



Daily Drilling Report

Well ID: Forge 56-32

Field: UTAHFORGE

Geothermal Resource Group, Inc.

Well Name: 56-32

Sect: 32 Town: 26S Rng: 9W County: Beaver State: UT

Report No: 13

Report For 16-Feb-21

| | | | | | | | | |
|----------------------------|--------------------|------------------------|----------------|-------------------------|-------------------|------------------------|--------|----------|
| Operator: | University of Utah | Rig: | Frontier | Spud Date: | | Daily Cost / Mud (\$): | --- | |
| Measured Depth (ft): | 5610 | Last Casing: | 9.625 at 3,494 | Wellbore: | Original Wellbore | AFE No. | --- | |
| Vertical Depth (ft): | 5608 | Next Casing: | 5.500 at 9,000 | RKB Elevation (ft): | 30.40 | AFE (\$) | --- | |
| Proposed TD (ft): | 9000 | Last BOP Test: | 12-Feb-21 | Job Reference RKB (ft): | 28.50 | Actual (\$) | --- | |
| Hole Made (ft) / Hrs: | 467 / 23.5 | Next BOP Test: | | Working Interest: | | Totals: | --- | |
| Average ROP (ft/hr): | 19.87 | | | LOT (lbs/gal): | 16.00 | Well Cost (\$): | --- | |
| Drilling Days (act./plan): | 9/30 | Flat Days (act./plan): | 0/8 | Total Days (act./plan): | 9/38 | Days On Location: | 13 | |
| Pers/Hrs: Operator: | 2 / 24 | Contractor: | 14 / 168 | Service: | 8 / 96 | Other: | 0 / 0 | |
| | | | | | | | Total: | 24 / 288 |

Safety Summary: No incidents or events reported. Conducted Safety Meeting.

Current Operations: Changing out BHA and running in the hole with new 8-3/4" PDC

Planned Operations: Finish running in the hole with BHA #9. Continue drilling 8-3/4" hole to 7,500'.

Toolpusher: Justin Bristol, Steve Caldwell

Wellsite Supervisors: Virgil Welch, Paul Stroud

Tel No.: 7132807438

Operations Summary

| From | To | Elapsed | End MD(ft) | Code | Operations Description | Non-Prod |
|-------|-------|---------|------------|-------|---|----------|
| 0:00 | 5:00 | 5.00 | 5,143 | 3-6-2 | Pulled out of the hole and laid down bit and mud motor. | |
| 5:00 | 7:30 | 2.50 | 5,143 | 3-6-1 | Made up new bit and mud motor, ran in the hole to 5,083'. | |
| 7:30 | 8:00 | 0.50 | 5,143 | 3-53 | Filled pipe and washed to bottom at 5,143'. | |
| 8:00 | 8:30 | 0.50 | 5,174 | 3-2-2 | Rotary drilled 8-3/4" hole from 5,143' to 5,174'. | |
| 8:30 | 9:00 | 0.50 | 5,189 | 3-2-3 | Slide drilled 8-3/4" hole from 5,174' to 5,189'. | |
| 9:00 | 14:30 | 5.50 | 5,363 | 3-2-2 | Rotary drilled 8-3/4" hole from 5,189' to 5,363'. | |
| 14:30 | 15:30 | 1.00 | 5,375 | 3-2-3 | Slide drilled 8-3/4" hole from 5,363' to 5,375'. | |
| 15:30 | 22:00 | 6.50 | 5,543 | 3-2-2 | Rotary drilled 8-3/4" hole from 5,375' to 5,543'. | |
| 22:00 | 22:30 | 0.50 | 5,558 | 3-2-3 | Slide drilled 8-3/4" hole from 5,543' to 5,558'. | |
| 22:30 | 0:00 | 1.50 | 5,610 | 3-2-2 | Rotary drilled 8-3/4" hole from 5,558' to 5,610'. | |

Management Summary

Tripped for Bit and BHA#8. Rotated and slid drilled 8.75" hole from 4310' to 5610'.

Comments

Bit number 8 looks good. MWD failed and bearing in motor are worn out. Top stabilizer starting to come apart. Drilling in 100% Granodiotite.

