Report Date: December 18, 2025

File: PAO112057

Report Number: 250101

Deep Water Recovery Ltd. 5084
Island Highway South PO Box 276
Union Bay BC V0R 3B0

Dear Deep Water Recovery Ltd.,

Re: Investigation Referral

On November 6, 2025, Ministry of Environment and Parks (Ministry) Environmental Protection Officers Bryan Vroom and Jurgen Deagle (Officers Vroom and Deagle) conducted an on-site inspection of the Deep Water Recovery Ltd. (DWR) ship repair and salvage facility located at 5084 Island Highway South, Union Bay, B.C. (Facility). The inspection was conducted to verify compliance with Pollution Abatement Order 112057 (Order) which was issued on March 15, 2024, and was last amended on May 6, 2025. Present during the inspection were Michael Sloan, PEng., Principal Environmental Engineer, SLR Consulting (SLR Representative); Gillian Helpard, PChem., President, Tsolum & Tsable OHS (TTOHS Representative)); and Brian Fagan, Northwin Environmental (Northwin Representative).

The Order is currently under appeal to the Environmental Appeal Board (EAB) (EAB-EMA-24-A014(a)). DWR applied for a stay of the Order pending the outcome of the appeal. On June 7, 2024, the EAB denied the stay application and the appeal is still in progress.

The Order does not provide authorization to discharge waste to the environment.

This Inspection Report is being referred for Investigation.

Inspection Details:

According to DWR's 2019 management plan for tenure replacement and DWR's on-line profiles, DWR carries out the salvage, dismantling, and recycling of marine vessels and rail assets. DWR leases a 111-acre property in Union Bay, B.C owned by Union Bay Industries Ltd. DWR also had a foreshore lease from the Province of British Columbia, however, that lease was cancelled on July 3, 2025. The subject property includes two land units, which are separated by several private residences, a provincial highway and former railway. Ship maintenance and dismantling occurs at the north end of the eastern property unit (See Appendix 1). The site has a prior history of industrial land-use, including a log sort, wood waste landfill and coal storage. Environmental Site Assessments in 2005 and 2008 found elevated levels of hydrocarbons and trace to low levels of metals at the Facility.

The Facility is located on the east side of Vancouver Island, along Baynes Sound, a sheltered marine waterbody and provincially significant ecological area. A 2024 Impact Assessment, by a Ministry biologist, states that DWR discharged storm water that had contacted operational equipment and other Facility materials, primarily derelict/decommissioned marine vessels. Effluent samples collected by DWR and the Ministry have exceeded BC WQG for numerous parameters of concern, including cadmium, copper, lead, zinc, and polychlorinated biphenyls. Discharges from the Facility enter Baynes Sound. The 2024 Impact Assessment states that effluent discharged by DWR to Baynes Sound may adversely affect the aquatic environment with potential for medium to medium-high adverse effects.

During the November 6, 2025, site inspection, Officers Vroom and Deagle Officers observed active run-off from the asphalt pad to the foreshore, from the gravel pad to the foreshore and from Sump 2 to the foreshore. Officers did not observe active ship maintenance or dismantling activity.

Onsite, the officers observed three barges and the partially dismantled vessel, *Miller Freeman*, as well as, a severely damaged sailboat, stacks of steel hull pieces from dismantled vessels, a large wood pile with old barge decking and some painted wood, a large soil stockpile at the southern end of the Facility and several small watercraft and engines. An additional large vessel, the *Surveyor*, was observed grounded on the foreshore. A barge and a smaller ferry type vessel were anchored off-shore.

This inspection report assesses compliance during the period from August 1, 2025, through November 6, 2025, (Inspection Period) and included review of the following documents:

- "Management Plan For Tenure Replacement", dated 2019-11-27, submitted by Mark Jurisich, Deep Water Recovery **(2019 Management Plan**)
- "Deep Water Recovery Ltd.: Assessment of potential impact of unauthorized discharge", dated August 1, 2024, prepared by Dwayne Minton, Ph.D., R.P.Bio, EIA Biologist, BC Ministry of Environment and Parks (**2024 Impact Assessment**)
- "Effluent Quality Mitigation & Treatment Plan Deep Water Recovery, Union Bay, BC Revision No. 1.3", dated October 2024, received October 31, 2024, prepared by Darryl Stowe, P.Chem, Senior Environmental Scientist, Envirochem Services Inc. (**2024 Treatment Plan**)
- "Sump Discharge Sampling - February 2025 RE: PAO 112057", dated March 15, 2025, prepared by Gillian Helpard, Chem, President TTOHS (**February 2025 Monitoring Report**)
- "PAO 112057 Extension Request", letter dated May 30, 2025, prepared by Graham Walker of Borden Ladner Gervais LLP (**May 2025 Extension Request**)
- "2025-07-17 PAO112057 Information Request", email dated July 17, 2025, from Jurgen Deagle, Environmental Protection Officer, BC Ministry of Environment and Parks. (**July Information Request**)
- "2025-07-26 RE: PAO112057 Information Request", email dated July 26, 2025, from Michael Sloan MSc., PEng. Principal Environmental Engineer, SLR Consulting Ltd. (**July Information Request Response**)
- "PAO 112057 - DWR treatment system water test results August 2025", e-mail dated August 29, 2025, from Michael Sloan, P.Eng., SLR Consulting Ltd. (**August 29, 2025 e-mail**)
- "Sump Discharge Sampling - July 2025 RE: PAO 112057", report dated August 15, 2025 (received August 14, 2025), prepared by Gillian Helpard, P. Chem, President TTOHS (**July 2025 Monitoring Report)**
- "Sump Discharge Sampling - August 2025 RE: PAO 112057", report dated September 15, 2025 (received September 12, 2025), prepared by Gillian Helpard, P. Chem, President TTOHS (**August 2025 Monitoring Report**)
- "Sump Discharge Sampling - September 2025 RE: PAO 112057", dated October 15, 2025, prepared by Gillian Helpard, P. Chem, President TTOHS (**September 2025 Monitoring Report**)
- "Sump Discharge Sampling - October 2025 RE: PAO 112057", dated November 15, 2025, prepared by Gillian Helpard, P. Chem, President TTOHS (**October 2025 Monitoring Report**)
- "Deep Water Recovery Ltd.", Facebook page at https://www.facebook.com/deepwaterrecoveryltd/, retrieved on November 14, 2025. (**Online Profile**)
- "Deep Water Recovery Ltd.", Linked In page at https://www.linkedin.com/company/deep-water-recovery-ltd/, retrieved on November 14, 2025. (**Online Profile**)

This inspection report assessed compliance with all Order requirements.

Compliance Assessment

Below are the requirements that were assessed for compliance during this inspection, as well as the associated details/findings and any actions required.

Requirement Description:

Pollution Abatement Order - Required Action 1

1. Immediately cease the release or discharge of effluent with concentrations of Copper, Lead and Zinc above BCWQG levels to the environment.

Details/Findings:

The August and September 2025 Monitoring Reports stated, "there was no discharge from any sumps or any other locations in the time period". An August 29, 2025 e-mail from the SLR Representative states that water treatment system output showed lead and zinc concentrations met WQG, while copper was half previous results. No numerical results or laboratory reports were provided and whether the treatment system output was discharged to the environment was not specified.

The October Monitoring Report states that no discharge was observed from Sump 1, 2 or 3 or other areas of the Foreshore during the bi-weekly inspections.

The October Monitoring Report states that on October 27, 2025, the TTOHS Representative observed and sampled discharge from Sump 1 and another discharge to the foreshore from the gravel pad area between Sump 1 and Sump 2. No discharge was available at Sump 2 or 3 for sampling. Results of laboratory analysis of the samples are shown in the laboratory certificates of analysis attached as Appendix 3 of this inspection Report. Exceedances of British Columbia Water Quality Guidelines (BC WQG) are shown in Table 1.

