,542	-4.6	10.5	11.3	1.9
4,637	1.45	334.41	4,636	-2.3	10.4	10.7	1.2
4,732	1.23	267.79	4,731	-1.3	8.9	8.9	1.6
4,826	1.14	219.54	4,825	-2.0	7.3	7.6	1.0

CONSUMABLES

CONSUMABLE	DAILY RECEIVED (gal)	DAILY USED (gal)	DAILY ON HAND (gal)
Fuel		901	35,470
Potable Water			13,200

TIME BREAKDOWN

FROM	TO	HRS	PHASE	CODE	NPT	OPERATIONS
06:00	14:30	8.5	Intermediate Drilling	Drilling		PJSM (pre job safety meeting) with FORGE DSM's and Frontier Drilling. Drill ahead with BHA # 5 from 4,811' - 4,924, 113', at 14. FPH WOB: 44-45 K, ROT 40 rpm, 800 gpm, TQ 3,850 - 4,200 ft lbs, SPP 2,375 - 2,600 psi, DIFF 150 psi Last Survey at 4,826' Inc 1.14, AZM 219.24 Lithology: Weathered Granite consisting of in-situ weathered Feldspar represented as 25% Kaolin clay altered from plagioclase, 50% - 60% Quartz grains, Biotite, Occasional Epidote
14:30	15:00	0.5	Intermediate Drilling	Lubricate Rig		Rig Service
15:00	15:30	0.5	Intermediate Drilling	Drilling		Drill ahead with BHA # 5 from 4,924' - 4,932, 8', at 8. FPH WOB: 50 K, ROT 40 rpm, 800 gpm, TQ 3,850 - 4,200 ft lbs, SPP 2,375 - 2,600 psi, DIFF 150 psi Last Survey at 4,826' Inc 1.14, AZM 219.24 Lithology: Weathered Granite consisting of in-situ weathered Feldspar represented as 25% Kaolin clay altered from plagioclase, 50% - 60% Quartz grains, Biotite, Occasional Epidote
15:30	16:00	0.5	Intermediate Drilling	Other		Step Rate Test: 5K increments, 5 mins each set 800 gpm, 40 rotary WOB Depth Differential 20K 4,946 110 25K 4,946 130 30K 4,947 150 35K 4,947 150 40K 4,947 150
16:00	18:00	2.0	Intermediate Drilling	Drilling		Drill ahead with BHA # 5 from 4,932' - 4,947, 15', at 7.5 FPH WOB: 50 K, ROT 40 rpm, 800 gpm, TQ 3,850 - 4,200 ft lbs, SPP 2,375 - 2,600 psi, DIFF 150 psi Last Survey at 4,826' Inc 1.14, AZM 219.24 Lithology: Weathered Granite consisting of in-situ weathered Feldspar represented as 25% Kaolin clay altered from plagioclase, 50% - 60% Quartz grains, Biotite, Occasional Epidote
18:00	23:00	5.0	Intermediate Drilling	Drilling		Drill ahead with BHA # 5 from 4,947' - 4,964', 17', at 3.4 FPH WOB: 50 K, ROT 40 rpm, 800 gpm, TQ 3,850 - 4,200 ft lbs, SPP 2,375 - 2,600 psi, DIFF 150 psi Last Survey at 4,826' Inc 1.14, AZM 219.24 Lithology: Weathered Granite consisting of in-situ weathered Feldspar represented as 25% Kaolin clay altered from plagioclase, 50% - 60% Quartz grains, Biotite, Occasional Epidote Performed Step Rate test based on Holding GPM constant at 740 GPM Time WOB(K) Rotary Differential ROP 19:40 30 40 95 2.8 19:45 35 40 105 4.3 19:50 40 40 115 3.4 19:55 45 40 135 4.2 20:00 45 50 130 3.3 20:05 45 60 130 3.0 20:08 45 65 130 2.9 20:10 25 80 230 3.1
23:00	23:30	0.5	Intermediate Drilling	Cond Mud & Circ		Rig up air system to kelly hose and blow out water
23:30	04:30	5.0	Intermediate Drilling	Trips		Trip out of hole to BHA #5, lay down MWD
04:30	06:00	1.5	Intermediate Drilling	Trips		Lay down motor, Inspect VRRS Scout tool. stabilizers in gauge Mud Motor bear seal leaking The cutters on the matric of the bit damaged Replace mud motor and pick up new Schlumberger Smith bit
	TOTAL HRS	24.0				