Casing/Tubular Information

| Type | Size (ins) | Top MD (ft) | Top TVD (ft) | Bottom MD (ft) | Bottom TVD (ft) | Hole Section | OH Diam. (ins) | Nom. Wgt. (lbs) | Nominal Grade | LOT (lbs/gal) |
|------|------------|-------------|--------------|----------------|-----------------|--------------|----------------|-----------------|---------------|---------------|
| FULL | 20.000 | 30 | 30 | 129 | 129 | COND | | | | |
| FULL | 13.375 | 0 | 0 | 382 | 382 | SURF | 17.500 | 55 | J-55 | 16.30 |
| FULL | 9.625 | 0 | 0 | 3,494 | 3,488 | INT1 | 12.250 | 36 | J-55 | 16.00 |

Mud Information

| % | | | | | | | | | | | | | | Gels | | | Temp | | Mud | |
|--|-----|----|----|-------|------|-------|--------|-----|-------|------|-----|------|-----|------|-----|-----|------|-----|-----|------|
| Dens. | Vis | PV | YP | Filt. | Cake | pH/ES | Solids | Oil | Water | Sand | LGS | Cl | Ca | CaCl | 10s | 10m | 30m | In | Out | Loss |
| 16-Feb-21 22:00 at Depth 5,544 ft Mud Pits | | | | | | | | | | | | | | | | | | | | |
| 8.70 | 44 | 12 | 16 | 9.8 | 1 | 10.5 | 6 | 0 | 94 | 1.25 | | 1200 | 960 | | 5 | 8 | 17 | 118 | 125 | |

Mud Consumables

| Item Description | Qty. | Cost | Item Description | Qty. | Cost |
|------------------|------|------|----------------------|------|------|
| Barite - OTHER | 21 | --- | caustic - OTHER | 4 | --- |
| Defoamer - OTHER | 3 | --- | Drispac - OTHER | 3 | --- |
| Gel - OTHER | 20 | --- | lime - OTHER | 3 | --- |
| micro c - OTHER | 10 | --- | PAllets/Wrap - OTHER | 4 | --- |
| soda ash - OTHER | 1 | --- | walnut Pine - OTHER | 24 | --- |



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Bit/BHA/Workstring Information

| No | Run | Make | Model | Diam | Depth | | This Run | | | R.O.P. | | Mud | | Pump | | J. Vel | P. Drp | HHP | JIF | |
|-------------------------|-----|------|--------|-------|-----------|----------------|----------|---------------|---------|---------|-----------|-----------|--------|------|------|--------|--------|-----|-----|-------|
| | | | | | In | Out | Dist | Hrs | Avg | Max | WOB | RPM | Torque | Wt | Flow | | | | | Press |
| 7 | 1 | HTC | EP5475 | 8.750 | 4596 | 467 | 15.42 | 30.3 | 61.0 | 40 | 40 | 7 | 8 | 700 | 2800 | 244 | 416 | 170 | 690 | |
| Jets: 20 20 20 | | | | | Out: 5143 | Grade: Cutter: | 8 / 8 | Dull: FC / BT | Wear: A | Brgs: 8 | Gge: 0.25 | Pull: PP | | | | | | | | |
| 8 | 1 | REED | TKC63 | 8.750 | 5143 | | | | | | | | | | | | | | | |
| Jets: 14 14 14 14 14 14 | | | | | Out: 5610 | Grade: Cutter: | 1 / 1 | Dull: NO / NO | Wear: A | Brgs: X | Gge: 1 | Pull: DTF | | | | | | | | |

BHA - No. 8 - BIT, MMTR, OTHER, STAB, MONEL, SHOCK, DC, HWDP = 1178.50

Drilling Parameters

| Depth (ft) | | ROP (ft/hr) | | WOB (lbs) | | RPM | | Torque (ft lbs) | | Flow (gals/min) | | Pressure (psi) |
|-------------------|-------|----------------|------|-----------|-----|-------------|-----|-----------------|-----|-----------------|-----|----------------|
| From | To | Avg | Max | Avg | Max | Avg | Max | Avg | Max | Avg | Max | |
| 4,143 | 5,174 | 30.0 | 41.0 | 40 | 45 | 40 | 45 | 6 | 7 | 700 | 700 | 2,750 |
| Annular Velocity: | | Drill Collars: | | 538.0 | | Drill Pipe: | | 340.0 | | | | |
| 5,174 | 5,189 | 20.0 | 25.0 | 45 | 45 | 0 | 0 | | | 700 | 701 | 2,750 |
| Annular Velocity: | | Drill Collars: | | 538.0 | | Drill Pipe: | | 340.0 | | | | |
| 5,189 | 5,363 | 30.0 | 31.0 | 45 | 45 | 40 | 50 | 6 | 7 | 700 | 700 | 2,750 |
| Annular Velocity: | | Drill Collars: | | 538.0 | | Drill Pipe: | | 340.0 | | | | |
| 5,363 | 5,375 | 20.0 | 21.0 | 40 | 44 | 0 | 0 | | | 700 | 700 | 2,780 |
| Annular Velocity: | | Drill Collars: | | 538.0 | | Drill Pipe: | | 340.0 | | | | |
| 5,375 | 5,545 | 30.0 | 41.0 | 40 | 45 | 40 | 45 | 7 | 8 | 700 | 700 | 2,800 |
| Annular Velocity: | | Drill Collars: | | 538.0 | | Drill Pipe: | | 340.0 | | | | |
| 5,545 | 5,558 | 20.0 | 20.0 | 40 | 45 | 0 | 0 | 0 | 0 | 700 | 700 | 2,800 |
| Annular Velocity: | | Drill Collars: | | 538.0 | | Drill Pipe: | | 340.0 | | | | |
| 5,558 | 5,610 | 33.0 | 41.0 | 40 | 40 | 40 | 40 | 8 | 8 | 700 | 700 | 2,800 |
| Annular Velocity: | | Drill Collars: | | 538.0 | | Drill Pipe: | | 340.0 | | | | |