Table 1: Sampling Exceedances, Deep Water Recovery, October 27, 2025

Parameter	BC WQG Marine Aquatic Life		Unit	Sump 1 (Oil/Water Separator)	Sump 2 (South)	Sump 3 (North)	Gravel Ramp	Hwy Culvert
	Acute	Chronic						
Copper (total)	3	2	ug/L	30.8	n/s	n/s	27.3	2.79
Lead (total)	140	2	ug/L	8.43	n/s	n/s	0.19	0.054
Zinc (total)	55	10	ug/L	220	n/s	n/s	8.1	5.1

n/s	Not sampled
0.123	Meets BC Water Quality Guideline (BC WQG)
0.123	Exceeds Long term (Chronic) criteria
0.123	Exceeds Long Term (Chronic) and Short term (Acute) criteria

The Sump 1 sample exceeded BC WQG (acute) limits for total copper and zinc, and exceeded BC WQG (chronic) for copper, zinc and lead. Copper concentration (30.8 ug/L) exceeded the acute limit (3 ug/L) by 927% and the chronic limit (2 ug/L) by 1440%. Lead concentration (8.43 u/L) exceeded the chronic limit (2 ug/L) by 322%. Zinc concentration (220 ug/L) exceeded the acute limit (55 ug/L) by 300% and the chronic limit (10 ug/L) by 2100%.

The sample collected from the gravel ramp near the foreshore exceeded the acute and chronic limits for total copper. The gravel ramp copper concentration of 27.3 ug/L exceeds the acute limit (3 ug/L) by 810% and the chronic limit (2 ug/L) by 1265%.

The sample collected from the highway culvert, upgradient of the Facility exceeded the chronic limit for copper. The concentration of 2.79 ug/L exceeded the chronic limit (2 ug/L) by 40%.

On October 27, 2025, DWR was discharging effluent to the environment with concentrations of Copper, Lead and Zinc above BC WQG levels to the environment. Therefore, DWR is out of compliance with Order Requirement 1.

Sample results from Sump 1 and the highway culvert met BC WQG for polyaromatic hydrocarbons (PAH), volatile organic

compound (VOC) and rainbow trout toxicity. The discharge from the gravel ramp was not analyzed for PAHs, VOCs or rainbow trout toxicity.

During the November 6, 2025, on-site inspection, the Northwin Representative stated that the water treatment system was operational, but not fully commissioned. He noted that water captured in the first chamber of Sump 1 is pumped into the on-site water treatment system, then discharged back to the third chamber in Sump 1. The Northwin Representative stated that pumping from Sump 1 to the treatment system is controlled by a manual system, operated by DWR staff. During their inspection, Officers Vroom and Deagle observed effluent from the water treatment system being discharged to the third chamber of Sump 1, but was not actively discharging to the environment.

Discharges from the gravel pad area to the foreshore are not captured or treated.

Compliance:

Out

Actions to be taken:

Immediately cease the release or discharge to the environment of effluent with concentrations of Copper, Lead and Zinc above BCWQG levels.

Requirement Description:

Pollution Abatement Order - Required Action 2

2. By midnight on March 29, 2024, Cause a Qualified Professional to complete a Site Activity and Discharge Identification Update Report (Report) and submit it to the Director. This Report must include:

a) In addition to the Sumps, identification of each location where there is effluent discharged from the Facility on a detailed site plan;

b) A description of the activities occurring on the Facility that could be contributing to the discharge of Contaminants of Potential Concern (COPC) from any location on the Facility; and,

c) Identification of all COPC in effluent for each site activity identified, including but not limited to metals, petroleum hydrocarbons, PAHs, VOCs, TSS, antifouling agents, and pH.

Details/Findings:

On April 4, 2024, the Site Activity and Discharge Identification Update Report was submitted by EnviroChem. This requirement was due and completed before the current Inspection Period, therefore, this requirement is not applicable to this inspection report.

Compliance:

Not Applicable

Requirement Description:

Pollution Abatement Order - Required Action 3

3. Cause a Qualified Professional to complete an updated Effluent Sampling and Management Plan (Plan) and submit it to the Director for approval by September 13, 2024. The Plan must be implemented, including any amendments to the plan identified by the Director, by a date specified in writing by the Director. This Plan must include:

a) Ongoing inspection at least twice per week, of discharge status at each discharge location identified in the Report, with written records and photographs, and inspection of Facility to identify any other discharges that may arise, under the supervision of a Qualified Professional;

b) Ongoing sampling at least once per calendar month and during or within 72 hours of a Significant Rainfall Event of:

- Sump 1;
- Sump 2;
- Sump 3;
- background location NC-HWY;
- any points of discharge to the foreshore including surface water run-off from unpaved areas outside the Sump catchments where vessel repair, maintenance, and/or dismantling activities have taken or are taking place;
- any points of discharge from the foreshore where vessel repair, maintenance, and/or dismantling activities have taken place, and;
- any additional discharge locations identified by the Qualified Professional in the Report

for laboratory analysis of:

- Total Suspended Solids
- pH
- Total and Dissolved Metals
- Any additional COPC identified in the Report *[Discharge Report]*

c) Ongoing sampling and analysis at least once per calendar month and during or within 72 hours of a Significant Rainfall Event of:

- each Sump location;
- any points of discharge to the foreshore including surface water run-off from unpaved areas outside the Sump catchments where vessel repair, maintenance, and/or dismantling activities have taken or are taking place, and;
- any points of discharge from the foreshore where vessel repair, maintenance, and/or dismantling activities have taken place;

for Rainbow Trout Toxicity 96 hr LC50 in 100% effluent. 96 hr LC50 100% means that, in a static bioassay on rainbow trout, at least 50% of the test fish must survive 96 hours in 100% effluent; and

Samples collected from the Sumps/treatment system(s) are to be collected at the point(s) of discharge to the environment. All samples collected must be collected upgradient of the marine environment.

d) Actions proposed to eliminate the discharge of Total and Dissolved copper, lead and zinc in concentrations greater than BC WQG levels to the environment.

a. By October 31, 2024, submit to the Director for approval, an effluent quality mitigation and treatment plan to eliminate the discharge of Total and Dissolved copper, lead and zinc in concentrations greater than BC WQG levels to the environment, developed and implemented under the direction of a Qualified Professional.

b. By October 18, 2024, submit to the Director for approval a design prepared by a Qualified Professional for a water treatment system(s) at the point of discharge on Sumps 1, 2 and 3 in order to cease the release or discharge of effluent with concentrations of copper, lead and zinc above BC Water Quality Guidelines (BC WQG) levels to the environment.

c. Under oversight of a Qualified Professional, install the approved water treatment system(s) including any amendments to the design as identified by the Director, by December 15, 2024.

** Text in blue is from the July 12, 2024, amendment.*
*** Dates have been updated to reflect due date extensions issued after the Order and amendment.*

Details/Findings:

Order Requirement 3 directed DWR to submit an Effluent Sampling and Management Plan (Plan). In the July 12, 2024 Order Amendment, the Director added requirement 3(D)(a) which requires submission of an effluent quality mitigation and treatment plan. In response, DWR submitted:

- the Proposed Surface Water Sampling and Management Plan (2024 Sampling Plan) and
- the Effluent Quality Mitigation & Treatment Plan (2024 Treatment Plan).

The 2024 Sampling Plan was approved by the Director on September 20, 2024. The 2024 Treatment Plan was approved by the Director on November 7, 2024. This requirement was due and plans submitted before the current Inspection Period, therefore, this requirement is not applicable to this inspection report.

