NORTHERN TERRITORY GOVERNMENT

DEPARTMENT OF
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File Ref: E2016/0036

The Honourable Justice
Rachel Pepper
Hydraulic Fracturing Taskforce
GPO Box 4396
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By email: fracking.inquiry@nt.gov.au

Dear Justice Pepper,

Thank you for the opportunity to assist the panel for the Scientific Inquiry into Hydraulic Fracturing in accordance with your letter dated 25 May 2017. The Department has sought to address the request and provided the information we believe is relevant for the panel's deliberations. Additional information is provided on a data disk which has been submitted to the Inquiry's taskforce.

The information is being provided in good faith to the best of the Department's knowledge and in compliance with the *Inquiries Act*. All information associated with this particular submission may be made publically available should the Inquiry panel believe that it is in the public interest to do so.

The following plans, reports and data sheets are provided. These contain detailed information in relation to the queries contained in your letter:

Hydraulic Fracturing

- Environment Management Plan for stimulation and testing
- Water sampling reports of hydraulic fracturing fluids and flowback fluids
- "Origin Amungee NW1H SWT EPT Report" prepared by Schlumberger which provides a detailed report of the stimulation, well testing and extended production test conducted at Amungee NW-1H;
- Chemical disclosure reports for each hydraulic fracturing stage with details of the actual volumes pumped into the well, chemical additives with their respective commercial designation, chemical abstract service numbers, name, volume and concentration;
- Waste disposal certificates and authority from the Queensland government;
- Water analysis reports of fluids held in the flexi ponds after hydraulic fracture stimulation;
- A report detailing water levels in flexi ponds during hydraulic fracturing operations, flow back and production testing; and
- Material Safety Data Sheets (MSDS's) for all chemicals used during hydraulic fracturing;

Drilling

- The geological operation program for Amungee NW-1

- Detailed drilling and mud programs for the vertical section of drilling Amungee NW-1 (note that adobe allows to read the attachments by clicking on the toggle on the left of the window);
- Detailed drilling and mud programs for the horizontal section of Amungee NW-1H (note that adobe allows to read the attachments by clicking on the toggle on the left of the window);
- The Environmental Plan and summary for drilling Amungee NW-1H including details about fluids management (note that the full plan is not the department's website since drilling preceded the enactment of Petroleum Environment Regulations requiring full publication); and
- Material Safety Data sheets for all chemicals used during drilling.

Please note that chemicals used and environmental plans/environment management plans are published on the department's website via the following links:

- https://dpir.nt.gov.au/mining-and-energy/public-environmental-reports

Drilling fluids are dealt with as follows:

- Drilling fluid (mud) is prepared in enclosed mud tanks on the drilling rig;
- At all times the drilling rig must have sufficient drilling mud available to control well pressures and mud volumes must be closely monitored to detect any losses and maintain well control;
- Drilling mud is pumped down the well via the drill string and exits the drill string through nozzles in the drill bit at the bottom of the well;
- The drilling mud cools, lubricates and sometimes rotates the drill bit and flows back up the annulus (the space between the borehole or casing and the drill string) carrying drill cuttings;
- Drill cuttings are separated from fluids at the drill rig over so-called shale shakers;
- Drill fluids are re-used in a closed system but excess liquids may sometimes be diverted to the flare pit and or mud sump which are lined with clay;
- At the end of the drilling process, the liquid is evaporated on site and any mobile residual fluids are transported to a licenced waste treatment facility before the drilling mud sumps are back filled.
- Drilling liquid removal from site must be undertaken by a licensed waste transporter to a licensed facility and all waste transfer receipts must be submitted to DPIR;
- The drill cuttings are left in the mud sump which is turned over and back filled as per the site rehabilitation plan.

I trust that you will find the information provided comprehensive and useful. Should you require any further information please do not hesitate to contact the department through Deputy Chief Executive Rod Applegate.

Yours sincerely

Alister Trier
Chief Executive

June 2017