

# Permanent Monitoring Installation Report



|                       |                  |                    |              |
|-----------------------|------------------|--------------------|--------------|
| <b>Field Ticket #</b> | RGS1609230926    | <b>TD MD</b>       | 2232.0 m     |
| <b>Client</b>         | Tag Oil Ltd      | <b>Tubing Size</b> | 2-7/8" NU    |
| <b>Well Name</b>      | Cheal E5         | <b>Casing Size</b> | 7" 23 lbs/ft |
| <b>Well Location</b>  | Cheal            | <b>SHP</b>         | 0 psi        |
| <b>Rig</b>            | Rival Energy 101 | <b>BHP</b>         | 1920 psi     |
| <b>Customer Rep</b>   | Lewis Stonnell   | <b>SHT</b>         | 15 °C        |
| <b>Service Eng</b>    | Jon Hollingworth | <b>BHT</b>         | 43 °C        |

| <b>Activity</b> | <b>Date</b> | <b>Time</b> | <b>Activity</b> | <b>Date</b> | <b>Time</b> |
|-----------------|-------------|-------------|-----------------|-------------|-------------|
| Depart Base     | 20-Sep-16   | 7:30        | Job End         | 25-Sep-16   | 15:40       |
| Job Start       | 23-Sep-16   | 16:30       | Return Base     | 26-Sep-16   | 17:00       |

|             |                      |                    |                         |
|-------------|----------------------|--------------------|-------------------------|
| Gauge Use   | Reservoir Monitoring | Surface Card       | FIC4000 - DIN Rail      |
| Gauge Depth | 1813.56m MD          | Telemetry          | FSK                     |
| Gauge Type  | PCP4500T             | Surface Output     | Modbus                  |
| Pres Range  | 0-5000 psia          | Cable Splice Depth | N/A                     |
| Temp Range  | 0-150 DegC           | Tubing Hanger      | 3/8" NPT - 1/4" Swageok |
| Max Devi    | 50.8°                | WHFT               | ALS WHFT                |

|                  |                     |               |               |
|------------------|---------------------|---------------|---------------|
| <b>TEC Cable</b> | 0.25" x 11mm Encap  | Encapsualtion | Square 11mm   |
| Serial Number    | 029107G             | Manufacturer  | Draka         |
| Conductor        | 16 AWG Solid Copper | Material      | Polypropylene |
| Tube OD          | 0.25"               | Pres Rating   | 15 kpsi       |
| Material         | 316L SS             | Temp Rating   | 150 DegC      |

|               |           |                   |                  |
|---------------|-----------|-------------------|------------------|
| <b>Gauge</b>  | Digital   | Pres Sensor       | Gap Capaciatance |
| Serial Number | 111479    | Calibration Range | 0-5000 psia      |
| Depth         | 1813.56 m | Temp Sensor       | RTD              |
| OD            | 1-9/16"   | Temp Range        | 0-150 DegC       |
| Vibration     | N/A       | Vibration Range   | N/A              |

|                           |  |
|---------------------------|--|
| Gauge Carrier             | Clamp                                    |
| Running OD                | 4.81"                                    |
| Serial Number             | 2780-48-06/24/06P                        |
| Cross Coupling Protectors | 2-7/8" NU Cast Cross Coupling Protectors |
| Running OD                | 4.34"                                    |
| Qty Installed             | 189                                      |
| Bands and Clips Material  | 0.25" x 0.75" w-7/8" Buckle 316SS        |
| Qty Installed             | 2  |

**Comments:** Digital gauge cablehead installed and pressure tested to 5kpsi. 189 x cast protectors installed on all couplings. Pressure monitored while running in hole with tubing. Gauge reading prior to cutting TEC cable to feed thorough tubing hanger 1906 psia. 8 TEC cable wraps performed on full joint or NU tubing below hanger and strapped with SS bands. Two 3/8" NPT x 1/4" bored through Swagelok fittings used on hanger and tested to 1000 psi. Land THAF and terminate TEC cable and pressure test to 3kpsi. Complete final check on gauge, 1813 psia, 42.2 DegC.

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| Sequence of Events |       |   |
|--------------------|-------|---|
| Date               | Time  | Description   |
| 20-Sep-16          |       | Travel to New Plymouth.   |
| 21-Sep-16          |       | Install gauge on TEC cable and pressure test.   |
| 22-Sep-16          |       | Transport gauge installation equipment to Cheal E site.   |
| 23-Sep-16          | 17:15 | Safety meeting with crew, install TEC cable through sheave and install sheave in the derrick.   |
|                    | 17:30 | Brief crew on the following days events, discuss installation procedure.  |
|                    | 18:00 | Depart for New Plymouth.  |
| 24-Sep-16          | 5:00  | Travel to Cheal station.  |
|                    | 6:15  | Obtain permit and travel to Cheal E site.   |
|                    | 6:30  | Safety meeting with crew.   |
|                    | 6:45  | Pick up tubing hanger, remove and install first stand of tubing.  |
|                    | 7:20  | Make up gauge to carrier and install first cross coupling protector.  |
|                    | 7:30  | RIH with 189 joints of 2-7/8" NU tubing, installing cross coupling protectors over each coupling.   |
|                    | 7:40  | Start applying back pressure to tension TEC cable. Monitor gauge pressure and temperature while running in hole.  |
|                    | 14:30 | Rig down sheave, check gauge pressure 1906 psia. Cut TEC cable and perform TEC cable tubing wrap and pass TEC cable through the tubing hanger. Seal TEC cable through hanger with 2 x 3/8" NPT fittings. Land hanger. |
|                    | 15:30 | Pressure test hanger to 1kpsi.  |
|                    | 15:50 | Complete test and rig up slickline.   |
|                    | 17:15 | Depart for New Plymouth.  |
| 25-Sep-16          | 9:00  | Travel to Cheal site.   |
|                    | 14:00 | Complete testing well barriers, land THAF and terminate TEC cable and pressure test to 3kpsi.   |
|                    | 15:20 | Install wellhead feedthrough.   |
|                    | 15:40 | Complete final check on gauge, 1813 psia, 42.2 DegC.  |