Compliance:

Not Applicable

Requirement Description:

Pollution Abatement Order - Required Action 4

4. On a date to be determined, Implement the approved Plan on a date to be specified in writing by the Director.

Details/Findings:

In the 2024 Sampling Plan Approval, the Director stated that the plan must be implemented by October 1, 2024, and that the first monthly report was due November 1, 2024, and monthly thereafter. In a January 10, 2025, e-mail, the Ministry amended the monthly report due date to the 15th of each month.

In the 2024 Treatment Plan Approval, the Director stated that the approved Treatment Plan must be implemented by November 8, 2024 and that a water treatment system to be installed by December 15, 2024. On December 15, 2024, DWR requested a 60 day extension of these implementation dates to allow them to install the water treatment system, complete earth works and divert water to Sump 1. The extension request was denied on December 16, 2024.

Submission of a monthly monitoring report is part of Order Requirement 5 and must include a description of all effluent management activities, including any on-site treatment or off-site disposal. All monthly monitoring reports since February 2025 state that the water treatment system has been installed. The September 2025 and October 2025 monthly reports state that water from Sump 3 is being pumped to Sump 1 for treatment. None of the monthly reports reviewed document completion of any other effluent management activities listed in the approved Plan.

The Ministry issued an Order amendment on May 6, 2025, modifying Requirement 4 by assigning due dates to specific actions from DWR's 2024 Treatment Plan.

On May 30, 2025, DWR requested a 60 day extension to implement commissioning the water treatment system and completing site works, citing the additional time was needed for a newly hired qualified professional to review data and prepare a modified plan. The Ministry denied this request on May 30, 2025. In the October 2025 Monitoring Report, DWR states, "*Current management activities involve reviewing the management plan and drafting a new plan to submit for approval.*" As of November 6, 2025, the Ministry had not received a either a modified or a new plan. Until a modified or new plan is submitted and approved, current Order requirements remain in effect.

As noted in the subsections below, DWR is out of compliance with Requirement 4 subsections (A) through (J). Therefore, DWR has not implemented the approved Plan and is out of compliance with Order Requirement 4 for the period of August 1 to November 6, 2025.

Multiple previous Ministry Inspection Reports (IR) determined DWR was out of compliance with Order Requirement 4:

- IR 235281, November 14, 2024, Warning Letter.
- IR 236755, December 13, 2024, Referral for Administrative Penalty
- IR 238061, January 22, 2025, Referral for Administrative Penalty
- IR 238568, February 28, 2025, Referral for Administrative Penalty
- IR 240675, March 25, 2025, Referral for Administrative Penalty
- IR 241941, May 6, 2025, Referral for Administrative Penalty
- IR 243398, June 4, 2025, Referral for Administrative Penalty
- IR 244510, June 20, 2025, Referral for Administrative Penalty
- IR 44785, August 11, 2025, Referral for Administrative Penalty

Compliance:

Out

Actions to be taken:

Immediately implement the approved Plan.

Requirement Description:

Pollution Abatement Order - Required Action 4.
4 (A): By May 15, 2025 Submit a Commissioning Report for the water treatment system prepared by a Qualified Professional, as detailed in Section 5.5 of the Plan.

Details/Findings:

The February 2025 Monitoring Report states that the water treatment system was installed "by February 15, 2025", was pumping water from Sump 1 into a storage tank and was in the commissioning phase. The May 2025 Extension Request stated, "*Item A requires that the water treatment system be commissioned by a Qualified Professional. This has been done*". The October 2025 Monitoring Report states, "*A commissioning report for the water treatment system is also in progress*." During the November 6, 2025, on-site inspection, the SLR and Northwin Representatives stated that commissioning and the commissioning report were not complete.

Review of the Ministry's electronic records on November 14, 2025, found no Commissioning Report has been received. DWR is out of compliance with Order Requirement 4(A) from August 1 to November 6, 2025.

Compliance:

Out

Actions to be taken:

Immediately submit a Commissioning Report for the water treatment system, prepared by a Qualified Professional.

Requirement Description:

Pollution Abatement Order - Required Action 4.
4 (B): By May 31, 2025, increase the berm height at the north and south ends of the oil/water separator by a minimum of 10 cm (4 inches), as detailed in Section 2.0 and Figure 1 (Appendix A) of the Plan.

Details/Findings:

During the November 6, 2025, on-site inspection, Officers Vroom and Deagle observed that the berm height at the north and south ends of the oil/water separator had not been increased (*See Diagram attached as Figure 1*). Run-off from the asphalt pad was flowing over and around the berm to the foreshore without passing through the water treatment system (*Photo 1*).

DWR is out of compliance with Order Requirement 4(B) from August 1 to November 6, 2025.

Compliance:

Out

Actions to be taken:

Immediately increase the berm height at the north and south ends of the oil/water separator by a minimum of 10 cm (4 inches), as detailed in Section 2.0 and Figure 1 (Appendix A) of the Plan.

Requirement Description:

Pollution Abatement Order - Required Action 4.
4 (C): By May 31, 2025, install an additional 6 meters of asphalt berm (of equivalent combined height) along southern asphalt surface perimeter near the foreshore, as detailed in Section 2.0 and Figure 1 (Appendix A) of the Plan.

Details/Findings:

During the November 6, 2025, on-site inspection, Officers Vroom and Deagle observed that no additional berm had been installed along the southern asphalt perimeter (See attached *Figure 1* and *Photo 2*).

DWR is out of compliance with Order Requirement 4(C) from August 1 to November 6, 2025.

Compliance:

Out

Actions to be taken:

Immediately install an additional 6 meters of asphalt berm (of equivalent combined height) along southern asphalt surface perimeter near the foreshore, as detailed in Section 2.0 and Figure 1 (Appendix A) of the Plan.

Requirement Description:

Pollution Abatement Order - Required Action 4.
4 (D): By May 31, 2025, excavate and install three French Drains in the Sump 2 catchment area, as detailed in Sections 3.1 and 3.2 and Figure 1 (Appendix A) of the Plan.

Details/Findings:

During the November 6, 2025, on-site inspection, Officers Vroom and Deagle did not observe French drains in the Sump 2 catchment area. During the inspection, the TTOHS Representative stated that the drainage improvements listed in the 2024 Treatment Plan, including the French drain, had not been installed. (*See attached Figure 1*). Run-off from the gravel pad area was flowing east from the Facility onto the marine foreshore area (*See attached Photo 3*).

DWR is out of compliance with Order Requirement 4(D) from August 1 to November 6, 2025.

Compliance:

Out

Actions to be taken:

Immediately excavate and install three French drains in the Sump 2 catchment area, as detailed in Sections 3.1 and 3.2 and Figure 1 (Appendix A) of the Plan.

Requirement Description:

Pollution Abatement Order Required Action 4.
4 (E): By May 31, 2025, grade the unpaved area of the Sump 2 catchment area from north to south, as detailed in Section 3.1 and Figure 1 (Appendix A) of the Plan.

Details/Findings:

During the November 6, 2025, on-site inspection, Officers Vroom and Deagle did not observe evidence of re-grading of the Sump 2 catchment area. During the inspection, the TTOHS Representative stated that the drainage improvements listed in the 2024 Treatment Plan, including the re-grading of the Sump 2 catchment, had not been completed (*See attached Figure 1 for proposed improvement locations*). Run-off from the gravel pad area was flowing east onto the foreshore area (*See attached Photo 3*).

DWR is out of compliance with Order Requirement 4(E) from August 1 to November 6, 2025.

Compliance:

Out

Actions to be taken:

Immediately grade the unpaved area of the Sump 2 catchment area from north to south, as detailed in Section 3.1 and Figure 1 (Appendix A) of the Plan.

