Wireline Gyro Orientation Safe Work Practice

Purpose: The purpose of this procedure is to provide written instruction for the operational check and rig up and rig down of the Wireline Orientation Gyro.

Scope: This procedure shall apply as the standard method for Wireline Gyro Operations.

Responsibilities: This procedure shall be performed by the Gyro Engineer.

Safety (general): Personnel performing this procedure must take all practicable steps to protect their own health & safety & the health & safety of others by complying with applicable Occupational Health and Safety Acts and Regulations and by adhering to Company & Customer safety requirements.

Safety (specific): ELECTRIC SHOCK HAZARD. The Gyro power supply operates with input voltages around DC 110 V. Extreme care must be taken when powering the cartridge, especially if the supply cover is removed. Gyro running gear weight bars weigh 54 lbs so ensure suitable HIP techniques are used.

Step A

1. Pre-Job Operational Check

Prior to rigging up on wireline a pre-job operational check must be performed as follows:

A1.1 Perform step back 5 x 5 in the area to assess potential hazards.

A1.2 As the Gyro is very fragile, ensure that the Gyro is well supported at all times or stored in the Gyro carry case.

A1.3 Connect Surface Box to Dummy Cable Box then connect to wireline Gyro, double check conductor and cable armor connections.

A1.4 Power the tool as per the GyroTracer - Wireline Mode document.

A1.5 Perform Gyro calibration check and calibration verification.

A1.6 Power down the tool and replace equipment into storage boxes.

A1.7 Complete pre-departure check sheet and brief form.

A1.8 Complete journey management.

2. Wellsite Operation

Wellsite operation:

A2.1 Ensure all required wellsite inductions are completed prior to commencing work.

A2.2 Discuss with the company man the survey scope and obtain details of the HUD, potential tight spots and minimum restrictions that may be encounters during survey.

A2.3 Hold safety meeting to ensure that all personnel working in and around the work area are aware of the potential hazards associated with the operation. Review Gyro Operations JSA and logging company JSA for rigging up of wireline equipment.

A2.4 Install surface equipment in logging unit and double check all electrical connections. Ensure that the wireline has sufficient continuity and insulation to support Gyro telemetry. **Ensure that gyro is only handled by Huracan personnel and with care at all times as permanent sensor damage can occur from mishandling.**

A2.5 Install “Gemco” centralisers suitable for casing size. Make sure the centralisers are offset from each other by 45°. Place one centraliser at the top and the second at the bottom of the tool. Ensure there is a 400cm between the top of Stinger assembly and the bottom centraliser.

A2.6 Power up the tool and establish communication, rotate the gyro and stinger assembly until the keyway is facing up, use a level to make sure that keyway is flat. Once the keyway is level reset gravity and gyro toolface, confirm toolface has been reset by checking tool face on at the following angles, 0°, 90°, 180°, 270° and return to 0° to make sure that the tool face is accurate.

A2.7 Zero the tool string depth at the top of the keyway on the stinger.

A2.8 RIH and POOH speed is limited to 120 m/min.

A2.9 At 20m above the anchor, slow the tool to less than 700 ft/hr.

A2.10 Stop approximately 10m above and perform check survey.

A2.11 Continue to RIH @700 ft/hr and sting into the anchor packer, add an additional 1m of cable, stop the winch and run an orientation survey. Record data, pull up 10m above the anchor packer and run in again and perform another survey. Repeat until the surveys are all within 5° of each other.

A2.12 Complete Orientation QC Checksheet, check Gyro and Gravity TF azimuth.

A2.13 Shut down gyro, POOH and rig down.

A2.14 Follow logging company SOP for POOH and logging company JSA for rigging down of wireline equipment and Huracan Gyro tool.

3. Post-Job

The following is a procedure for post-job processing and maintenance:

A3.1 Perform Gryo data integrity check and process and deliver data to client.

A3.2 Check Gyro running gear for electrical insulation and continuity. Check and replace o-rings as required.

A3.3 Ensure gyro is returned to specific equipment carry case and is sufficiently secured prior to departure from the wellsite.

A3.4 On return to base perform post job calibration verification post job operational check following all the considerations from the pre-job check.

A3.5 Finalise customer data delivery and have manager perform secondary check on data delivery.