Comments: Pull out of the well bore due to MWD

Miscellaneous Drilling Parameters

| | | | | | | | | |
|------------------------|--------------------|---------|----------|---------|------------|---------|---------------|---------|
| Hook Loads (lbs): | Off Bottom Rotate: | 160 | Pick Up: | 170 | Slack Off: | 150 | Drag Avg/Max: | 10 / 12 |
| Slow Circulation Data: | | | | | | | | |
| Pump 1: | 20 spm | 170 psi | 40 spm | 290 psi | 60 spm | 490 psi | | |
| Pump 2: | 20 spm | 160 psi | 40 spm | 300 psi | 60 spm | 520 psi | | |

Survey Information

| Survey Type | Meas. Depth | Inc. | Azimuth | TVD | Closure | Vertical Section | Coordinates | | |
|-------------|-------------|------|---------|---------|---------|------------------|-------------|--------|--------|
| | | | | | | | N-S | E-W | D.L.S. |
| MWD | 5,113.0 | 1.85 | 211.0 | 5,111.5 | 54.4 | 46.5 | N 46.5 | E 28.2 | 2.035 |
| MWD | 5,208.0 | 2.42 | 23.9 | 5,206.5 | 54.8 | 47.0 | N 47.0 | E 28.3 | 4.486 |
| MWD | 5,302.0 | 2.68 | 273.6 | 5,300.4 | 55.8 | 48.9 | N 48.9 | E 26.9 | 4.455 |
| MWD | 5,397.0 | 1.01 | 17.6 | 5,395.4 | 55.8 | 49.9 | N 49.9 | E 24.9 | 3.246 |

Mud Log Information

| Depth (ft) | | TVD (ft) | | Gas (Units) | | Gas | Drilling | Pore | Mud | Shale | ROP |
|---|-------|----------|-------|-------------|-----|----------|---------------|-------|-------|-------|------------|
| From | To | From | To | Avg | Max | at Depth | Connect. Trip | Press | Dens. | Dens. | Shale Sand |
| 5,140 | 5,370 | 5,138 | 5,368 | | | | | | 8.70 | | |
| Formation Name: | | | | | | | | | | | |
| Lithology: 100% Granodiorite (frequent fluctuations in amount of biotite) | | | | | | | | | | | |
| 5,370 | 5,600 | 5,368 | 5,598 | | | | | | 8.70 | | |
| Formation Name: | | | | | | | | | | | |
| Lithology: 100% Granodiorite (Less overall secondary minerals) | | | | | | | | | | | |

Rig Information

| |
|---------------------|
| Equipment Problems: |
| Location Condition: |
| Transport: |



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Solids Control Information

| Screen Sizes: | Top | Bottom |
|---------------|-----|--------|
| Shaker No 1: | 170 | |
| Shaker No 2: | 170 | |
| Shaker No 3: | 140 | |

Drill Pipe Inventory

| DP Size | Joints | Weight | Grade | Thread | DP Size | Joints | Weight | Grade | Thread |
|---------|--------|--------|-------|--------|---------|--------|--------|-------|--------|
| 5 | 277 | 19.5 | S-135 | 4.5IF | | | | | |

Safety Information

| Meetings/Drills | Time | Description |
|-----------------|------|-------------|
|-----------------|------|-------------|

Safety 60 Making connections from derrick.

First Aid Treatments: Medical Treatments: Lost Time Incidents: Days Since LTI:

BOP Test Crownamatic Check

Weather Information

| | | | |
|------------------|---------|----------------|-------|
| Sky Condition: | Cloudy | Visibility: | 8 |
| Air Temperature: | 21 degF | Bar. Pressure: | 29.95 |
| Wind Speed/Dir: | 8 / N | Wind Gusts: | 10 |