Requirement Description:

Pollution Abatement Order - Required Action 4.
4 (F): By May 31, 2025, install and operate a 1,300L oil/water separator at the north end of French Drain #3, as detailed in Section 3.2, Figure 1 (Appendix A), and Appendix B of the Plan.

Details/Findings:

During the November 6, 2025, on-site inspection, Officers Vroom and Deagle did not observe a new oil/water separator in the Sump 2 catchment area. During the inspection, the TTOHS Representative stated that the drainage improvements listed in the 2024 Treatment Plan, including the new oil/water separator, had not been completed (*See attached Figure 1*).

DWR is out of compliance with Order Requirement 4(F) from August 1 to November 6, 2025.

Compliance:

Out

Actions to be taken:

Immediately install and operate a 1,300L oil/water separator at the north end of French Drain #3, as detailed in Section 3.2, Figure 1 (Appendix A), and Appendix B of the Plan.

Requirement Description:

Pollution Abatement Order - Required Action 4.
4 (G): By May 31, 2025, following completion of items D to F, decommission Sump 2. The decommissioning process must include:

i) removing vegetation and sedimentation from Sump 2;
ii) sampling and laboratory analysis of the material removed from the sump;
iii) disposal of the material removed from the sump at an authorized waste disposal facility; and
iv) providing the Director with documentation of the disposal of the material removed and the completion of the decommission process.

Details/Findings:

During the November 6, 2025, on-site inspection, Officers Vroom and Deagle observed that Sump 2 has not been decommissioned and still connects to the drainage ditch around the gravel pad area (*See attached Figure 1*). Run-off from Sump 2 was flowing east onto the foreshore area (*See attached Photo 4*).

DWR is out of compliance with Order Requirement 4(G) from August 1 to November 6, 2025.

Compliance:

Out

Actions to be taken:

Immediately following completion of Required Actions 4(D), 4(E) and 4(F), decommission Sump 2.

Requirement Description:

Pollution Abatement Order - Required Action 4.
4 (H): By May 31, 2025, install a four-inch asphalt berm along the northern perimeter of the existing asphalt surface area, as detailed in Section 4.2 and Figure 1 (Appendix A) of the Plan.

Details/Findings:

During the November 6, 2025, on-site inspection, Officers Vroom and Deagle observed that no additional berm had been installed along the northern perimeter of the asphalt surface (*See attached Figure 1*).

DWR is out of compliance with Order Requirement 4(H) from August 1 to November 6, 2025.

Compliance:

Out

Actions to be taken:

Immediately install a four-inch asphalt berm along the northern perimeter of the existing asphalt surface area, as detailed in Section 4.2 and Figure 1 (Appendix A) of the Plan.

Requirement Description:

Pollution Abatement Order - Required Action 4.
4 (I): By May 31, 2025, fully cover the relocated berm soil stockpiles with impermeable cover to protect from precipitation and prevent the generation of leachate, as detailed in Section 4.2 of the Plan.

Details/Findings:

During the November 6, 2025, on-site inspection, Officers Vroom and Deagle observed that the material from the former north berm was stockpiled south of the gravel pad area, west of Sump 2. The stockpile was not covered (*See Photo 5*).

DWR is out of compliance with Order Requirement 4(I) from August 1 to November 6, 2025.

Compliance:

Out

Actions to be taken:

Immediately fully cover the relocated berm soil stockpiles with an impermeable cover.

Requirement Description:

Pollution Abatement Order - Required Action 4
4 (J): By May 31, 2025, decommission Sump 3. The decommissioning process must include:

i) removing vegetation and sedimentation from Sump 3;
ii) sampling and laboratory analysis of the material removed from the sump;
iii) disposal of the material removed from the sump at an authorized waste disposal facility; and
iv) providing the Director with documentation of the disposal of the material removed and the completion of the decommission process.

Details/Findings:

During the November 6, 2025, on-site inspection, Officers Vroom and Deagle observed that Sump 3 has not been decommissioned.

DWR is out of compliance with Order Requirement 4(J) from August 1 to November 6, 2025.

Compliance:

Out

Actions to be taken:

Immediately decommission Sump 3.

Requirement Description:

Pollution Abatement Order - Required Action
4 (K): By May 31, 2025, redirect discharge from Sump 3 to the catchment area of Sump 1, as detailed in Section 4.2 and Figure 1 (Appendix A) of the Plan.

Details/Findings:

The October 2025 Monitoring Report states, "*Sumps 2 and 3 have pumps in place to pump water to sump 1.*"

During the November 6, 2025, on-site inspection, Officers Vroom and Deagle observed that Sump 3 has not been decommissioned and still connects to a discharge pipe to the foreshore (*See attached Figure 1*). There was a pump and hose leading from Sump 3 to Sump 1. There was no power supply at the pump and the pump was not operating at the time of inspection. Sump 3 was only partially full and was not discharging.

Pumping equipment was present at Sump 3. It was not set up to redirect discharge, but redirection was not required at the moment of inspection, therefore, compliance with this requirement is not determined.

Compliance:

Not Determined

Actions to be taken:

Redirect discharge from Sump 3 to the Sump 1 catchment area.

Requirement Description:

Pollution Abatement Order - Required Action 4. On a date to be determined, Implement the approved Plan on a date to be specified in writing by the Director.
4 (L): By May 31, 2025, install, commission and operate the water treatment system design as detailed in Section 5.0 (including subsections 5.1 through 5.5), Appendix C, and Appendix D of the Plan.

Details/Findings:

The February 2025 Monitoring Report states that the water treatment system was installed by February 15, 2025, and was in the commissioning phase. Each monthly monitoring report from March 2025 to October 2025 states that the water treatment system is in the commissioning phase.

The May 2025 Extension Request stated, "*Item A requires that the water treatment system be commissioned by a Qualified Professional. This has been done, however it appears the results are not significantly changed. Further calibration of the system has recently been undertaken. DWR is waiting for new lab results.*"

During the November 6, 2025, site inspection the SLR and Northwin Representatives stated that there was inadequate rainfall over the summer to complete commissioning of the water treatment system. They noted they have been able to operate the system this fall and had seen improvements in discharge water quality, but commissioning is still in progress

The Northwin Representative stated that the water treatment system is operational. The system is powered by a portable electrical generator, which was not running when the representative arrived on November 6, 2025. The Northwin Representative stated that the treatment system is being manually operated by DWR staff and that Northwin does not manage or know when the system is turned on. During the Site inspection the Northwin Representative noted three leaks from the filtration units of the water treatment system, the generator powering the system was off when he arrived and had 1/4 - 1/3 tank of fuel, that hoses on the treatment system had been switched out to different sizes, that there was a bent fitting on the filter discharge and that the first two compartments of the Baker tank were over full and required a different pump set-up. The system was not being operated as designed.

DWR is out of compliance with Order Requirement 4(L) from August 1 to November 6, 2025.

Compliance:

Out

Actions to be taken:

Immediately install, commission and operate the water treatment system design as detailed in Section 5.0 (including subsections 5.1 through 5.5), Appendix C, and Appendix D of the Plan.

Requirement Description:

Pollution Abatement Order - Required Action 4. On a date to be determined, Implement the approved Plan on a date to be specified in writing by the Director.
4 (M): Once the water treatment system is operational, accumulated solids in the Holding Tank must be removed by vacuum truck. As per Section 5.2. of the Plan, the removed solids will be sampled for laboratory analysis, then sent to a waste disposal facility authorized to accept the waste type. Records of the volume of solids removed, laboratory results and disposal location will be maintained by DWR and made available for inspection upon request. - Ongoing Requirement

Details/Findings:

During the November 6, 2025, on-site inspection, the Northwin Representative stated that the water treatment system is operated by a DWR staff member. The Northwin Representative stated that those staff monitor solids and will pump out as necessary, but, to their knowledge, no pump out has occurred yet.

