



# Canadian Petroleum Engineering Inc.

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February 13, 2023

Pauline de Jong  
Regulator  
Office of the Regulator of Oil and Gas Operations  
PO Box 1320  
Yellowknife, NT  
X1A 2L9

Re: Request for Waiver of Requirement for Cement Evaluation on Aurora  
College Training Well G-04  
Application OA 2022-001-AC

Dear Ms. de Jong

Canadian Petroleum Engineering on behalf of Aurora College is submitting this request for a Waiver for the need for cement evaluation on the Aurora College Training Well G-04. This request for a waiver is based on the information already available on this well which we believe is sufficient to demonstrate that sufficient bond exists to negate any possible internal flow or hydrocarbon leakage between zones or to surface.

The OROGO Well Suspension and Abandonment Guidelines and Interpretation Notes in Section 6A have the objective of ensuring that an operator determine that all oil or gas bearing zones, discrete pressure zones and potable water zones are isolated by evaluating the cement bond in the casing annulus.

CPE submits that the following demonstrates that these objectives have been met and is in keeping with the approach that an Operator may suggest alternative approaches, where those approaches are demonstrated to meet or exceed the same standards for the protection of human safety and the environment.

## **Consideration for Existence of Oil and Gas Bearing zones**

In the initial design of the Aurora College Training well G-04, CPE reviewed all of the regional seismic which was available in order to ensure that the Training Well was drilled off target from any potential oil and gas accumulations. CPE also

reviewed the geology information available for the area near to the possible well sites and determined that the age of the sediments was insufficient to generate hydrocarbons. This review ensured that no hydrocarbon zones would be encountered when the well was drilled.

CPE consulted with the GSC to review whether permafrost may be encountered by the well in order to determine whether permafrost might exist that could act as a trap for hydrocarbons migrating from a deeper depth to zones encountered while drilling the well. GSC's senior regional permafrost researcher, Dr Steve Dallimore, informed CPE that any permafrost that we might encounter at the well location would be relic permafrost due to the proximity to the Mackenzie River and that it would not be present in a contiguous layer or zone that could act as a barrier and allow any sizeable accumulation of hydrocarbon to exist. This also prevents the formation of a higher than normal water pressure zone in the shallower sediments.

### **Isolation of Oil and Gas Zones and Isolation of Potable Water Zones**

The Aurora College Training Well G-04 was designed and drilled to ensure that any possible potable groundwater zones and any potential hydrocarbon bearing zones were protected and isolated. Conductor casing was set at 16 m KB, Surface casing was set at 150 m KB and the main casing string was set at TD at 401 m KB.

Each casing string was cemented back to surface to ensure all formations were covered with cement and fully isolated. Good cement returns were observed on each cement job which validates full isolation.

### **Presence of Porous Zones (from Geological reports)**

The Aurora College Training Well was drilled predominantly in unconsolidated mudstone and silty mudstone, which is what would be expected in an area of rapid deposition such as the Mackenzie Delta. No porous zones were encountered while drilling the G-04 well

Gas detection was in place and used during the drilling operation. Background gas levels were less than 1.0% for the entire well. No significant gas shows were encountered during the drilling operation with neither connection or trip gas reported.

### **No Indications of Gas at Surface near the well**

Well inspections have been conducted periodically since the G-04 well was drilled. None of the Inspection results have recorded any surface casing vent flow (SCVF) nor has any pressure ever built up within the casing. Background gas levels appear similar over the entire wellsite.

We believe that all of the information reviewed supports the Waiver Request being made.

In addition, the requirement for cement evaluation will more than triple the cost of this routine surface well abandonment. This will present Aurora College with a significant financial burden that will be difficult to accommodate within our limited resources.

CPE will provide additional information as required.  
We appreciate your consideration of this request.

Sincerely

Lorne Hammer  
Director CPE