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April 28, 2023

Tanya MacIntosh
Sahtu Land and Water Board
P.O. Box 1
Fort Good Hope, NT
X0E 0H0

Re: Special Effects Study – Written Clarification for Category A Island Bunker Discharges

Dear Ms. MacIntosh,

Per the SLWB's request in the SES direction letter received on March 29, 2023, Imperial is providing written clarification on the process for discharging all releases of water from Category A island bunker well locations.

As outlined in Annex A, Part F of the Type A Water License (S13L1-007), bunker wells are classified as a Category A surface water run-off (SWRO) facility, including the bunker wells located on the Islands within Norman Wells Operations. After spring break-up, these bunker wells are opened up and are often filled with water requiring discharge to enable access to the facilities within the bunker itself. Prior to discharge, a series of field screening tests are completed to confirm the presence of oil sheen on the water, chloride concentration and pH, per the requirements outlined in Annex A, Part E (a) of the Type A Water License (S13L1-007).

A summary of the procedure that is followed by our field operators to complete a discharge is outlined below:

1. Bunker well is identified requiring a surface water discharge event
2. Operator conducts a visual oil sheen test, to confirm the presence or absence of sheen on the surface of the water within the bunker. Operator records the results. If there is a visible sheen present – revert to step 5 below.
3. Operator collects a representative grab sample of the water within the bunker to conduct a pH test. A pH strip is placed in the water sample for a few minutes. The strip is then compared to the color chart on the pH test strip packet to obtain a pH value. Operator records the result. If the measured pH is outside of the guideline (6.0-9.0) – revert to step 5 below.
4. Operator places a chloride quantab test strip into the collected sample for approximately 15 minutes to collect a chloride measurement. Operator records the result. If the measured chloride concentration exceeds the guideline (< 500 mg/L) – revert to step 5 below.
5. For any sample failing or exceeding the 3 field tests outlined in steps (2-4), the water can not be discharged from the bunker well. Instead, a vac truck is mobilized to empty the water from the bunker and is safely transported to the F-31X Treatment and Injection Facility on-site for disposal downhole into the reservoir using the F-31X injection well.
6. For samples that successfully passed the three field tests outlined in steps (2-4), the surface water can be safely discharged out of the bunker to the surrounding environment using a portable pump and hosing system. Care is taken to ensure the discharge location will not cause any local erosion and hoses are utilized to ensure the water is not released directly into any waterbody, including the Mackenzie River. Operators typically have up to 100 ft in hoses and it is standard practice to direct the discharge location in the opposite direction of the nearest waterbody.
7. During the discharge event, the operator records the pump run time to calculate the volume discharged and records the total volume with the field screening results as this data is included in the monthly water use reports submitted to the SLWB.

8. When discharging water volumes greater than 10 m^3, additional representative grab samples are to be collected near the mid-point and at the end of the discharge period. The discharge must be stopped, and the field screening tests outlined in steps 2-4 are repeated to ensure the new representative sample passes the guidelines (Annex A, Part E (a), S13L1-007) before the discharging is resumed.

If you have any questions, please contact Benjamin Fraser at 587-476-2878 or benjamin.fraser@esso.ca.

Sincerely,

Benjamin Fraser
Environment and Regulatory Advisor
Imperial

Cc:
John Gregory, Conventional Operations Superintendent
Alysa Fischbein, Norman Wells Technical Supervisor
Bonnie Bergsma, Sahtu Land and water Board
Tim Morton, CIRNAC