Compliance:

Not Applicable

Requirement Description:

Pollution Abatement Order - Required Action 5

5.: On the fifteenth day of every month on a date to be determined following Plan approval, Cause a Qualified Professional to submit to the Director a monthly report of Plan activities completed in the previous calendar month. These monthly reports must include actions taken towards complying with requirements 1 through 5 of this Order, including but not limited to:

a) Provision of written discharge inspections and photographs;
b) Copies of all laboratory analytical reports and detailed acute toxicity test results;
c) Description of all effluent management activities, including any onsite treatment or offsite disposal, with supporting records;
d) Summary of the inspection and sampling results;
e) Interpretation of the laboratory analytical results by a Qualified Professional; and
f) Precipitation data and summary for the month.

All monthly reports must include a comparison in tabular format, showing each sampling location, the analytical data for the current reporting period along with all analytical data collected for that location since March 2023. All monthly reports must be prepared and signed by a Qualified Professional operating within their scope of practice. Monthly reports shall continue until further notice in writing from the Director.

Details/Findings:

On September 20, 2024, the Director approved the 2024 Sampling Plan. That approval stated that the monthly reports were due starting November 1, 2024. In a January 10, 2025, e-mail, the Director revised the reporting date to the 15th day of each month for reporting of activities from the previous month.

The July 2025 Monitoring Report was received on August 14, 2025. The August 2025 Monitoring Report was received on September 12, 2025. The September 2025 Monitoring Report was received on September 12, 2025. The October 2025 Monitoring Report was received on October 15, 2025. The reports were submitted on-time.

As there were no discharges reported in August or September, no samples were collected. Therefore, items b) and e) are not applicable for those months.

The July, August, September and October 2025 Monitoring Reports included all required elements.

DWR is in compliance with Order Requirement 5 during this Inspection Period.

Compliance:

In

Requirement Description:

Pollution Abatement Order - Required Action 6

6. Each time a report, plan, or monthly report is submitted to the Director, The Qualified Professional(s) performing any of the following in response to this Order: performing work, authoring reports, authoring the Report and Plan, providing reporting, sampling, analyzing, constructing or modifying works, or providing opinions must complete and submit the attached Declaration of Competency and Conflict of Interest Disclosure Statement forms.

Details/Findings:

The July, August, September and October 2025 Monitoring Reports were signed and sealed by Gillian Helpard, a registered professional chemist. The monthly submissions included Declaration of Competency and Conflict of Interest Disclosure Statement forms from Ms. Helpard.

No other reports or plans were received from DWR during the Inspection Period.

DWR is in compliance with this requirement.

Compliance:

In

Requirement Description:

Pollution Abatement Order - Required Action 7

7. All information required above must be submitted to the Director by email at: environmentalcompliance@gov.bc.ca

Details/Findings:

All submissions were sent to the correct email address.

Compliance:

In

Compliance History:

2025

- 2025-08-21 IR 249074 Notice: Pollution Abatement Order 112057
- 2025-08-11 IR 244785 AMP: Pollution Abatement Order 112057 - Required Action 4(B), Required Action 4(C), Required Action 4(D), Required Action 4(E), Required Action 4(F), Required Action 4(G), Required Action 4(H), Required Action 4(I), Required Action 4(J), Required Action 4(L)
- 2025-06-20 IR244510 AMP: Pollution Abatement Order 112057 - Required Action 4(B), Required Action 4(C), Required Action 4(D), Required Action 4(E), Required Action 4(F), Required Action 4(G), Required Action 4(H), Required Action 4(I), Required Action 4(J), Required Action 4(K)
- 2025-06-04 IR 243398 AMP: Pollution Abatement Order 112057 - Required Action 4
- 2025-05-06 IR 241941 AMP: Pollution Abatement Order 112057 - Required Action 1, Required Action 4
- 2025-03-25 IR 240675 AMP: Pollution Abatement Order 112057 - Required Action 4
- 2025-02-28 IR 238568 AMP: Pollution Abatement Order 112057 - Required Action 1, Required Action 3, Required Action 4
- 2025-01-23 IR 238061 AMP: Pollution Abatement Order 112057 - Required Action 1, Required Action 3, Required Action 4

2024

- 2024-12-13 IR 236755 AMP: Pollution Abatement Order 112057 - Required Action 4, Required Action 5, Required Action 6
- 2024-11-21 IR 235281 Warning: Pollution Abatement Order 112057 - Required Action 4, Required Action 5
- 2024-11-12 IR 235424 Advisory: Environmental Management Act 91.2 (1)(a), Spill Reporting Regulation (187/2017) (EMA) 4 (1)
- 2024-08-23 IR 230462 Warning: Pollution Abatement Order 112057 - Required Action 3
- 2024-08-02 IR 228922 AMP: Pollution Abatement Order 112057 - Required Action 1
- 2024-08-02 IR 225587 AMP: Environmental Management Act Section 6 (2)
- 2024-04-22 IR 222735 Warning: Pollution Abatement Order 112057 - Required Action 2, Required Action 3, Required Action 6
- 2024-03-25 IR 221886 Notice: Information Order 111550
- 2024-02-16 IR 220776 Notice: Information Order 111550
- 2024-01-22 IR 219527 Notice: Information Order 111550

2023

- 2023-12-20 IR 218684 Notice: Information Order 111550
- 2023-11-24 IR 217482 Warning: Information Order 111550 - Required Action 3 Sampling and Monitoring Plan Implementation
- 2023-10-19 IR 215625 Notice: Information Order 111550
- 2023-09-19 IR 213864 Notice: Information Order 111550
- 2023-08-16 IR 211704 Notice: Information Order 111550
- 2023-07-17 IR 209740 Notice: Information Order 111550
- 2023-06-30 IR 207681 Warning: Information Order 111550 - Required Action 2 Submit a Sampling and Monitoring Plan
- 2023-04-28 IR 205501 AMP: Information Order 111550- Required Action 4 Monthly Report
- 2023-03-02 IR 203307 Notice: Information Order 111550

2022

- 2022-12-08 IR 199271 Warning Unauthorized Discharge Environmental Management Act Section 6(2)
- 2022-09-06 IR 193589 Warning Unauthorized Discharge Environmental Management Act Sections 6(2) and 13
- 2022-04-29 IR 184988 Warning Unauthorized Discharge Environmental Management Act 6(2)

The Ministry of Environment Compliance and Enforcement Policy and Procedure (C&E Policy) prescribes common requirements and procedures for all Ministry staff to ensure consistent and risk-based assessment and response to noncompliance. Using the Non-Compliance Decision Matrix, the compliance determination for this inspection has been assessed as **Level 2, Category D, Investigation.**

More information about Environmental Compliance, the Non-Compliance Decision Matrix, and reporting and data submission requirements can be found at the links below:

General compliance information:
www.gov.bc.ca/environmentalcompliance

Non-Compliance Decision Matrix information:
www2.gov.bc.ca/gov/content?id=41FAF54F96214C218329AC218700F17F

Reporting and data submission requirements (send to EnvAuthorizationsReporting@gov.bc.ca):
www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/comply

On December 12, 2024, DWR was issued AMP 2024-43 for $19,450 for failure to comply with Required Action 1 of the Order and AMP 2024-42 for $26,700 for contravening Section 6(2) of EMA for an unauthorized discharge of waste into the environment. AMPs 2024-42 and 2024-43 are currently under appeal to the EAB (EAB-EMA-25-G001). On July 17, 2025, DWR was issued AMP 2024-75 for $72,050 for failure to comply with Required Actions 1 and 4 of the Order.

On January 23, 2023, prior to this Order, the Ministry issued Information Order 111550 (IO) to DWR, which was cancelled on March 15, 2024. On October 11, 2023, DWR was issued AMP 2023-31 for $500 for failure to comply with the IO. AMP 2023-31 is currently under appeal to the EAB (EAB-EMA-23-A025).

Please be advised that this inspection report may be published on the provincial government website within 7 days.

Below are attachments related to this inspection.

If you have any questions about this letter, please contact the undersigned.

Yours truly,

Jurgen Deagle
Environmental Protection Officer

cc: Gillian Helpard, TTOHS
Michael Sloan, SLR
Brian Fagan, Northwin Environmental
Ministry of Environment and Parks, Integrated Environmental Enforcement Unit

Attachments:
1) Appendix 1: Site map (From DWR Mitigation and Treatment Plan, 2024-10-31)

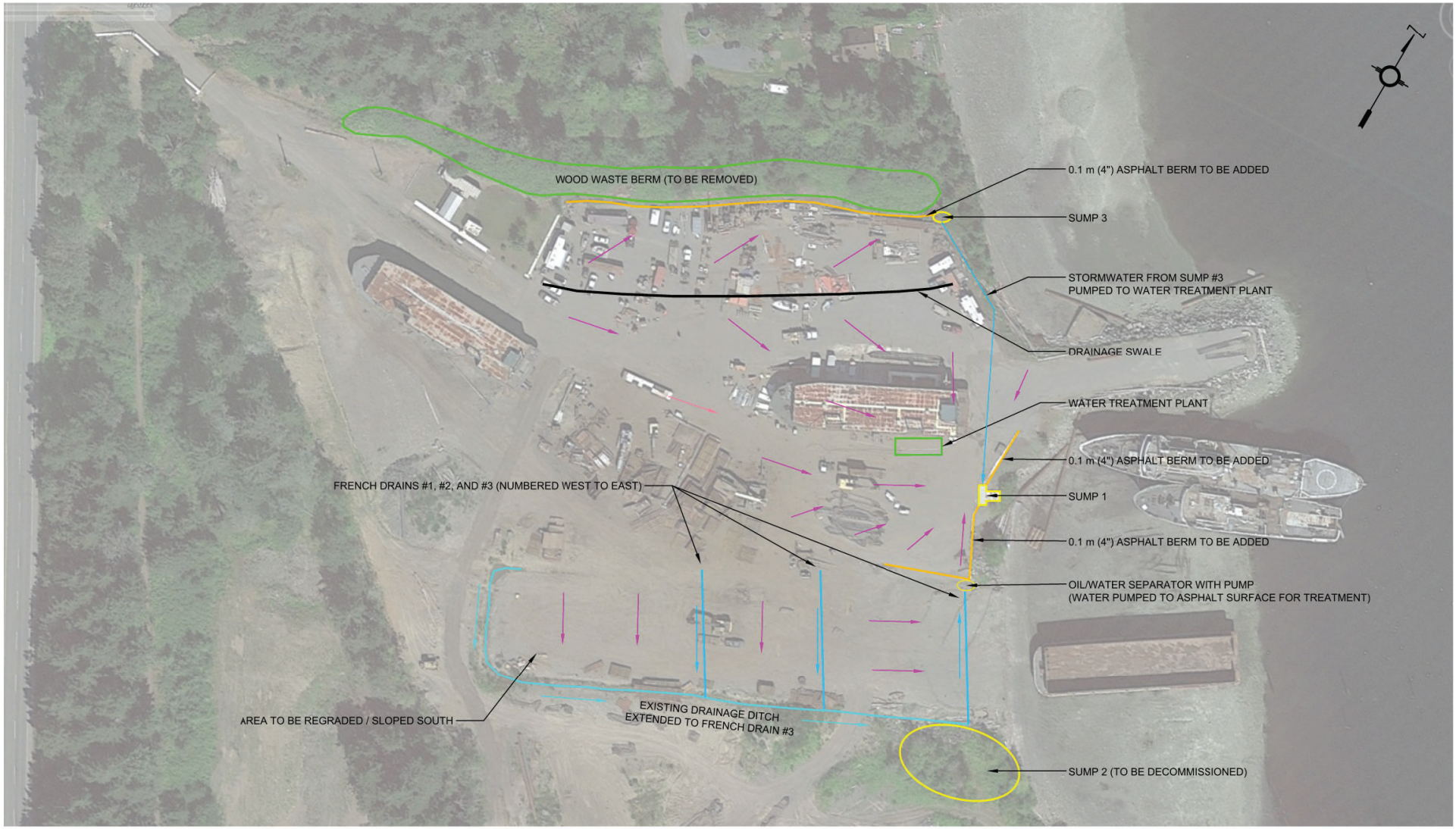
2) Appendix 2: Inspection Photographs
Photo 1 - Water flowing over berm near Sump 1
Photo 2 - South edge of asphalt pad
Photo 3 - Discharge from gravel pad
Photo 4 - Discharge from Sump 2
Photo 5 - Uncovered stockpile of berm material

3) Appendix 3: Laboratory Certificate of Analysis: 2025-10-27 Samples

Deliver via:
Email: [X] **Fax:** [ ] **Mail:** [ ]
Registered Mail: [ ] **Hand Delivery:** [ ]

Ministry of Environment and Parks
Compliance and Environmental Enforcement Branch
Mailing Address: 2080-A Labieux Rd Nanaimo BC V9T 6J9
Telephone: 250 751 3100
Facsimile: 250 751 3103
Website: www.gov.bc.ca/env

Appendix 1: Site Map



envirochem
206-267 Esplanade W,
North Vancouver, BC V7M1A5
T: 604-986-0233
E: response@envirochem.com

LEGEND:
- DIRECTION OF SURFACE RUNOFF FLOW
- DIRECTION OF FLOW IN DRAINS
- DIRECTION OF FLOW IN DITCH

SCALE:
1 : 1,000 (APPROX.)
0 25 50 75 100
METRES

TITLE:	SITE PLAN	FIGURE NO. 1	REVISION NO. 2
		DATE: 2024-10-18	
CLIENT:	DEEP WATER RECOVERY LTD.	PROJECT NO. 22258	
PROJECT:	MITIGATION AND TREATMENT PLAN	DRAWN BY: PD	CHECKED BY: DS
ADDRESS:	5084 ISLAND HIGHWAY SOUTH, UNION BAY, BC		

Appendix 2: Inspection Photographs

Photo 1 - Water flowing over berm near Sump 1

Photo 2 - South edge of asphalt pad

Photo 3 - Discharge from gravel pad

Photo 4 - Discharge from Sump 2

Photo 5 - Uncovered stockpile of berm material

Appendix 3: Laboratory Certificate of Analysis

CERTIFICATE OF ANALYSIS

Work Order	:	**VA25C8894**			
Client	:	**Tsolum & Tsable Environmental Ltd.**	Laboratory	:	ALS Environmental - Vancouver
Contact	:	Gillian Helpard	Account Manager	:	Tasnia Tarannum
Address	:	2213 Northfield Road Nanaimo British Columbia Canada V9S 3C3	Address	:	8081 Lougheed Highway Burnaby BC Canada V5A 1W9
Telephone	:	(250)871-8638	E-mail	:	tasnia.tarannum@alsglobal.com
Project	:	Z0134-142	Telephone	:	+1 604 253 4188
PO	:	Z0134-142	Date Samples Received	:	29-Oct-2025 11:05
C-O-C number	:	----	Date Analysis Commenced	:	30-Oct-2025
Sampler	:	Gillian Helpard	Issue Date	:	06-Nov-2025 07:26
Site	:	5084 Island Highway South, Union Bay			
Quote number	:	Tsolum quote Gillian Helpard			
No. of samples received	:	3			
No. of samples analysed	:	3			

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Angelo Salandanan	Lab Assistant	Metals, Burnaby, British Columbia
Janice Leung	Supervisor - Organics Instrumentation	Organics, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Monica Ko	Supervisor - Inorganic	Inorganics, Burnaby, British Columbia
Robert Nguyen	Analyst	Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
mg/L	milligrams per litre
pH units	pH units
µg/L	micrograms per litre

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DLCI	Detection Limit Raised: Chromatographic interference due to co-elution.

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	Sump 1 Discharge ----	Gravel Ramp ----	NC-HWY ----	----	----
					Client sampling date / time	27-Oct-2025 12:00	27-Oct-2025 12:00	27-Oct-2025 12:00	----	----
						VA25C8894-001	VA25C8894-002	VA25C8894-003	----	----
						Result	Result	Result	----	----
Physical Tests										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L		----	121	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L		32.1	----	52.6	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.50	mg/L		----	125	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L		32.9	----	52.1	----	----
pH	----	E108/VA	0.10	pH units		7.18	8.11	7.11	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L		8.6	11.6	<3.0	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L		0.528	0.164	0.0692	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		0.00049	0.00029	<0.00010	----	----
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00078	0.00057	0.00014	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.0606	0.0138	0.00915	----	----
Beryllium, total	7440-41-7	E420/VA	0.000020	mg/L		----	<0.000020	----	----	----
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L		<0.000100	----	<0.000100	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L		0.012	0.186	0.057	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		0.0000558	0.0000091	<0.0000050	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		9.79	35.8	14.1	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		0.000015	<0.000010	<0.000010	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		0.00248	0.00095	<0.00050	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		0.00055	0.00015	<0.00010	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.0308	0.0273	0.00279	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	Sump 1 Discharge ----	Gravel Ramp ----	NC-HWY ----	----	----
					Client sampling date / time	27-Oct-2025 12:00	27-Oct-2025 12:00	27-Oct-2025 12:00	----	----
						VA25C8894-001	VA25C8894-002	VA25C8894-003	----	----
						Result	Result	Result	----	----
Total Metals										
Iron, total	7439-89-6	E420/VA	0.010	mg/L		1.74	0.229	0.066	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.00843	0.000190	0.000054	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		<0.0010	<0.0010	<0.0010	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		2.05	8.53	4.11	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.120	0.0127	0.00218	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L		<0.0000050	----	<0.0000050	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		0.000270	0.000694	0.000056	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		0.00204	0.00077	<0.00050	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		<0.050	<0.050	<0.050	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		0.874	3.30	0.996	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00059	0.00068	0.00083	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		0.000052	0.000122	<0.000050	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		1.34	4.65	5.66	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	0.000019	<0.000010	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		7.51	60.5	10.9	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0661	0.184	0.0580	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		3.63	10.2	1.81	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		0.00013	<0.00010	<0.00010	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	Sump 1 Discharge ----	Gravel Ramp ----	NC-HWY ----	----	----
					Client sampling date / time	27-Oct-2025 12:00	27-Oct-2025 12:00	27-Oct-2025 12:00	----	----
						VA25C8894-001	VA25C8894-002	VA25C8894-003	----	----
						Result	Result	Result	----	----
Total Metals										
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		0.0440	0.0136	0.00447	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.000012	0.000123	<0.000010	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		0.00196	0.00231	0.00073	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		0.220	0.0081	0.0051	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		0.00028	0.00033	<0.00020	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.0048	0.0397	0.0165	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L		0.00039	0.00028	<0.00010	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L		0.00044	0.00051	0.00012	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.0548	0.0121	0.00881	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000020	mg/L		----	<0.000020	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L		<0.000100	----	<0.000100	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L		0.012	0.174	0.054	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L		0.0000401	0.0000058	<0.0000050	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		9.66	34.7	14.2	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L		<0.00050	0.00065	<0.00050	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		0.00883	0.0230	0.00238	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	Sump 1 Discharge ----	Gravel Ramp ----	NC-HWY ----	----	----
					Client sampling date / time	27-Oct-2025 12:00	27-Oct-2025 12:00	27-Oct-2025 12:00	----	----
						VA25C8894-001	VA25C8894-002	VA25C8894-003	----	----
						Result	Result	Result	----	----
Dissolved Metals										
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.013	0.036	0.010	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		0.000172	0.000054	<0.000050	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		<0.0010	<0.0010	<0.0010	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		1.94	8.28	4.16	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.0439	0.00096	<0.00010	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L		<0.0000050	----	<0.0000050	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		0.000173	0.000704	<0.000050	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		0.00097	0.00064	<0.00050	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.050	<0.050	<0.050	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		0.841	3.47	0.994	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00039	0.00086	0.00073	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		<0.000050	0.000134	0.000052	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		0.438	4.47	5.84	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		8.31	62.8	11.6	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0648	0.183	0.0549	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		3.66	10.4	1.83	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	Sump 1 Discharge ----	Gravel Ramp ----	NC-HWY ----	----	----
					Client sampling date / time	27-Oct-2025 12:00	27-Oct-2025 12:00	27-Oct-2025 12:00	----	----
						VA25C8894-001	VA25C8894-002	VA25C8894-003	----	----
						Result	Result	Result	----	----
Dissolved Metals										
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L		<0.00030	0.00164	0.00037	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L		<0.000010	0.000115	<0.000010	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		<0.00050	0.00164	0.00051	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.179	0.0053	0.0049	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00030	mg/L		----	0.00033	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		<0.00020	----	<0.00020	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-		Laboratory	----	Laboratory	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Laboratory	Laboratory	Laboratory	----	----
Volatile Organic Compounds										
Chlorobenzene	108-90-7	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Chloromethane	74-87-3	E611C/VA	5.0	µg/L		<5.0	----	<5.0	----	----
Dichlorobenzene, 1,2-	95-50-1	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Dichlorobenzene, 1,3-	541-73-1	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Dichlorobenzene, 1,4-	106-46-7	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Dichloropropane, 1,2-	78-87-5	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Dichloropropylene, cis+trans-1,3-	542-75-6	E611C/VA	0.75	µg/L		<0.75	----	<0.75	----	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C/VA	0.20	µg/L		<0.20	----	<0.20	----	----
Trichloroethane, 1,1,2-	79-00-5	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	Sump 1 Discharge ----	Gravel Ramp ----	NC-HWY ----	----	----
					Client sampling date / time	27-Oct-2025 12:00	27-Oct-2025 12:00	27-Oct-2025 12:00	----	----
						VA25C8894-001	VA25C8894-002	VA25C8894-003	----	----
						Result	Result	Result	----	----
Volatile Organic Compounds										
Trichlorofluoromethane	75-69-4	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Volatile Organic Compounds [Drycleaning]										
Carbon tetrachloride	56-23-5	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Chloroethane	75-00-3	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Dichloroethane, 1,1-	75-34-3	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Dichloroethane, 1,2-	107-06-2	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Dichloroethylene, 1,1-	75-35-4	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Dichloroethylene, cis-1,2-	156-59-2	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Dichloroethylene, trans-1,2-	156-60-5	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Dichloromethane	75-09-2	E611C/VA	1.0	µg/L		<1.0	----	<1.0	----	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Tetrachloroethylene	127-18-4	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Trichloroethane, 1,1,1-	71-55-6	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Trichloroethylene	79-01-6	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Vinyl chloride	75-01-4	E611C/VA	0.40	µg/L		<0.40	----	<0.40	----	----
Volatile Organic Compounds [Fuels]										
Benzene	71-43-2	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Ethylbenzene	100-41-4	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Styrene	100-42-5	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Toluene	108-88-3	E611C/VA	0.40	µg/L		<0.40	----	<0.40	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	Sump 1 Discharge ----	Gravel Ramp ----	NC-HWY ----	----	----
					Client sampling date / time	27-Oct-2025 12:00	27-Oct-2025 12:00	27-Oct-2025 12:00	----	----
						VA25C8894-001	VA25C8894-002	VA25C8894-003	----	----
						Result	Result	Result	----	----
Volatile Organic Compounds [Fuels]										
Xylene, m+p-	179601-23-1	E611C/VA	0.40	µg/L		<0.40	----	<0.40	----	----
Xylene, o-	95-47-6	E611C/VA	0.30	µg/L		<0.30	----	<0.30	----	----
Xylenes, total	1330-20-7	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Volatile Organic Compounds [THMs]										
Bromodichloromethane	75-27-4	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Bromoform	75-25-2	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Chloroform	67-66-3	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Dibromochloromethane	124-48-1	E611C/VA	0.50	µg/L		<0.50	----	<0.50	----	----
Hydrocarbons										
EPH (C10-C19)	----	E601A/VA	250	µg/L		<250	----	<250	----	----
EPH (C19-C32)	----	E601A/VA	250	µg/L		<250	----	<250	----	----
HEPHw	----	EC600A/VA	250	µg/L		<250	----	<250	----	----
LEPHw	----	EC600A/VA	250	µg/L		<250	----	<250	----	----
Hydrocarbons Surrogates										
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/VA	1.0	%		90.9	----	95.0	----	----
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611C/VA	1.0	%		84.4	----	82.6	----	----
Difluorobenzene, 1,4-	540-36-3	E611C/VA	1.0	%		96.8	----	96.6	----	----
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	83-32-9	E641A/VA	0.010	µg/L		<0.010	----	<0.010	----	----
Acenaphthylene	208-96-8	E641A/VA	0.010	µg/L		<0.010	----	<0.010	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	Sump 1 Discharge ----	Gravel Ramp ----	NC-HWY ----	----	----
					Client sampling date / time	27-Oct-2025 12:00	27-Oct-2025 12:00	27-Oct-2025 12:00	----	----
						VA25C8894-001	VA25C8894-002	VA25C8894-003	----	----
						Result	Result	Result	----	----
Polycyclic Aromatic Hydrocarbons										
Acridine	260-94-6	E641A/VA	0.010	µg/L		<0.012 DLCI	----	<0.010	----	----
Anthracene	120-12-7	E641A/VA	0.010	µg/L		<0.010	----	<0.010	----	----
Benz(a)anthracene	56-55-3	E641A/VA	0.010	µg/L		<0.010	----	<0.010	----	----
Benzo(a)pyrene	50-32-8	E641A/VA	0.0050	µg/L		<0.0050	----	<0.0050	----	----
Benzo(b+j)fluoranthene	n/a	E641A/VA	0.010	µg/L		0.013	----	<0.010	----	----
Benzo(b+j+k)fluoranthene	n/a	E641A/VA	0.015	µg/L		<0.015	----	<0.015	----	----
Benzo(g,h,i)perylene	191-24-2	E641A/VA	0.010	µg/L		<0.010	----	<0.010	----	----
Benzo(k)fluoranthene	207-08-9	E641A/VA	0.010	µg/L		<0.010	----	<0.010	----	----
Chrysene	218-01-9	E641A/VA	0.010	µg/L		<0.017 DLCI	----	<0.010	----	----
Dibenz(a,h)anthracene	53-70-3	E641A/VA	0.0050	µg/L		<0.0050	----	<0.0050	----	----
Fluoranthene	206-44-0	E641A/VA	0.010	µg/L		0.029	----	<0.010	----	----
Fluorene	86-73-7	E641A/VA	0.010	µg/L		<0.010	----	<0.010	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A/VA	0.010	µg/L		<0.010	----	<0.010	----	----
Methylnaphthalene, 1-	90-12-0	E641A/VA	0.010	µg/L		<0.010	----	<0.010	----	----
Methylnaphthalene, 2-	91-57-6	E641A/VA	0.010	µg/L		<0.010	----	<0.010	----	----
Naphthalene	91-20-3	E641A/VA	0.050	µg/L		<0.050	----	<0.050	----	----
Phenanthrene	85-01-8	E641A/VA	0.020	µg/L		<0.020	----	<0.020	----	----
Pyrene	129-00-0	E641A/VA	0.010	µg/L		0.026	----	<0.010	----	----
Quinoline	91-22-5	E641A/VA	0.050	µg/L		<0.050	----	<0.050	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Chrysene-d12	1719-03-5	E641A/VA	0.1	%		111	----	102	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

					Client sample ID	Sump 1 Discharge ----	Gravel Ramp ----	NC-HWY ----	----	----
					Client sampling date / time	27-Oct-2025 12:00	27-Oct-2025 12:00	27-Oct-2025 12:00	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA25C8894-001	VA25C8894-002	VA25C8894-003	----	----
						Result	Result	Result	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%		105	----	98.4	----	----
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%		114	----	106	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17 -

Page of

Report To	Contact and company name below will appear on the final report
Company:	Tsolum & Tsable Occupational Health & Safety
Contact:	Gillian Helpard
Phone:	250.871.8638
	Company address below will appear on the final report
Street:	800A 8th Street
City/Province:	Courtenay, BC
Postal Code:	V9N 1N8
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	
Contact:	Carie Curran

Report Format / Distribution

Select Report Format: ☑ PDF ☐ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: ghelpard@ttohs.com

Email 2:

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: admin@ttohs.com

Email 2:

Project Information

ALS Account # / Quote #:	
Job #:	Z0134-142
PO / AFE:	Z0134-142
LSD:	5084 Island Highway South, Union Bay

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#:
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

ALS Lab Work Order # (lab use only):

ALS Contact: Tasnia | Sampler: Gillian Helpard

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	pH, TSS, Hardness	Total metals	Dissolved Metals	Total mercury	Dissolved Mercury	LEPH/HEPH	PAH	VOCs	96 Hour Rainbow Trout Toxicity (100% effuler						SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	Sump 1 Discharge	27-Oct-25	12:00	WATER	9	R	R	R	R	R	R	R	R								
	Gravel Ramp	"	"	WATER	3	R	R	R													
	NC-HWY	"	"	WATER	9	R	R	R	R	R	R	R	R								

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

Environmental Division Vancouver

Work Order Reference VA25C8894

Telephone : +1 604 253 4188

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

S... by clicking on the drop-down list below ...nly)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice Packs ☑ Ice Cubes ☐ | Custody seal intact Yes ☐ No ☐ n/a

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
						5	

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
JC		1105am

Rcvd 29Oct2025

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

NAUTILUS ENVIRONMENTAL

10823 27th Street SE Calgary, Alberta Canada T2Z 3V9
Tel (403) 253-7121 Fax (403) 252-9363
www.nautilusenvironmental.ca

Trout Test Summary

Client: ble Occupational Health a | Client #: TOS100 | Reference #: 2526-0499

Date Collected: 2025-10-27 | Date Received: 2025-10-30 | Date: 2025-11-03

If you have any questions, please contact the Laboratory Supervisor or Technical Lead. Please note these results are preliminary and have not gone through final quality verification.

Description: Sump 1
Method: Rainbow trout
Technician: EF/AY
Started: 2025-10-30
Ended: 2025-11-03

Sample Strength %	Cumulative Mortality % 24 hrs	48 hrs	72 hrs	96 hrs	Endpoint/Comments
Control	0	0	0	0	
100	0	0	0	0	